CSB IAS ACADEMY

The Road Map to Mussoorie…

MAINS COMPILATION

CURRENT AFFAIRS

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Dear Aspirants,

Welcome to the January edition of CSB IAS **Academy**, thoughtfully curated to equip you with the knowledge and analytical skills required for the UPSC Civil Services Examination. As we stepped into 2025, this issue serves as a comprehensive guide to bridging the gap between your preparation and the dynamic current affairs landscape. We are getting ready for 2025 CSE MAINS.

In this edition, we explore critical issues like **Rupee depreciation**, the feasibility of **Great Nicobar Project**, the **Genome-India Project**, and the **Digital Data Protection Rules, 2025** . Highlights include the **ISRO 2024 Roundup**, , **road infrastructure of India**, **PM Svamitva scheme** and foreign investment in India, alongside global perspectives on the **Trump 2.0** and India-Afghanistan relations, ensuring a comprehensive alignment with the UPSC syllabus.

By aligning these themes with the UPSC syllabus, **iMPACT** aims to be your indispensable resource for acing the Mains Examination. With the New Year, let this edition be a catalyst for honing your critical thinking and answer writing abilities.

Happy Learning and a Prosperous New Year!
CSB IAS Academy Team

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GENERAL STUDIES-I

1. EARTHQUAKES

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Geography >> Earthquakes and Seismic Zones

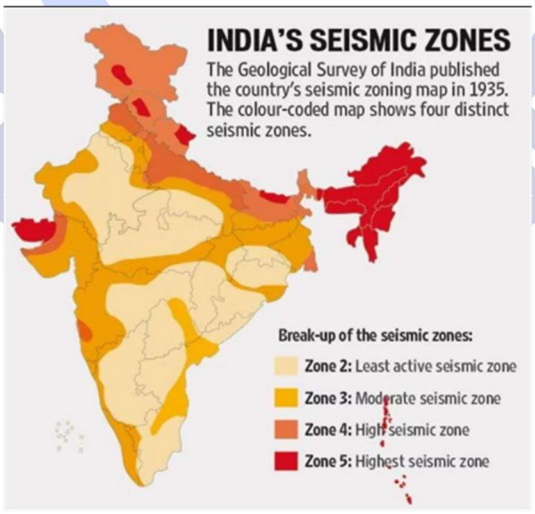
REFERENCE NEWS:

At least 126 people were killed and 188 injured as a strong earthquake struck the Tibet region on Tuesday morning. The quake struck at 9:05 am local time (01:05 GMT) at a depth of 10km (6.2 miles), according to the China Earthquake Networks Centre, which recorded a magnitude of 6.8. However, the United States Geological Survey measured its magnitude as 7.1.

As an impact of the earthquake, tremors were felt in neighbouring Nepal's capital Kathmandu and northern parts of India, particularly Bihar, where people were reportedly seen running outside their houses and apartments. However, no damage to properties has been reported.

EARTHQUAKE ZONE IN INDIA:

An **earthquake** is the sudden shaking or trembling of the Earth's surface caused by the release of energy from the Earth's crust. This release occurs due to the movement of tectonic plates, volcanic activity, or human activities like mining and reservoir-induced seismicity.



Over **58% of India's land area** is prone to earthquakes. India is divided into **four seismic zones** (Zone II, III, IV, and V) based on the probability of an earthquake and its intensity.

- **Zone V (Very High Risk):** Regions of northeast India, northern Bihar, Himachal Pradesh, Uttarakhand, parts of Jammu and Kashmir, Kutch in Gujarat and Andaman and Nicobar Islands. Most seismically active; earthquakes above magnitude 8 can occur.
    - 1950 Assam-Tibet earthquake (8.6 magnitude).
- **Zone IV (High Risk):** Regions in Jammu and Kashmir, Delhi, Sikkim, parts of Punjab, Haryana, and West Bengal. Earthquakes between magnitudes 7 and 8 are likely.
    - 2005 Kashmir earthquake (7.6 magnitude).
- **Zone III (Moderate Risk):** Regions in Kerala, Goa, Western Maharashtra and Gujarat. Earthquakes of magnitude 6-7 are possible.
- **Zone II (Low Risk):** Southern India and parts of the central and western regions. Least prone to earthquakes. Occasional tremors, but no significant seismic activity recorded.

The recent earthquake: According to the China Earthquake Networks Centre, the point on the surface below which the epicentre lay was located in Tingry county in the Shigatse region of Tibet. This region lies 4-5 km above sea level on average and is home to some eight lakh people; the county itself is home to around 7,000 people.

According to preliminary assessments, the quake's mainshock may have emerged in the **Lhasa terrane. A terrane is a specific fragment of the crust.**

The Lhasa terrane includes sites involved in China's construction of the world's largest hydroelectric-power dam.

CAUSES OF EARTHQUAKES IN INDIA

- **Tectonic Plate Movements**: The movement, collision, and subduction of tectonic plates. India lies on the **Indian Plate**, which is moving northward at a rate of approximately **5 cm per year**. The collision of the Indian Plate with the **Eurasian Plate** forms the Himalayan mountain range and triggers earthquakes.
    - **1950 Assam-Tibet Earthquake (Magnitude: 8.6)**: Caused by the collision of the Indian and Eurasian plates. One of the strongest earthquakes in recorded history.
    - **2015 Nepal Earthquake (Magnitude: 7.8)**: Occurred along the Himalayan frontal thrust.
- **Fault Zones**: Stress accumulation and sudden release along fault lines. Fault lines are fractures in the Earth's crust where tectonic plates or rock masses move. India has several active fault lines, including the **Himalayan Frontal Thrust**, **Narmada Fault**, and **Bhuj Fault**.

- **2001 Bhuj Earthquake, Gujarat (Magnitude: 7.7)**: Triggered by movement along the **Kutch Fault**. Over 20,000 people died, with extensive infrastructure damage.
- **1993 Latur Earthquake, Maharashtra (Magnitude: 6.4)**: Resulted from movement along an intra-plate fault.

- **Subduction Zones**: The Indian Plate subducting beneath the Eurasian and Burmese plates. Subduction zones are areas where one tectonic plate is forced beneath another. In northeastern India, the Indian Plate is subducting beneath the **Burmese Plate**.
  - **1897 Shillong Earthquake (Magnitude: 8.1)**: Resulted from the subduction of the Indian Plate beneath the Burmese Plate.
- **Reservoir-Induced Seismicity (RIS)**: Seismic activity triggered by the weight of large reservoirs and changes in water pressure. The impoundment of water in large reservoirs increases stress on underlying rock layers, causing seismic activity.
  - **1967 Koyna Earthquake, Maharashtra (Magnitude: 6.3)**: Caused by the Koyna Dam. Over 200 people died, with extensive property damage.
- **Volcanic Activity**: Movement of magma beneath the Earth's surface. Volcanic earthquakes are less common in India as it has limited active volcanic zones. Most volcanic activity is concentrated in the Andaman and Nicobar Islands.
  - **Barren Island Volcano**: Seismic activity is often associated with eruptions in this active volcano in the Andaman Sea.
- **Human-Induced Seismicity**: Activities such as mining, fracking, and nuclear testing. Human-induced seismicity results from disturbances caused by human activities.
  - **Jharia Coalfield, Jharkhand**: Frequent tremors due to underground coal mining and fires.
  - **Pokhran Nuclear Tests (1998)**: Caused localized tremors in Rajasthan.
- **Landslides and Rockfalls**: The sudden movement of rock and soil due to gravity. Landslides in hilly areas, triggered by heavy rainfall or earthquakes, can also generate minor tremors.
  - **Chamoli Landslide, Uttarakhand (2021)**: Triggered localized tremors in the Himalayan region.

- **Intra-Plate Seismicity:** Stress within a tectonic plate rather than at its boundaries. Though rare, seismic activity occurs within the Indian Plate due to accumulated stress.
    - **1997 Jabalpur Earthquake, Madhya Pradesh (Magnitude: 6.0)**: Occurred due to intra-plate movement.
- **Geothermal Activity**: Movement of hot fluids beneath the Earth's crust. Geothermal regions in India, such as the Himalayas and Andaman Islands, occasionally experience seismic activity.
    - **Puga Valley, Ladakh**: Known for geothermal activity and minor tremors.

IMPACTS OF EARTHQUAKES IN INDIA:

- **Human Casualties and Injuries**: Earthquakes often lead to significant loss of lives and injuries due to building collapses and secondary disasters like landslides and fires.
    - **2001 Bhuj Earthquake (Gujarat)** with magnitude: 7.7 caused deaths over 20,000 and injured more than 1,50,000 people.
- **Economic Losses**: Damage to buildings, infrastructure, and businesses leads to massive economic losses.
    - **Bhuj Earthquake (2001)**: Economic Loss estimated at ₹10,000 crore (approximately $2 billion). **Latur Earthquake (1993)**: Economic Loss: Estimated ₹1,000 crore (approximately $150 million).
- **Damage to Infrastructure:** Collapsed buildings, roads, bridges, and disrupted utilities hinder rescue and recovery efforts.
    - **2015 Nepal Earthquake**: Tremors in Bihar damaged over 50,000 houses and disrupted power supply.
- **Displacement and Homelessness:** Massive displacement of populations occurs due to destruction of homes and livelihoods.
    - **2005 Kashmir Earthquake**: Thousands displaced in Jammu and Kashmir.
- **Environmental Impacts**: Landslides, soil liquefaction, and changes in watercourses lead to long-term ecological disruption.
    - **2001 Bhuj Earthquake**: Created large fissures in the ground, altering the course of rivers in the region.

- **Psychological and Social Impacts**: Trauma, loss of loved ones, and disruption of communities lead to long-term mental health issues.
    - Survivors of the **Bhuj Earthquake** reported post-traumatic stress disorder (PTSD) and anxiety disorders for years. In Latur, lack of immediate medical support exacerbated the psychological burden on affected communities.
- **Impact on Livelihoods**: Destruction of industries, farmlands, and small businesses affects income sources.
    - **Chamoli Earthquake (2021)**: Damaged hydroelectric projects impacted local employment and electricity supply.
- **Secondary Disasters**: Earthquakes often trigger landslides, floods, or fires, compounding the destruction.
    - **2015 Nepal Earthquake**: Triggered landslides in the Himalayan region, cutting off villages in Bihar and Uttar Pradesh.
- **Impact on Education**: Schools and educational institutions are often damaged, disrupting children's education.
- **Impact on Health Systems**: Earthquakes overwhelm healthcare systems, leading to delayed treatment and inadequate facilities.
    - **Latur Earthquake (1993)**: Limited access to medical aid and inadequate facilities worsened the health crisis.
- **Cultural and Historical Loss**: Earthquakes often damage monuments and cultural heritage sites.
    - **Nepal Earthquake (2015)**: Damaged UNESCO World Heritage Sites, including the Dharahara Tower and temples in Bihar.

MEASURES TO LESSEN THE IMPACT OF EARTHQUAKES IN INDIA:

Strengthening Infrastructure

- **Enforcing Building Codes:** The Bureau of Indian Standards (BIS) has seismic zone-specific building codes (e.g., IS 1893, IS 4326). However, implementation remains weak due to lack of enforcement and awareness. **Japan** enforces stringent building regulations under the Building Standards Law, incorporating shock-absorption technology like base isolators in skyscrapers.

- **Retrofitting Critical Infrastructure:** Many schools, hospitals, and government buildings in high-risk zones lack seismic retrofitting. **California, USA** has **Seismic Retrofit Program** strengthens bridges and overpasses to prevent collapse during earthquakes.

Early Warning Systems

- **Establishing Earthquake Monitoring Networks: India** Operates a network of seismological observatories managed by the **National Center for Seismology (NCS)** but has limited coverage compared to advanced nations. **Japan's Earthquake Early Warning (EEW) System** issues alerts seconds before the quake reaches populated areas using over 1,000 seismic stations.

Enhancing Preparedness

- **Community Awareness and Drills:** National Disaster Management Authority (NDMA) conducts awareness campaigns but with limited outreach. **Chile** has regular nationwide earthquake drills involving schools, offices, and the public.
- **Disaster-Ready Urban Planning:** Rapid urbanization has led to unplanned settlements in high-risk areas. **New Zealand**'s urban planning laws restrict construction in high-risk areas like fault lines.

Capacity Building for Disaster Response

- **Strengthening Disaster Response Teams:** The **National Disaster Response Force (NDRF)** is well-equipped but understaffed for large-scale disasters. **Turkey**'s **Disaster and Emergency Management Authority (AFAD)** trains local communities alongside professional responders.
- **Post-Disaster Rehabilitation:** Rehabilitation efforts are often delayed due to inadequate funding and planning. In **Haiti**, International organizations like the UN coordinated housing reconstruction and health services after the 2010 earthquake.

Leveraging Technology

- **Geospatial Mapping:** Limited use of Geographic Information Systems (GIS) for real-time seismic risk mapping. **Mexico** uses GIS to predict the impact of earthquakes and guide emergency services.
- **Using AI and Big Data:** Minimal use of AI for earthquake prediction and response optimization. **USA** use AI models analyze seismic data to improve earthquake forecasts and simulate disaster responses.

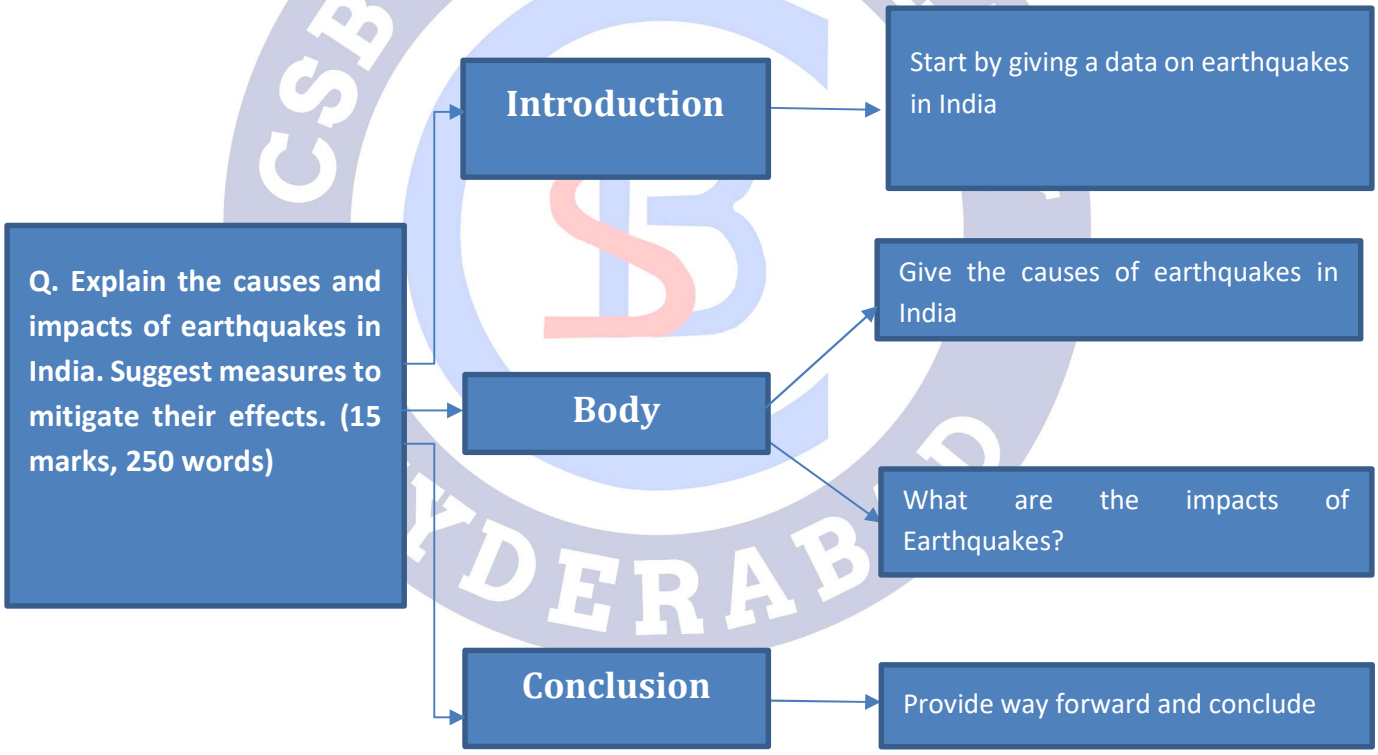
Policy and Governance

- **Implementing Zoning Regulations:** Seismic zoning maps exist but are poorly integrated into local development plans. **Japan** enforces strict zoning laws that consider seismic risks.
- **Strengthening Financial Mechanisms:** India has limited penetration of disaster insurance schemes. **New Zealand's Earthquake Commission (EQC)** provides financial assistance for earthquake-related damages.

PRACTICE QUESTION

Q. Explain the causes and impacts of earthquakes in India. Suggest measures to mitigate their effects. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Earthquakes, caused by the sudden release of energy in the Earth's crust, are among the most destructive natural disasters. Over **58% of India's land area** is seismically active, with regions like the Himalayas and northeast India prone to high-intensity earthquakes.

CAUSES OF EARTHQUAKES IN INDIA

1. **Tectonic Plate Movements**: India lies on the **Indian Plate**, which collides with the **Eurasian Plate**, forming the Himalayan mountain range.
    - **1950 Assam-Tibet Earthquake (8.6)**: Caused by plate collision.
    - **2015 Nepal Earthquake (7.8)**: Occurred along the Himalayan frontal thrust.
2. **Fault Zones**: Stress accumulation along faults like the **Himalayan Frontal Thrust** and **Bhuj Fault**.
    - **2001 Bhuj Earthquake (7.7)**: Movement along the Kutch Fault.
    - **1993 Latur Earthquake (6.4)**: Caused by intra-plate fault activity.
3. **Subduction Zones**: The **Indian Plate** subducting beneath the **Eurasian Plate**.
    - **1897 Shillong Earthquake (8.1)**.
4. **Reservoir-Induced Seismicity (RIS)**: Weight and pressure changes due to large reservoirs.
    - **1967 Koyna Earthquake (6.3)** caused by the Koyna Dam.
5. **Human-Induced Seismicity**: Mining, fracking, and nuclear testing.
    - Localized tremors from the **Pokhran Nuclear Tests (1998)**.

IMPACTS OF EARTHQUAKES IN INDIA

1. **Human Casualties and Injuries**: Building collapses and secondary disasters like landslides. **2001 Bhuj Earthquake** killed over **20,000** people and injured **1.5 lakh**.
2. **Economic Losses**: Damage to infrastructure and businesses. Bhuj Earthquake caused losses of ₹10,000 crore (~$2 billion).
3. **Displacement and Homelessness**: Destruction of homes and livelihoods. Thousands displaced in the **2005 Kashmir Earthquake**.
4. **Environmental Impacts**: Landslides and soil liquefaction alter landscapes. **Bhuj Earthquake** created fissures, changing river courses.
5. **Secondary Disasters**: Earthquakes often trigger landslides, floods, or fires. **2015 Nepal Earthquake** caused landslides in Bihar.
6. **Cultural and Historical Loss**: Damage to monuments and heritage sites. **2015 Nepal Earthquake** destroyed UNESCO heritage sites.

MEASURES TO MITIGATE EARTHQUAKE IMPACTS

1. **Strengthening Infrastructure**: Japan's seismic-resistant buildings with base isolators. Enforce seismic zone-specific building codes (e.g., IS 1893). Retrofit critical infrastructure like schools and hospitals.
2. **Early Warning Systems**: Japan's Earthquake Early Warning (EEW) System. Expand the **National Center for Seismology (NCS)** monitoring network. Integrate seismic alerts with public broadcasting systems.
3. **Preparedness and Awareness**: Chile's nationwide earthquake drills. Mandate earthquake drills in schools and workplaces. Conduct awareness campaigns through NDMA.
4. **Urban Planning**: New Zealand restricts construction in high-risk zones. Integrate seismic risk assessments into urban development plans. Relocate high-risk communities.
5. **Leveraging Technology**: Mexico uses GIS for real-time seismic mapping. Develop GIS-based risk maps for vulnerable areas. Collaborate with tech firms to use AI for earthquake prediction.
6. **Policy and Governance**: New Zealand's Earthquake Commission (EQC) provides disaster insurance. Strengthen disaster insurance penetration. Improve financial mechanisms for post-disaster relief.

Earthquakes pose a significant challenge to India's safety and development. By integrating global best practices with domestic policies, India can reduce earthquake risks and impacts. A multi-pronged approach focusing on resilient infrastructure, community preparedness, and robust governance is essential for long-term disaster management and resilience.

2. KUMBH MELA

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Art and Culture >> Festivals of India

REFERENCE NEWS:

Tens of thousands of Hindus seeking absolution of their sins are immersing themselves in freezing waters at the convergence of sacred rivers as India begins the **six-week Kumbh Mela festival.**

STORY BEHIND KUMBH MELA:

The Kumbh Mela is one of the largest religious gatherings in the world, celebrated by Hindus. Rooted in ancient mythology and tradition, it is a festival where devotees gather to take a holy dip at sacred rivers, seeking spiritual purification and salvation.

- The Sanskrit word kumbh means pitcher, or pot.
- The story goes that when Devas (gods) and Asuras (loosely translated as demons) churned the ocean, Dhanvantri emerged carrying a pitcher of amrita, or the elixir of immortality. To make sure the Asuras don't get it, Indra's son, Jayant, ran off with the pot. The Sun, his son Shani, Brihaspati (the planet Jupiter), and the Moon went along to protect him and the pot. As Jayant ran, the amrita spilt at four spots: **Haridwar, Prayagraj, Ujjain, and Nashik-Trimbakeshwar.**
- He ran for 12 days, and as one day of the Devas is equal to one year of humans, **Kumbh Mela is celebrated at these locations every 12 years,** based on the relative positions of the Sun, the Moon, and Jupiter.
- **Prayagraj and Haridwar** also hold the **Ardh-Kumbh** (ardh means half), every six years. The festival held after 12 years is called the **Poorna Kumbh,** or the Maha Kumbh.
- All four places are located on the banks of rivers — **Haridwar has the Ganga**, **Prayagraj is the sangam or meeting point of Ganga, Yamuna and the mythical Saraswati, Ujjain has the Kshipra**, and **Nashik-Trimbakeshwar the Godavari.**
- It is believed that taking a dip in these rivers during Kumbh, amid the specific alignment of the heavenly bodies, washes away one's sins and accrues punya (spiritual merit).
- **Ancient References**: The earliest mention of Kumbh Mela is found in the **Puranas**, such as the Bhagavata Purana, Vishnu Purana, and Brahma Purana. The tradition of gathering at Prayagraj dates back to at least the **Magh Mela** mentioned in ancient scriptures.

- The roots of the Kumbh Mela stretch back thousands of years, finding early references during **the Maurya and Gupta periods** (4th century BCE to 6th century CE).
- The initial gatherings, although not as large as the modern Kumbh Mela, drew pilgrims from across the Indian subcontinent. Over time, the Mela's significance grew alongside Hinduism's rise, with rulers like the Guptas further elevating its status as a revered religious congregation.
- The festival gained prominence during the reign of **Adi Shankaracharya** (8th century CE), who institutionalized the practice of ascetics gathering at the Kumbh Mela. Historical records by travellers like **Hiuen Tsang (7th century)** describe large religious gatherings at Prayagraj.
- During the medieval period, the Kumbh Mela received patronage from various royal dynasties, including **the Chola and Vijayanagar empires** in the south, and the **Delhi Sultanate and Mughals** in the north.
- Even Mughal emperors such as Akbar are noted to have participated in the celebrations, illustrating a **spirit of religious tolerance.**
- Historical accounts reveal that in 1565, Akbar granted the Naga Sadhus the honour of leading the royal entry into the Mela, an act symbolizing unity across religious and cultural lines.
- In the colonial period, British administrators observed and documented the festival, intrigued by its massive scale and the diverse congregations it drew. Figures such as British colonial administrator **James Prinsep chronicled the Kumbh Mela in the 19th century,** detailing its ritualistic practices, the vast congregations, and the socio-religious dynamics at play. These accounts contributed valuable insights into the Kumbh's evolution and its resilience through time.
- Post-independence, the Maha Kumbh Mela gained even greater significance, symbolizing national unity and India's rich cultural heritage**. Recognized by UNESCO in 2017 as an intangible cultural heritage of humanity,** the Kumbh Mela stands as a testament to the survival and evolution of ancient traditions in an era of modernization.
- **Types of Kumbh Mela: Purna Kumbh Mela** held every **12 years** at the four designated locations, **Ardh Kumbh Mela** held every **6 years** at Prayagraj and Haridwar, **Maha Kumbh Mela** held every **144 years** only at Prayagraj and **Magh Mela** an annual event at Prayagraj, considered a precursor to the Kumbh.

SIGNIFICANCE OF KUMBH MELA:

Social Significance

- **Unity in Diversity:** Kumbh Mela brings together millions of people from various social, economic, and cultural backgrounds, promoting unity and harmony.

- The 2019 Prayagraj Kumbh Mela witnessed participation from over **240 million people**, symbolizing collective faith.

- **Social Equality:** Pilgrims of all castes, genders, and social statuses bathe together in sacred rivers, dissolving social hierarchies.
  - Akharas (monastic orders) welcome all devotees without discrimination during the festival.
- **Platform for Social Awareness:** Government and NGOs use the event to spread awareness about health, hygiene, and education.
  - During the 2021 Haridwar Kumbh Mela, campaigns on **COVID-19 vaccination** and **sanitation** were prominently organized.

Cultural Significance

- **Preservation of Traditions:** The Mela showcases India's ancient cultural and spiritual traditions, passed down through centuries.
  - Rituals like the **Shahi Snan (Royal Bath)** and the participation of ascetics from Akharas highlight Hindu cultural practices.
- **Intangible Cultural Heritage:** UNESCO recognized the Kumbh Mela as an **Intangible Cultural Heritage of Humanity** in 2017, acknowledging its global cultural value.
- **Celebration of Art and Literature:** The festival promotes traditional art, music, and storytelling through performances, exhibitions, and gatherings.
  - Cultural programs during the Kumbh Mela feature folk music, dance, and devotional songs.
- **Spiritual Significance:** The event is rooted in the **Samudra Manthan (Churning of the Ocean)** myth and offers an opportunity for spiritual growth. Pilgrims believe that taking a dip in the sacred rivers purifies their souls and washes away sins.

Economic Significance

- **Boost to Local Economies:** The influx of millions of pilgrims generates significant revenue for local businesses, including hotels, transport, and street vendors.
  - The 2019 Prayagraj Kumbh Mela contributed approximately **₹1.2 lakh crore** to Uttar Pradesh's economy. According to various estimates, Maha Kumbh's budget stands at nearly Rs 6,382 crore and the event is expected to generate Rs 25,000 crore in revenue for the state of UP.
- **Employment Generation:** The event creates thousands of temporary jobs in logistics, security, sanitation, and hospitality.
  - During the Haridwar Kumbh Mela, thousands of workers were employed for infrastructure development.

- **Promotion of Tourism:** Kumbh Mela attracts domestic and international tourists, boosting India's tourism industry. Over **10 million foreign tourists** visited the Prayagraj Kumbh Mela in 2019.
- **Infrastructure Development:** Significant investments in infrastructure like roads, sanitation, and water supply benefit host cities in the long term.
    - The Prayagraj Kumbh Mela led to the construction of **22 pontoon bridges** and several permanent facilities.

International Significance

- **Global Recognition:** The Kumbh Mela's recognition as a **UNESCO Intangible Cultural Heritage** highlights India's spiritual and cultural leadership on the global stage.
- **Attraction for Foreign Tourists:** The festival attracts tourists and researchers, enhancing India's soft power. Visitors from over **190 countries** attended the 2019 Prayagraj Kumbh Mela.
- **Spiritual Diplomacy:** Kumbh Mela strengthens India's global image as a centre for spirituality and religious tourism. Delegations from countries like **Nepal, Bhutan, and Japan** often attend the event.
- **Collaboration with Global Organizations:** Partnerships with global entities for logistics, disaster management, and crowd control have enhanced India's expertise in handling mega-events. The **World Bank** praised the management of the 2019 Kumbh Mela for its efficiency.

CHALLENGES IN THE CONDUCT OF KUMBH MELA 2025:

Social Challenges

- **Managing Massive Crowds**: Ensuring the safety and orderly movement of an estimated **40-50 million pilgrims** on peak days is a logistical nightmare. The **2013 Kumbh Mela stampede** killed 36 people at the Allahabad Railway Station due to overcrowding.
- **Inclusivity and Accessibility**: Accommodating vulnerable groups, including the elderly, differently-abled, and those from economically weaker sections. Lack of sufficient ramps and facilities for the differently-abled was criticized during previous Kumbh Melas.
- **Spread of Diseases**: Risk of waterborne diseases, respiratory infections, and other health issues in densely populated areas. During the 2021 Haridwar Kumbh Mela, **COVID-19 cases surged**, raising concerns about pandemic management**.**
- **Cultural Sensitivities**: Balancing the diverse practices of different sects and Akharas (monastic orders) to avoid conflicts. Disputes among Akharas over procession schedules have delayed events in past Kumbh Melas.

Economic Challenges

- **High Costs of Infrastructure Development**: Building temporary and permanent infrastructure requires significant investment. The **2019 Prayagraj Kumbh Mela** cost over **₹4,200 crore**, with questions raised about accountability and fund utilization.
- **Employment and Livelihoods**: While the event generates temporary jobs, local businesses often face competition from larger vendors and government-sponsored stalls. Vendors in the 2019 Mela reported losses due to increased government-organized food stalls.
- **Revenue Generation vs. Expenditure**: Ensuring the economic benefits outweigh the costs. While the **2019 Prayagraj Kumbh Mela** contributed over **₹1.2 lakh crore** to Uttar Pradesh's economy, concerns about equitable distribution of revenue remain.

Environmental Challenges

- **River Pollution**: Millions of devotees bathing in the Ganga cause pollution from human waste, offerings, and detergents. Post-2019 Kumbh, the **Central Pollution Control Board** reported increased levels of **biochemical oxygen demand (BOD)** in the Ganga.
- **Waste Management**: Managing tons of waste, including plastics, food waste, and floral offerings. The 2019 Kumbh Mela generated **over 1,200 tons of waste daily**, posing a significant environmental burden.
- **Deforestation and Land Use**: Clearing large tracts of land for temporary structures can lead to habitat destruction. Encroachment along the Yamuna riverbank during previous events disrupted local ecosystems.
- **Climate Concerns**: Extreme weather events, such as unseasonal rains or coldwaves, could disrupt the event.

Technical Challenges

- **Infrastructure Management**: Ensuring robust roads, bridges, water supply, and sanitation for millions of participants. The **2013 Kumbh Mela** faced criticism for the collapse of makeshift bridges due to poor construction.
- **Crowd Control**: Monitoring and managing crowd movements in real-time. The **2019 Prayagraj Kumbh** deployed **AI-based crowd control systems**, yet challenges persisted on peak days.
- **Communication and Connectivity**: Providing uninterrupted mobile networks and internet connectivity for pilgrims, officials, and emergency services. During past events, network congestion due to the influx of users disrupted communications.

- **Health Services and Emergency Response**: Establishing adequate medical facilities and deploying health professionals to handle emergencies. The **2021 Haridwar Kumbh Mela** lacked sufficient medical teams to deal with COVID-19 surges.
- **Data and Surveillance**: Monitoring security through CCTV and drones while protecting the privacy of individuals. Use of **facial recognition technology** during the 2019 Kumbh raised concerns about data security.

WAY FORWARD

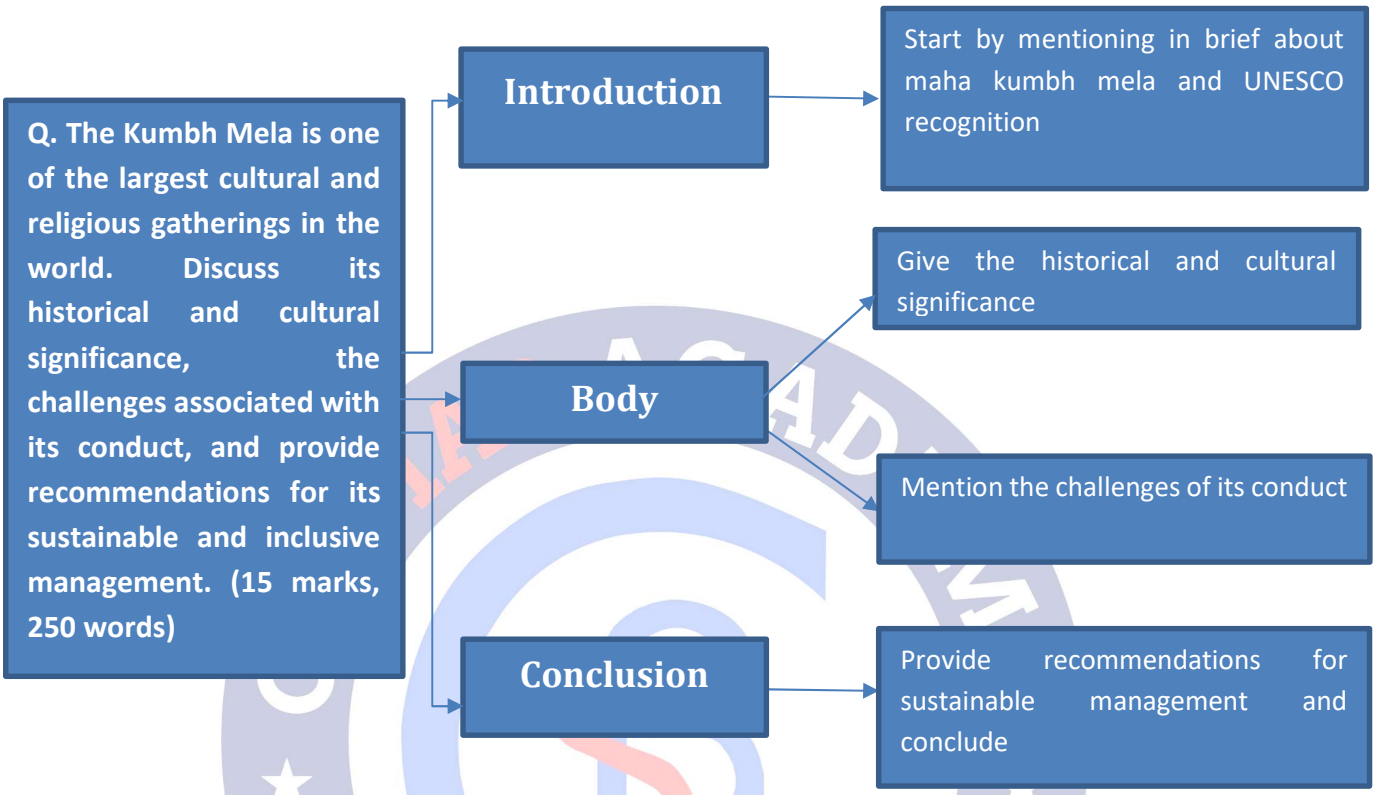
- **Social Strategies**: Set up dedicated zones for the elderly and differently-abled with easy access to facilities. Use **public health campaigns** to promote hygiene and prevent disease outbreaks.
- **Economic Measures**: Promote **eco-tourism** to ensure sustainable revenue generation. Ensure accountability in fund utilization through **third-party audits**.
- **Environmental Solutions**: Implement **zero-waste policies**, encouraging biodegradable materials. Strengthen river cleaning initiatives under programs like **Namami Gange**.
- **Technical Enhancements**: Deploy AI and drone technology for **crowd management** and emergency response. Expand **mobile infrastructure** to ensure uninterrupted communication

The **Maha Kumbh Mela in 2025** is not just a gathering; it is a journey towards the self. Beyond rituals and symbolic acts, it offers pilgrims an opportunity for inner reflection and a deeper connection with the divine. In a world often dominated by the demands of modern life, the **Maha Kumbh Mela stands as a beacon of unity, purity, and enlightenment**. This timeless pilgrimage serves as a powerful reminder that, despite humanity's varied paths, we are united in essence—a shared journey towards **peace, self-realization, and an enduring reverence for the sacred.**

PRACTICE QUESTION

Q. The Kumbh Mela is one of the largest cultural and religious gatherings in the world. Discuss its historical and cultural significance, the challenges associated with its conduct, and provide recommendations for its sustainable and inclusive management. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The **Kumbh Mela**, recognized as a UNESCO Intangible Cultural Heritage, is a spiritual gathering that holds immense historical, cultural, and social significance. Celebrated every 12 years at four sacred locations — Prayagraj, Haridwar, Nashik, and Ujjain — it symbolizes faith and unity. The Maha Kumbh Mela, held every 144 years, represents the zenith of this religious event, drawing millions of pilgrims.

HISTORICAL AND CULTURAL SIGNIFICANCE

1. **Historical Roots**: Finds references in ancient texts like the **Puranas** and gained prominence during the reign of **Adi Shankaracharya** in the 8th century. Historical records, such as those by **Hiuen Tsang** and Mughal Emperor Akbar, highlight its socio-religious importance.

2. **Cultural Significance**:

    - **Rituals**: Activities like the **Shahi Snan (Royal Bath)** symbolize spiritual cleansing.

- **Unity in Diversity**: Brings together people from all sections of society, dissolving hierarchies.
- **Promotion of Arts**: Features folk performances, devotional music, and exhibitions showcasing Indian heritage.

3. **Global Recognition**: The 2019 Prayagraj Kumbh Mela witnessed participation from **over 240 million people**, including pilgrims from **190 countries**, enhancing India's soft power.

CHALLENGES IN CONDUCTING KUMBH MELA

1. **Social Challenges**:
   - **Crowd Management**: Handling **40-50 million pilgrims** on peak days can lead to tragedies, such as the **2013 Kumbh Mela stampede**.
   - **Health Concerns**: Risk of disease outbreaks, as seen during the **COVID-19 surge** at the 2021 Haridwar Kumbh Mela.
   - **Accessibility Issues**: Inadequate facilities for vulnerable groups, including the elderly and differently-abled.
2. **Economic Challenges**:
   - **Infrastructure Costs**: The 2019 Prayagraj Kumbh cost **₹4,200 crore**, raising concerns over fund utilization.
   - **Revenue Distribution**: While the event generates **₹1.2 lakh crore** for the economy, benefits are unevenly distributed.
   - **Livelihood Disruption**: Local vendors often face competition from organized markets.
3. **Environmental Challenges**:
   - **River Pollution**: Increased levels of **biochemical oxygen demand (BOD)** in the Ganga post-Mela.
   - **Waste Management**: Over **1,200 tons of daily waste**, including non-biodegradable materials.
   - **Deforestation**: Land clearance for temporary infrastructure disrupts ecosystems.

4. **Technical Challenges**:
    - **Crowd Control**: Despite AI and drones, real-time management remains a concern.
    - **Connectivity Issues**: Network congestion affects emergency services and communication.
    - **Data Security**: Use of technologies like facial recognition raises privacy concerns.

WAY FORWARD

1. **Social Strategies**:
    - **Dedicated Zones**: Create accessible areas for vulnerable groups.
    - **Public Health Campaigns**: Focus on hygiene and vaccination drives to prevent disease outbreaks.
2. **Economic Measures**:
    - **Eco-Tourism**: Promote the event as a sustainable tourism model.
    - **Accountability**: Implement **third-party audits** for fund utilization.
3. **Environmental Solutions**:
    - **Zero-Waste Policies**: Encourage biodegradable materials and segregated waste collection.
    - **River Conservation**: Strengthen initiatives like **Namami Gange** to maintain water quality.
4. **Technical Enhancements**:
    - **AI for Crowd Management**: Deploy predictive analytics for real-time monitoring.
    - **Infrastructure Upgrades**: Enhance connectivity and emergency response systems.
5. **Inclusive Management**:
    - Foster collaboration with international organizations for better event planning and disaster management.
    - Ensure **transparent public consultations** to address stakeholder concerns.

The **Maha Kumbh Mela 2025** is not just a religious congregation but a celebration of India's spiritual and cultural ethos. By addressing social, economic, environmental, and technical challenges through sustainable and inclusive measures, the event can continue to exemplify unity, heritage, and resilience. Its successful management will reaffirm India's capability to host large-scale events, strengthening its global stature.

3. MELTING OF GLACIERS

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Geography > Geomorphology

REFERENCE NEWS:

- Recently, the United Nations has dedicated **2025 as the International Year of Glaciers' Preservation**, focusing on the vital role of glaciers in global climate systems and hydrological cycles. **March 21** will be commemorated as World Day for Glaciers starting from 2025. This initiative aims to heighten awareness and action toward the **rapidly melting glaciers**, as reported by the World Meteorological Organisation (WMO) and UNESCO.

WHAT ARE GLACIERS?

- Glaciers are essentially **large and thick masses of ice** that are formed on land due to the **accumulation of snow** over centuries.
- As per the **United States Geological Survey (USGS)**, glaciers typically form in regions where the mean **annual temperatures are close to the freezing point**. In these areas, significant snowfall occurs during winter, and the temperatures for the rest of the year do not completely melt the previous winter's snow accumulation.
- Due to their sheer mass and gravity**, glaciers tend to flow like very slow rivers.**
- Although there is no universal consensus on how large a mass of ice has to be to qualify as a glacier, the **USGS says a commonly accepted guideline is around 10 hectares.**

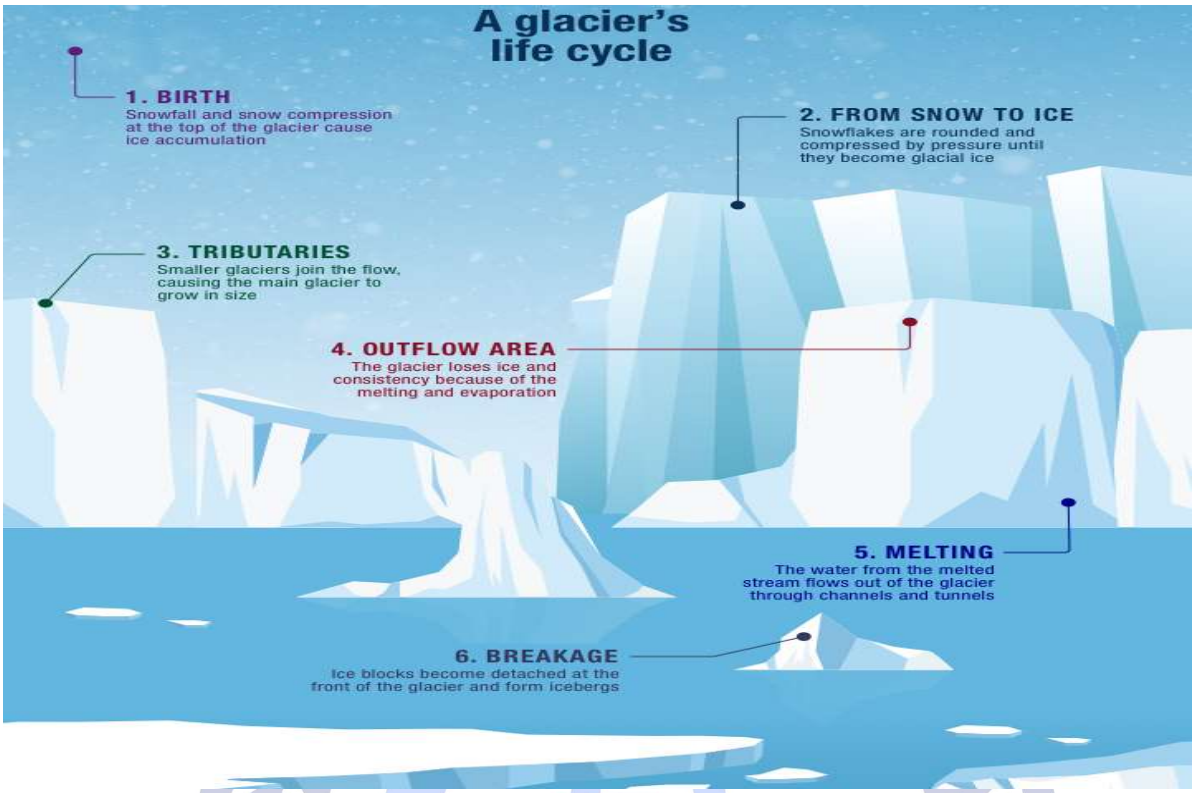
STATS:

- Presently, **10 percent of land area on Earth is covered with glacial ice**, including glaciers, ice caps, and the ice sheets of Greenland and Antarctica.
- Glacierized areas cover over **15 million square kilometers** (5.8 million square miles).
- During the maximum point of the last ice age, which ended about 12,000 years ago, **glaciers covered about 32 percent of the total land area.**

- Glaciers and ice caps store about **68.7 percent of the world's fresh water**, according to the US Geological Survey.
- Together, the Antarctic and Greenland Ice Sheets contain over 99 percent of the freshwater ice on Earth. The amount of fresh water stored in both the Antarctic and Greenland Ice Sheets totals over 68 percent of all the fresh water on Earth.

HUMBOLDT GLACIER

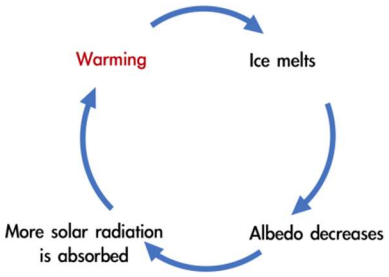
- Venezuela became the **first country in modern history to lose all its glaciers in 2024**, with the **Humboldt glacier being reclassified as an ice field**.
- The International Cryosphere Climate Initiative (ICCI) has indeed reported that the Humboldt or **La Corona Glacier** in the Andes has become **too small to be qualified as a glacier.**
- This reclassification is due to the glacier shrinking to **less than two hectares**, which falls below the commonly accepted **threshold of 10 hectares** necessary for an ice mass to be considered a glacier.
- Venezuela was once home to **six glaciers**, all situated at approximately 5,000 meters above sea level in the **Andes Mountains**.
- By 2011, **five of these glaciers had disappeared**. Scientists initially predicted that the Humboldt Glacier would persist for another decade. However, it **melted more rapidly than anticipated** and has now reduced to less than 2 hectares.
- Much like the Humboldt Glacier, other **glaciers around the world are shrinking and disappearing faster than researchers anticipated.**



REASONS FOR MELTING OF GLACIERS

- **Global Warming:**
  - The primary cause of glacier melting is global warming, driven by increased greenhouse gas emissions from human activities like burning fossil fuels.
  - For instance, according to a 2023 study published in the journal Science, **two-thirds of the world's glaciers are projected to melt out of existence by 2100** if current climate change trends continue.
- **El Niño Phenomenon and Regional Temperature Increases:**
  - Specific regions, like the Andes, have experienced higher rates of temperature increase, contributing to accelerated glacier melting.
  - For instance, **El Niño**, an abnormal warming of surface waters in the equatorial Pacific Ocean, **leads to higher temperatures that accelerate glacier melting**.
  - The **2023 El Niño event caused temperature anomalies of +3°C to +4°C above the 1991-2020 average** in the Andean region of Venezuela, contributing to the rapid melting of the Humboldt glacier.

- **Loss of Albedo Effect:**
  - The albedo effect refers to the reflectivity of a surface. Ice and snow have high albedo, meaning they reflect most sunlight. As glaciers melt, they **expose darker surfaces that absorb more heat, further accelerating melting.**



  - **For instance,** in Greenland, the ice sheet's reflectivity has decreased due to surface melting and increased soot deposition, leading to more heat absorption.
- **Black Carbon Deposition:**
  - Black carbon, a component of soot, can settle on glaciers and ice fields, reducing their albedo and causing them to absorb more heat.
  - For instance, studies have shown that **black carbon from fossil fuel combustion and biomass burning is deposited on glaciers in the Himalayas**, contributing to their accelerated melting.
- **Atmospheric Changes:**
  - Changes in atmospheric circulation patterns can lead to increased temperatures and altered precipitation patterns, impacting glacier mass balance.
  - For instance, researchers found that **shifts in the jet stream have led to warmer temperatures in regions like the Alps**, accelerating glacier retreat.
- **Local Human Activities:**
  - Local activities such as **deforestation, mining, and construction** can contribute to regional warming and physical disruption of glaciers.
  - Deforestation in mountainous areas can reduce moisture levels and increase temperatures, leading to faster glacier melt. For instance, in the **Peruvian Andes, mining activities have been linked to localized glacier retreat** due to land disturbance and pollution.

- **Long-Term Climate Trends:**
    - Historical climate variations also play a role. Periods of natural warming and cooling have been observed over millennia, but the current rate of change is unprecedented.
    - As per a 2021 IPCC report, the **current rate of temperature increase is much higher than natural historical variations**, primarily due to human activities.

IMPACTS OF GLACIER LOSS

- **Freshwater Availability:**
    - Glaciers are vital sources of freshwater, particularly during dry periods, supporting drinking water, agriculture, and hydropower. For instance, in the **Andes**, **glacier retreat is causing water shortages and affecting hydroelectric power generation**, impacting millions in the Amazon basin (source: UNEP). Also, in India, the **Himalayan glaciers** support rivers like the **Ganges and Brahmaputra**, which are crucial for hundreds of millions of people.
- **Ecosystem Disruption:**
    - Glacial melt water helps **regulate downstream water temperatures**, which is critical for many cold-water aquatic species. The loss of glaciers disrupts these ecosystems, threatening species that rely on cold water and **affecting the entire food web**.
- **Sea Level Rise:**
    - Melting glaciers significantly contribute to global sea level rise. **Greenland** has lost over **1,000 gigatonnes of ice** since 1985, significantly contributing to rising sea levels and posing risks to coastal communities global. In India, rising sea levels threaten densely populated coastal regions, including cities like Mumbai and Kolkata, increasing the risk of flooding and displacement. **According to WWF**, the **Greenland ice sheet** is currently **disappearing four times faster than in 2003 and contributes 20% of current sea level rise**. If all the ice on Greenland melted, it would raise global sea levels by 20 feet (WWF).
- **Climate Feedback Loops:**
    - The reduction in glacier cover **decreases the Earth's albedo effect**, which reflects solar energy back into space. Less ice leads to **more heat absorption, further**

accelerating global warming and ice melt in a feedback loop that exacerbates climate change.

- **Cultural and Economic Impacts:**
    - In regions like Venezuela, glaciers are **integral to local culture and tourism.** Their loss disrupts traditional practices and economic activities. Similarly, in India, the **Himalayas hold cultural and spiritual significance** for local communities and pilgrims. The retreat of glaciers affects tourism, agriculture, and traditional ways of life.
- **Hydrological Changes:**
    - The retreat of glaciers significantly affects the timing and quantity of water flow in rivers. In the Indian Himalayas, for instance, glacier melt is a critical factor for river basins that are fed by the monsoon. During the non-monsoon season, the **melt water from glaciers helps maintain river flow, making these rivers perennial.**
- **Global Climate Indicators:**
    - The state of the world's glaciers is a critical indicator of climate change. Record losses in regions like the European Alps highlight the accelerating impacts of global warming.
- **Changes in Weather Patterns:**
    - According to the WWF, the **Arctic is warming twice as fast as the rest of the Earth**, with sea ice declining by over 10% every decade. Melting ice reveals darker ocean patches, **reducing the cooling effect and increasing air temperatures**. This disrupts ocean circulation and has been linked to the polar vortex appearing more frequently outside the Arctic, impacting Gulf of Maine fisheries and causing more **destructive global storms and hurricanes.**

WAY FORWARD:

1. **Curbing Climate Change:** The most critical step in addressing glacier melt is to tackle the root cause: climate change. This requires **reducing global CO2 emissions**. **Key actions include** transitioning to renewable energy (wind, solar, hydroelectric), implementing energy-efficient technologies in industries, promoting sustainable agriculture and forestry, and enhancing public transportation and electric vehicle use. **International**

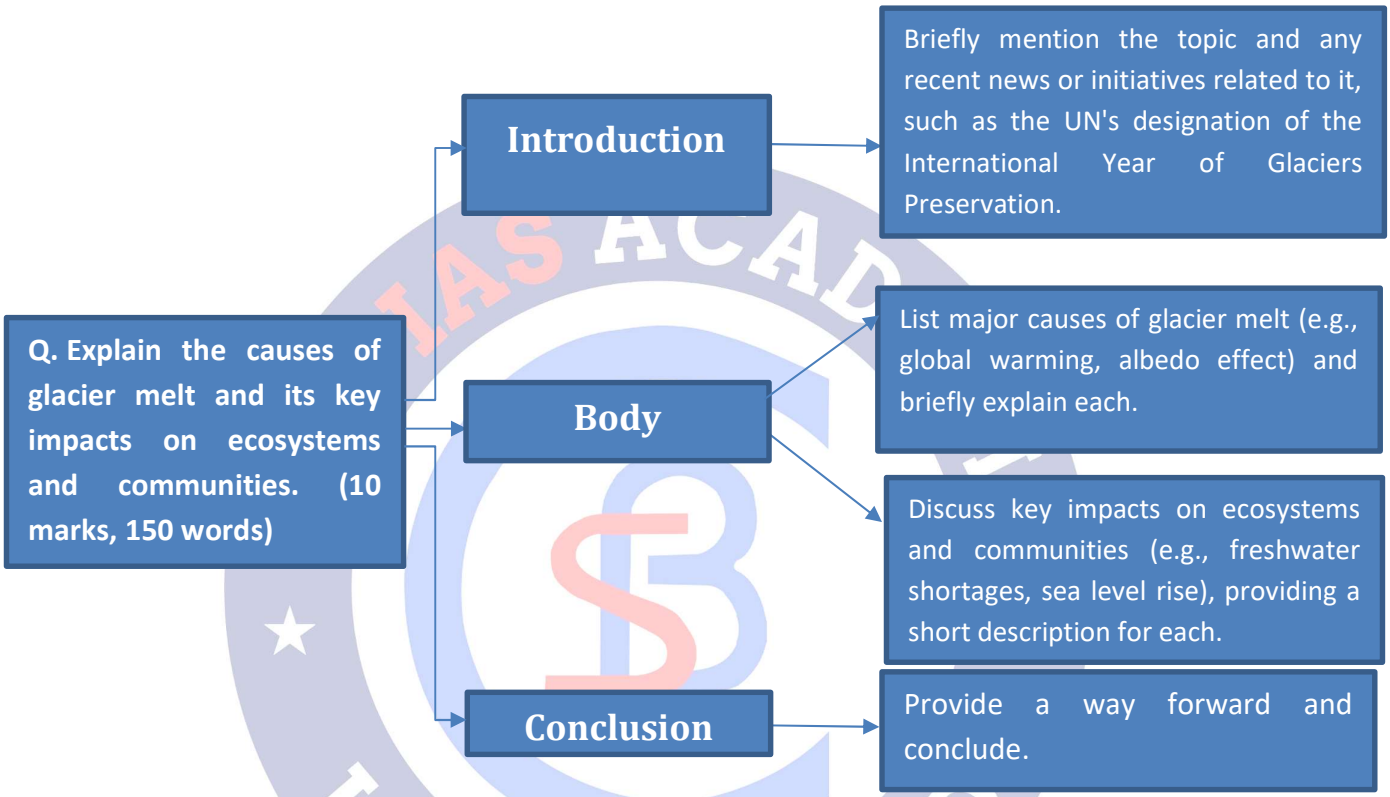
cooperation and full implementation of agreements like **the Paris Agreement are essential.**

2. **Engineering Solutions:** Innovative engineering solutions can help slow down glacier erosion and potentially restore some ice:
    - **Building Dams**: Propose constructing dams like the **100-meter-long one in front of Greenland's Jakobshavn glacier** to stabilize it.
    - **Artificial Icebergs**: Create hexagonal ice blocks from desalinated water to form large ice masses, as suggested by the "**Refreeze the Arctic" project.**
    - **Manufacturing More Ice**: Use **wind power to pump and spread ice from below glaciers to increase thickness**, a method proposed by the University of Arizona.
3. **Enhancing Albedo Effect**
    - **Reducing Black Carbon Deposition**: Implement stricter regulations on fossil fuel combustion and promote cleaner technologies to decrease soot on glaciers.
    - **Protecting Snow Cover**: Preserve snow cover through conservation efforts and controlled land use practices to maintain high albedo levels.
4. **Local and Regional Measures**
    - **Forestation and Reforestation**: Plant trees in mountainous regions to regulate local temperatures and moisture, slowing glacier retreat.
    - **Sustainable Development Practices**: Limit mining, construction, and deforestation in glacier-fed regions to minimize disruption and pollution.
    - **Community Engagement**: Educate and involve local communities in conservation efforts to enhance regional measures' effectiveness.
5. **Monitoring and Research**
    - **Satellite Monitoring**: Use satellite technology to monitor glacier changes in real-time for timely interventions.
    - **Climate Modeling**: Advance climate models to predict future scenarios and develop proactive measures.
    - **Interdisciplinary Research**: Encourage research involving glaciologists, climatologists, engineers, and social scientists for holistic and innovative solutions.

PRACTICE QUESTION

Q. Explain the causes of glacier melt and its key impacts on ecosystems and communities. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The rapid melting of glaciers is a pressing issue highlighted by the United Nations' designation of **2025 as the International Year of Glaciers' Preservation.** This initiative, as reported by the World Meteorological Organisation (WMO) and UNESCO, aims to raise awareness and drive action against the adverse impacts of glacier retreat on global climate systems and hydrological cycles.

Causes of Glacier Melt

1. **Global Warming:** Predominantly driven by increased greenhouse gas emissions from activities such as fossil fuel burning, global warming remains the chief cause of glacier melt. Predictions suggest a grim future where two-thirds of the glaciers could vanish by 2100 if current trends are not reversed.

2. **Regional Climate Anomalies:** Phenomena like El Niño significantly raise regional temperatures, particularly in sensitive areas like the Andes, hastening glacier retreat. The 2023 El Niño event, for example, resulted in temperature anomalies that exacerbated glacier melt in Venezuela.

3. **Albedo Effect Reduction:** The retreat of glaciers exposes darker underlying surfaces that absorb more sunlight, leading to a decrease in the albedo effect. This process self-accelerates glacier melting, particularly noted in Greenland where surface darkening has intensified in recent years.

4. **Black Carbon Deposition:** Soot from fossil fuels and biomass burning, when deposited on glaciers, reduces their reflectivity and hastens melting. This is increasingly observed in the Himalayas, where black carbon from regional industrial activities accumulates.

5. **Atmospheric Changes:** Shifts in atmospheric circulation patterns, such as changes in the jet stream, have led to regional temperature increases. These shifts contribute to accelerated glacier melting, particularly evident in European regions like the Alps.

Impacts on Ecosystems and Communities

1. **Freshwater Shortages:** As glaciers retreat, the reduction in meltwater affects the availability of freshwater for drinking, agriculture, and energy production, leading to crises in regions like the Andes and the Himalayas.

2. **Ecosystem Disruptions:** The loss of glacial meltwater disrupts aquatic ecosystems, endangering species that rely on cold-water habitats and affecting biodiversity across these ecosystems.

3. **Sea Level Rise:** The contribution of melting glaciers to global sea level rise is significant, with areas like Greenland witnessing unprecedented ice loss, which poses a threat to coastal and low-lying communities worldwide.

4. **Socio-economic Effects:** In regions like Venezuela and India, glaciers hold cultural and economic importance. Their disappearance affects tourism, agriculture, and local heritage, disrupting lives and livelihoods.

5. **Hydrological Changes:** The timing and quantity of river flows are significantly altered by glacier retreat. This not only affects water availability throughout the year but also impacts hydroelectric power generation, crucial for many developing regions.

Way Forward

- **Reduce Carbon Emissions:** Implement policies to lower greenhouse gases, focusing on clean energy solutions like wind, solar, and hydroelectric power.

- **Enhance International Cooperation:** Strengthen global agreements such as the Paris Agreement to ensure collective action against climate change.

- **Promote Sustainable Practices:** Encourage sustainable agriculture, forestry, and urban planning to minimize environmental impacts.
- **Innovative Engineering Solutions:** Develop and deploy engineering projects like artificial icebergs or glacier blankets to slow glacier melt.
- **Research and Monitoring:** Increase funding for glacier and climate research to monitor changes and formulate predictive models.
- **Public Awareness and Education:** Boost global awareness about the impacts of glacier melt through education and community engagement.

Confronting glacier melt demands a robust and multifaceted approach, combining scientific innovation, policy reform, and global cooperation. By addressing the root causes of climate change and enhancing our resilience to its impacts, we can safeguard vital water resources, preserve biodiversity, and protect global communities from the escalating threats posed by glacier retreat.

GENERAL STUDIES-II

4. INDIA'S FOREIGN POLICY IN 2024

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations >> India and the global geopolitics

REFERENCE NEWS:

In a year where **diplomacy danced on a tightrope** and every handshake bore the weight of history, India navigated **complex diplomatic waters** amidst significant regional tensions. In 2024, India faced intense diplomatic challenges amidst regional and international incidents. From strained relations with Canada and Bangladesh to resolving the border dispute with China, India's diplomatic efforts were rigorously tested.

GLOBAL INCIDENTS OF 2024:

- **Climate Change**: 2024 was recorded as the hottest year to date, with extreme weather events such as floods in China and Europe, and prolonged droughts in Africa and South America causing Amazon to dry up, underscoring the accelerating pace of global warming.
    - The level of carbon dioxide in the atmosphere continue to grow, and 2024 will go down as the hottest year on record. For the first time, the average global temperature was 1.5 degree than during pre-industrial times.
    - COP 29 the annual international conference on climate, made modest progress on helping developing countries to finance emissions reductions and climate adaptation through a 300 billion USD per year contribution to developing countries by 2035, but not much else.
    - Climate change started impacting global geopolitics as seen in the issue of Panama Canal crisis and redrawing national boundaries along Alps.
- **Civil Wars and Regional Conflicts**: Conflicts persisted in regions like Ukraine, Palestine, Sudan, and Yemen, contributing to global instability. Russia continues its wrath on Ukraine and Ukraine responds with Dragon drones and many more.
    - West Asia is completely immersed in anti-humanitarian activities killing thousands of civilians, stranding other thousands homeless. The death toll now exceeds 45000, and northern Gaza is on the verge of famine.
- **The Rise of the Axis of Autocracies:** The return of geopolitical competition is evident in the growing cooperation between China, Russia, Iran, and North Korea. Their collaboration has been called the axis of autocracies, the axis of upheaval, and the quartet of chaos, among other names.

- Iran has sold Russia thousands of drones, North Korea has provided Russia with millions of artillery shells, and China has helped rebuild Russia's defence industrial base.
- This summer Putin visited Pyongyang—his first visit in twenty-four years—to sign a comprehensive strategic partnership treaty.
- North Korea is now sending troops to fight against Ukraine. China and Russia have increased their joint military exercises, which included flying bombers into Alaska's Air Defence Identification Zone.
- The four countries have conflicting interests and no shared vision of the world they hope to create. But they do agree on one thing: they want to diminish U.S. power in world affairs.

- **Western World Dynamics**: The inauguration of Donald Trump as U.S. President in January 2025 signalled a shift towards "America First" policies, impacting international relations and trade dynamics.
- **Global South**: BRICS increased strength and voicing de-dollarisation and the Voice of Global South Summit, an **extension of India's philosophy of Vasudhaiva Kutumbakam,** or "One Earth, One Family, One Future" **to the international arena, Global South** is emerging to the geopolitical forefront with their inherent resources of demography, size and mineral resources.
- **India's Neighbourhood**: Regional tensions and internal conflicts in neighbouring countries required India's attention to ensure regional stability and security.
    - Rohingya crisis is still on with the new Bangladesh turmoil affects eastern borders.
    - The recent extradition request of Sheikh Hasina from Bangladesh has erupted a silence from India.
    - Sri Lanka and Pakistan elections and its significance on India and India's successful talk over India-China borders with China also played its role in 2024.
- **Artificial Intelligence (AI)**: The rapid advancement of AI technologies raised geopolitical considerations, with nations striving for leadership in AI development and ethical governance.
    - Global Digital Combat, UN Convention against Cybercrime are all developments in relation to technology pace.
    - According to McKinsey Global Institute, AI adoption contributed approximately 1.2 trillion USD to global GDP in 2024.
- **Space Technology**:
    - Japan landed a SLIM (Smart Lander for Investigating the Moon) on a lunar crater and transmitted data back to earth for three months.
    - China sent a mission that brought back soil samples from the far side of the moon.
    - NASA's Perseverance rover found possible evidence of microbial life on Mars.

- A joint EU-Japan mission photographed the south pole of Mercury.
- SpaceX demonstrated a new technology Mechazilla for capturing returning booster rockets with "chopstick arms." Boeing's Starliner project delivered two astronauts to the International Space Station.
- Space is also home to renewed geopolitical competition. U.S. officials accused Russia of placing a nuclear space-based anti-satellite weapon in space. China, meanwhile, greatly expanded the number of military satellites it has in space.

- **Economy**: The global economy faced uncertainties due to geopolitical tensions, trade dynamics, and the impacts of climate change, influencing economic policies worldwide.
  - **Wars** around the globe impacted fossil fuel prices as Russia is a huge player in oil market.
  - Supply chain disruptions due to China shock and countries now started materialising alternate supply chains to reduce over reliance on China and this led to investments in Centra Asia, Africa etc.
  - US Economy strengthened with Trump getting back into White House.

POSITIVE ESCALATIONS FAVOURABLE TO INDIA IN 2024:

- **Breakthrough in India-China Relations:** After years of tension post-2020, the **Modi-Xi Jinping meeting at Kazan** during the BRICS Summit marked a turning point in India-China relations. A significant step was made toward disengagement at the Line of Actual Control (LAC).
- **Strengthened Ties with France:** French President Emmanuel Macron's visit as the Republic Day chief guest underscored India-France defence and maritime cooperation. Agreements on joint ventures in energy and space technology were finalized.
- **Trade Milestones with Europe:** Conclusion of the **India-European Free Trade Association agreement**, marking India's first major FTA with Europe. Enhanced India's trade potential with European markets, setting a template for future agreements with other nations like the UK and EU.
- **Regional Diplomacy in South Asia:** Improved relations with neighbours such as multiple visits by Bhutan's King and diplomatic visits from Sri Lankan President Anura Kumara Dissanayake and Maldives President and also External Affairs Minister's visit to Islamabad for the **SCO summit**, marking the first such visit in nearly a decade.
- **Multilateral Engagement:** India balanced its position during major global conflicts. India advocated peace in the **Russia-Ukraine war** and the **Israel-Gaza conflict**, gaining recognition as a potential mediator. Strengthened partnerships under the **BRICS**, **IMEC (India-Middle East Europe-Economic Corridor)**, and **I2U2 (India, Israel, UAE, U.S.)** frameworks.

- **Decline in Consumption Inequality through Economic Diplomacy**: The outcomes of the **Household Consumption Expenditure Survey 2023-24**, showing reduced inequality, highlighted the impact of India's social welfare programs, enhancing India's global economic profile.
- **Emerging Strategic Partnerships**: Strengthened defence cooperation with **France, the U.S., and West Asian nations**. Leveraged technology partnerships under initiatives like the **Initiative on Critical and Emerging Technology (iCET)** with the U.S.
- **Diplomatic Momentum**: Visits by global leaders, including **French President** and active participation in BRICS and SCO summits along with Prime Minister's high-profile visits to Russia and Ukraine showcased India's growing diplomatic heft.
- **Space and Technology Achievements**: Enhanced cooperation with France and the U.S. in space exploration and satellite technology. Progress in ISRO's ambitious missions like Gaganyaan, SpaDeX etc strengthening India's leadership in the global space race.
- **Favourable Political Developments**: Improved U.S.-India ties with the election of President Donald Trump, whose pro-India administration created opportunities for enhanced collaboration. Strengthened Quad partnership and avenues for economic and strategic cooperation.

SETBACKS TO INDIA IN 2024:

- **Strained Relations with Bangladesh**: The ousting of Bangladesh Prime Minister, a long-standing ally, in August 2024, led to strained ties. A sharp rise in attacks on Hindu minorities further complicated the relationship. India's influence in Bangladesh weakened, with increasing concerns about China and other regional players filling the vacuum.
- **Deterioration of Ties with Canada**: Allegations by Canadian authorities that Indian officials were involved in the killing of Khalistani activist Hardeep Singh Nijjar. Further complications arose with the naming of Indian Home Minister in the alleged conspiracy. Diplomatic ties between India and Canada reached a historic low. Trade, diaspora relations, and collaboration on global platforms were severely impacted.
- **Challenges with the United States**: The U.S. Department of Justice filed indictments against the Adani group and an Indian official for alleged involvement in a separate assassination plot (Pannun case). The U.S.'s involvement in South Asian affairs, particularly in Bangladesh, complicated India's diplomatic efforts.
- **Challenges in Multilateral Engagement:** The IMEC (India-Middle East-Europe Economic Corridor) and I2U2 (India, Israel, UAE, and U.S.) initiatives faced stagnation due to geopolitical conflicts in the Middle East. India's balancing act during the Israel-Gaza conflict drew criticism for perceived ambiguity.

- **Rising Global Criticism on Domestic Issues:** Global criticism over India's human rights record, including issues related to freedom of speech, press restrictions, and communal tensions. Tarnished India's image as the world's largest democracy. Provided ammunition to critics in countries like Canada and sections of the U.S.
- **Stalled Progress in Technology and Defence Partnerships**: While strategic partnerships were initiated, tangible outcomes under initiatives like the Initiative on Critical and Emerging Technology (iCET) were limited. Delayed advancements in joint technology development, particularly in AI and semiconductors.
- **Economic Vulnerabilities:** A precariously close 86 mark of exchange rate, sustained outflows of FPIs from securities market, overstretched stock valuations, demotivating corporate performances, China's economic stimulus, Trump factor strengthening dollar, record trade deficits and import bills, uncertainty around H1B visa regime, imported inflation and the over reliance on China for critical minerals are economic constraints for India.

HOW INDIA CAN NAVIGATE ITS FOREIGN POLICY IN 2025?

Strengthening Bilateral Ties with Major Powers

- **United States**: The election of Donald Trump, a pro-India leader, provides a chance to deepen ties. Prioritize high-level engagements such as the **Quad Summit** and Modi-Trump meeting. Advance cooperation under the **Initiative on Critical and Emerging Technology (iCET)** to strengthen technology and defence ties.
- **Russia**: Vladimir Putin's visit to Delhi, his first since the Ukraine war, offers an opportunity to stabilize ties. Balance relations with Russia by advancing energy and defence collaborations. Mediate peace talks for the Russia-Ukraine conflict, enhancing India's global image as a peace broker.

Addressing Challenges in the Neighbourhood

- **Bangladesh**: Engage with the new leadership to safeguard India's strategic connectivity projects. Use multilateral platforms like SAARC and BIMSTEC to re-establish trust.
- **Pakistan**: The **SCO platform** offers a diplomatic channel. Explore confidence-building measures to address security concerns. Focus on counterterrorism cooperation while maintaining firm positions on cross-border issues.
- **Other Neighbours**: Counter China's influence in Nepal and the Maldives by promoting infrastructure and development projects. Strengthen ties with Bhutan and Sri Lanka through continued economic and security cooperation.

Balancing West Asian Dynamics: Pursue bilateral economic cooperation with Iran, focusing on the **Chabahar port project**. Maintain neutrality on the Israel-Palestine conflict while emphasizing the need for peace.

Advancing Trade Agreements: Use the **India-European Free Trade Association agreement** as a template to fast-track pending deals. Prioritize agreements that enhance market access for Indian exports.

Championing Multilateral Engagement: Continue advocating for peace in global conflicts like Ukraine and Gaza to strengthen India's image as a responsible global leader. Leverage platforms like the G20, BRICS, and SCO to shape global policies on technology, climate, and economic resilience.

Enhancing Regional Connectivity: Ensure progress on projects like the **India-Middle East-Europe Economic Corridor (IMEC)**. Work with West Asian and European partners to operationalize infrastructure projects that enhance trade routes. Strengthen connectivity initiatives within South Asia to counter China's Belt and Road Initiative.

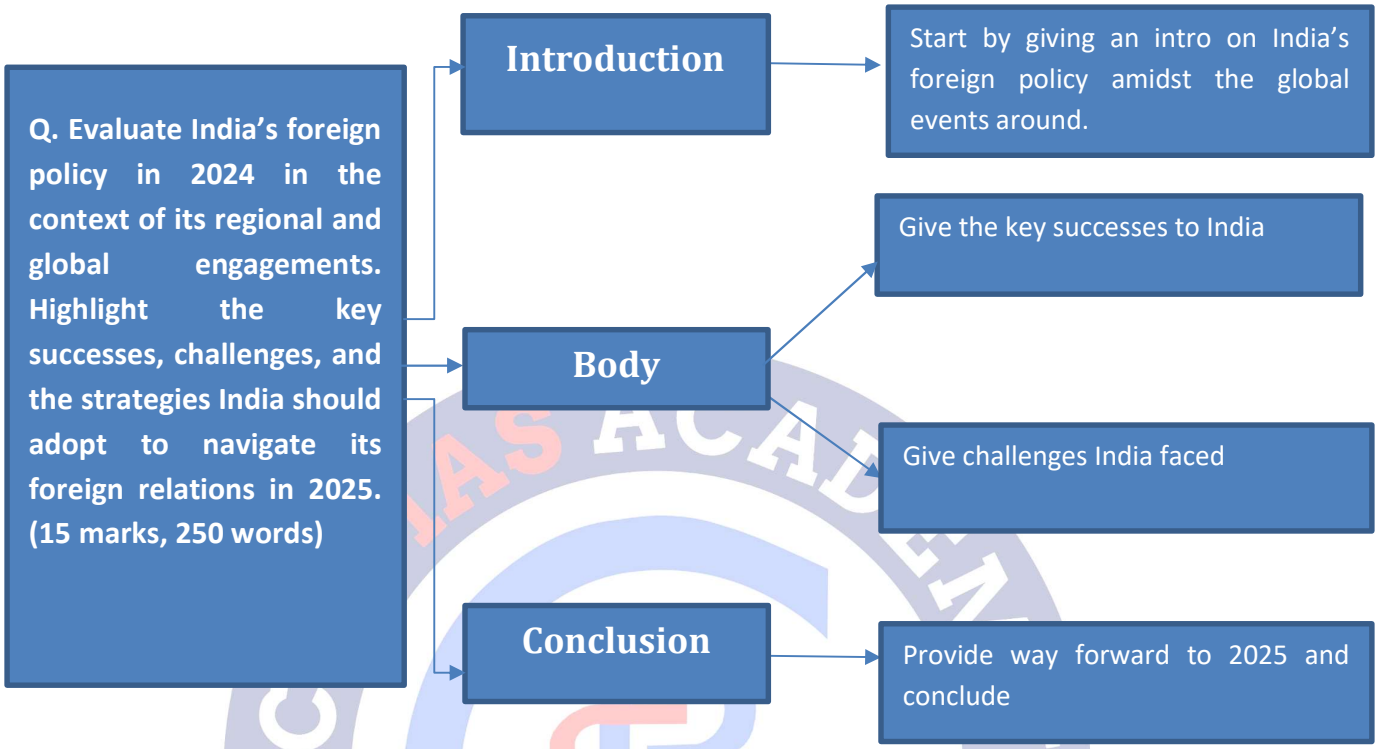
Leveraging Soft Power: Use cultural diplomacy and people-to-people ties to strengthen global goodwill. Promote Indian culture, yoga, and traditional medicine globally. Use platforms like the **Indian diaspora** to build deeper connections in countries like the U.S. and Canada.

Climate Diplomacy: Increasing global pressure for climate commitments. Lead initiatives for renewable energy under **International Solar Alliance**. Advocate for climate financing and equitable burden-sharing for developing countries.

PRACTICE QUESTION

Q. Evaluate India's foreign policy in 2024 in the context of its regional and global engagements. Highlight the key successes, challenges, and the strategies India should adopt to navigate its foreign relations in 2025. (15 marks, 250 words)

APPROACH



MODEL ANSWER

India's foreign policy in 2024 operated in a complex geopolitical environment, navigating regional conflicts, strained bilateral ties, and global power shifts. The year marked significant achievements in regional diplomacy and multilateral engagements but also posed challenges due to tensions in its neighbourhood and with key Western allies.

KEY SUCCESSES IN 2024

1. **Breakthrough in India-China Relations**: Modi-Xi Jinping meeting at Kazan (BRICS Summit) led to progress in **Line of Actual Control (LAC)** disengagement. Stabilized border tensions and laid the groundwork for improving bilateral ties.

2. **Strengthened Ties with France**: French President Macron's visit reinforced defence, energy, and maritime cooperation. Joint ventures in space technology and renewable energy enhanced India's strategic autonomy.

3. **Trade and Economic Achievements**: Conclusion of the **India-European Free Trade Association (IEFTA)** marked India's first major FTA with Europe. Strengthened trade ties with European markets and set a template for pending FTAs with the UK and Australia.

4. **Regional Diplomacy in South Asia**: Improved relations with Bhutan, Sri Lanka, and the Maldives. External Affairs Minister Jaishankar's visit to Islamabad for the SCO Summit marked a diplomatic milestone.

5. **Multilateral Engagements**: Advocated peace in the **Russia-Ukraine war** and the **Israel-Gaza conflict**, gaining recognition as a potential mediator. Strengthened partnerships under BRICS and IMEC, enhancing India's leadership in multilateral forums.

6. **Advancements in Technology and Space**: Strengthened partnerships with France and the U.S. in space exploration and satellite technology. Progress in ISRO's Gaganyaan and SpaDeX missions reinforced India's global space leadership.

CHALLENGES FACED IN 2024

1. **Strained Relations with Bangladesh**: The ouster of Sheikh Hasina weakened India's influence, raising concerns about regional instability. Rise in attacks on Hindu minorities further strained ties.

2. **Deterioration of Ties with Canada**: Allegations of Indian involvement in the killing of Khalistani activist Nijjar led to a historic low in diplomatic relations. Affected trade, diaspora relations, and collaboration in multilateral forums.

3. **Challenges with the U.S.**: Allegations against Indian officials and the Adani group created diplomatic tensions. The U.S.'s involvement in South Asian affairs, particularly in Bangladesh, complicated India's efforts to maintain regional stability.

4. **Setbacks in Multilateral Initiatives**: Stagnation in the IMEC and I2U2 frameworks due to geopolitical conflicts in West Asia. Criticism over perceived ambiguity during the **Israel-Gaza conflict** weakened India's position.

5. **Economic Vulnerabilities**: Rising trade deficits, currency depreciation, and supply chain disruptions highlighted India's dependence on imports, especially from China. Global criticism over human rights issues and press freedom tarnished India's democratic image.

STRATEGIES FOR 2025

1. **Strengthening Bilateral Ties**:

    - **United States**: Leverage President Trump's pro-India stance to enhance Quad partnerships and finalize pending trade agreements.

    - **Russia**: Deepen energy and defence ties while mediating peace in the Russia-Ukraine conflict.

2. **Rebuilding Regional Relations**:
    - **Bangladesh**: Engage with the new leadership through multilateral platforms like SAARC and BIMSTEC.
    - **Other Neighbours**: Counter China's influence in Nepal and the Maldives through infrastructure and development projects.
3. **Advancing Multilateral and Trade Agreements**:
    - Use the IEFTA agreement as a blueprint to expedite FTAs with the UK and EU.
    - Strengthen platforms like BRICS and G20 to shape global policies on climate change and technology.
4. **Boosting Soft Power and Cultural Diplomacy**:
    - Promote Indian culture, yoga, and traditional medicine globally.
    - Leverage the Indian diaspora to build deeper connections with Western nations.
5. **Prioritizing Space and Technology**:
    - Expand collaborations under initiatives like the **Initiative on Critical and Emerging Technology (iCET)**.
    - Focus on AI and semiconductor development to reduce technological dependence.
6. **Addressing Economic Vulnerabilities**:
    - Diversify supply chains to reduce reliance on China.
    - Focus on renewable energy and domestic manufacturing to mitigate trade imbalances.

India's foreign policy in 2024 showcased its ability to navigate a turbulent global landscape with significant successes in regional diplomacy and multilateral engagements. However, challenges in its neighbourhood and strained relations with key Western allies underscore the need for strategic recalibration. By leveraging emerging opportunities and addressing vulnerabilities, India can strengthen its position as a global leader in 2025.

5. INDIA AND UNSC

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations >> Multilateral Organisations

REFERENCE NEWS:

On 1 January, 2025, Pakistan joined the United Nations Security Council (UNSC) as a **non-permanent member.** Pakistan, which was elected to the UNSC, will serve a **two-year-term**. Ambassador Munir Akram, Pakistan's top diplomat at the UN, has said that the Pakistani delegation will play an "active and constructive" role in addressing key challenges facing the world. "Our presence will be felt in the Security Council," Ambassador Akram vowed.

UNITED NATIONS SECURITY COUNCIL:

The **United Nations Security Council (UNSC)** is one of the six principal organs of the United Nations (UN). Established in 1945 under the UN Charter, the UNSC plays a pivotal role in preventing conflicts, resolving disputes, and overseeing peacekeeping operations.

- Based in New York, the UNSC is responsible for **maintaining international peace and security among all 193 members of the UN.**
- The UNSC currently comprises **15 members** – five permanent and 10 elected members by the UNGA, which have two-year terms.
- Representation to non-permanent seat is based on regional rotation from 3 seats for Africa, 2 seats for Asia-Pacific, 1 seat for Eastern Europe, 2 seats for Latin America and Caribbean and 2 seats for Western Europe and others Group.
- The United States, the United Kingdom, Russia, China and France are the permanent members of the UNSC – all of whom have the **power of the veto.** Collectively, this group is called the **P5.**
- The presidency of the UNSC rotates monthly among its members in alphabetical order.

Under the **UN Charter**, the UNSC has broad responsibilities, including:

- **Maintaining International Peace and Security**: Investigating disputes or situations that might lead to conflict. Recommending peaceful methods of dispute resolution.
- **Authorizing Military Action**: Deploying peacekeeping missions or sanctioning collective military action under Chapter VII of the UN Charter.

- **Imposing Sanctions**: Economic, trade, or diplomatic sanctions to enforce compliance with UNSC decisions.
- **Appointing Leadership**: Recommending the appointment of the UN Secretary-General. Approving the admission of new UN members.
- **Advising on Legal Matters**: Referring disputes to the **International Court of Justice (ICJ)**.

CONCERNS FOR INDIA AMIDST PAKISTAN'S MEMBERSHIP IN UNSC:

- **Kashmir Issue**: Historically, Pakistan has utilized international platforms to spotlight the Kashmir dispute. With its UNSC membership, there's an increased likelihood of Pakistan attempting to internationalize the Kashmir issue, potentially leading to debates and resolutions unfavourable to India's stance while India insists on bilateral talks under Shimla Agreement. After India's abrogation of Article 370 in 2019, Pakistan pushed for discussions on Jammu and Kashmir (J&K) within the Council.
- **Obstruction of UNSC Reforms**: India has been advocating for reforms in the UNSC, including a bid for permanent membership. Pakistan, along with allies in the Uniting for Consensus (UfC) group, has consistently opposed these reforms. Pakistan's presence in the UNSC may strengthen efforts to delay or block India's aspirations for a permanent seat. Pakistan's current term coincides with talks on UNSC reforms where India aims to secure permanent membership with veto power.
- **Support for Anti-India Resolutions**: Pakistan might collaborate with nations like China to introduce or support resolutions that could be detrimental to India's interests, particularly concerning regional security and counter-terrorism measures. With half of the elected members belonging to OIC, Pakistan's power may grow.
- **Influence on Peacekeeping Operations**: The UNSC oversees UN peacekeeping missions, including those in regions close to India. Pakistan's involvement could affect decisions related to these operations, potentially impacting regional stability.
- **Diplomatic Challenges**: India may face increased diplomatic efforts to counter narratives and initiatives led by Pakistan within the UNSC, necessitating strategic alliances and proactive engagement with other member states. It might align with Russia and China potentially forming a bloc to challenge Western narratives.

Pakistan now holds a seat on the UN's ISIS and Al Qaeda Sanctions Committee, allowing it to influence global security decisions despite lacking veto power.

INDIA'S ROLE IN THE UNITED NATIONS SECURITY COUNCIL (UNSC):

As a founding member of the UN, India has served as a non-permanent member of the UNSC eight times, with its most recent tenure spanning **2021-2022**. Below are key highlights of India's role in the UNSC:

Advocate for Peace and Stability

- **Peacekeeping Operations**: India is the largest troop-contributing country to UN peacekeeping missions, deploying more than 200,000 personnel since the inception of UN peacekeeping. Active participation in missions in **South Sudan**, **Lebanon**, and **the Democratic Republic of Congo**.
- **Promoting Dialogue**: India has consistently advocated for dialogue and diplomacy to resolve conflicts, including in **Afghanistan**, **Ukraine**, and **Syria**.

Counter-Terrorism Leadership

- **UNSC Resolutions**: India played a key role in strengthening the global counter-terrorism framework under **Resolution 1267** (sanctions on terrorist organizations like Al-Qaeda and ISIS). In 2022, India successfully listed **Abdul Rehman Makki**, a senior Lashkar-e-Taiba (LeT) operative, as a global terrorist, overcoming initial resistance from some UNSC members.
- **Advocacy**: India consistently calls for addressing terrorism's root causes and holds countries accountable for sheltering and financing terrorist organizations.

Voice for the Global South

- **Equitable Representation**: India has been a strong proponent of reforms in the UNSC to make it more representative and inclusive, advocating for the inclusion of developing countries, particularly from Africa, Asia, and Latin America.
- **Economic Challenges**: India highlighted debt relief and climate resilience for developing nations, emphasizing Sustainable Development Goals (SDGs).

Regional and Global Stability

- **Kashmir Issue**: India has countered Pakistan's attempts to internationalize the Kashmir issue at the UNSC, emphasizing that it is a bilateral matter under the **Simla Agreement**.

- **Afghanistan**: During the Afghanistan crisis in 2021, India chaired UNSC discussions, advocating for a peaceful resolution and ensuring that Afghan soil is not used for terrorism.

Key Events During India's 2021-22 UNSC Tenure

- **Chairmanship of Key Committees**: Counter-Terrorism Committee (CTC), Taliban Sanctions Committee and Libya Sanctions Committee.
- **Afghanistan Crisis**: Chaired emergency meetings on Afghanistan after the Taliban takeover, focusing on humanitarian aid and regional security.
- **Climate Change and Security**: India emphasized that climate action should consider the principles of equity and Common but Differentiated Responsibilities (CBDR). Opposed linking climate change directly to security threats, advocating for separate frameworks.
- **Ukraine Conflict**: India maintained a balanced position, calling for dialogue and adherence to international law without directly condemning specific parties.

Advocacy for UNSC Reforms

- **India's Aspirations for Permanent Membership**: India, part of the **G4 Group** (with Brazil, Germany, and Japan), advocates for expanding the UNSC with permanent seats for emerging powers. Support from P5 members like France, Russia, and the U.S. strengthens India's case.
- **Demands for Reform**: Transparency in decision-making and greater representation of developing countries in the UNSC.

Focus on Maritime Security

- India chaired a landmark UNSC meeting on **maritime security** in 2021, presided over by Prime Minister Narendra Modi. The focus was on freedom of navigation, counter-piracy operations and peaceful settlement of maritime disputes.

CHALLENGES FACED BY INDIA WITH REGARD TO THE UNSC:

- **Lack of Permanent Membership:** India has long sought permanent membership in the UNSC to reflect its growing global stature, but this aspiration faces resistance. Slow progress in UNSC reforms due to a lack of consensus among P5 nations.
- **Veto Power and P5 Monopoly:** The veto power of P5 nations allows them to block substantive decisions, even those aligned with India's interests. China frequently uses its

veto to block sanctions on Pakistan-based terrorists under UNSC Resolution 1267, such as the delay in designating **Masood Azhar** a global terrorist.

- **Use of UNSC as a Platform for Anti-India Rhetoric:** Adversarial states like **Pakistan** exploit their membership to raise issues targeting India, such as Kashmir. Pakistan persistently brings up the **Kashmir issue** in UNSC discussions, despite limited interest from other members. Pakistan's regular "dossiers" accusing India of supporting terrorism aim to tarnish India's image internationally.
- **Regional and Geopolitical Rivalries:** The growing influence of China in the UNSC and its alliances with Pakistan and other nations often work against India's interests. China's Belt and Road Initiative (BRI), including projects in Pakistan-occupied Kashmir, finds implicit support in the UNSC. Efforts to diplomatically rehabilitate the Taliban, led by Pakistan and backed by China, complicate India's interests in Afghanistan.
- **Structural and Procedural Limitations:** The UNSC's focus on the P5 and its inability to adapt to contemporary global realities limits India's participation in decision-making. India's tenure as a non-permanent member (2021-22) highlighted the lack of influence non-permanent members have in shaping critical decisions.
- **Counter-Terrorism Efforts:** Despite its proactive role, India faces resistance in pushing for stronger counter-terrorism measures. Delay in UNSC designations of terrorists due to procedural vetoes by P5 members like China. Pakistan's attempts to divert attention by introducing narratives of "Islamophobia" during counter-terrorism discussions.
- **Climate Action and Equity:** India's advocacy for equitable climate responsibilities under the principle of **Common but Differentiated Responsibilities (CBDR)** often clashes with developed nations' agendas in the UNSC. India opposed linking climate change directly to security threats, advocating for separate frameworks during its 2021-22 tenure.
- **Misuse of UNSC Mechanisms:** Countries like Pakistan use informal mechanisms like the **Arria Formula** meetings to bypass formal discussions and raise anti-India issues. Pakistan raising bilateral matters such as the **Indus Waters Treaty**, despite it being outside the UNSC's jurisdiction.
- **Limited Influence Over P5 Dynamics:** India's ability to influence decisions in the UNSC is limited compared to P5 nations. The **Russia-Ukraine war** exposed India's delicate balancing act between Russia and the West, limiting its role as a mediator.
- **Global South Advocacy:** India's efforts to highlight issues of the Global South, like debt relief and equitable development, often take a backseat to great-power politics in the UNSC.

WAY FORWARD:

- **Reforming the UNSC for Inclusivity**: Increase permanent and non-permanent seats to reflect geopolitical realities. Strengthen the **G4 coalition** (India, Brazil, Germany, and

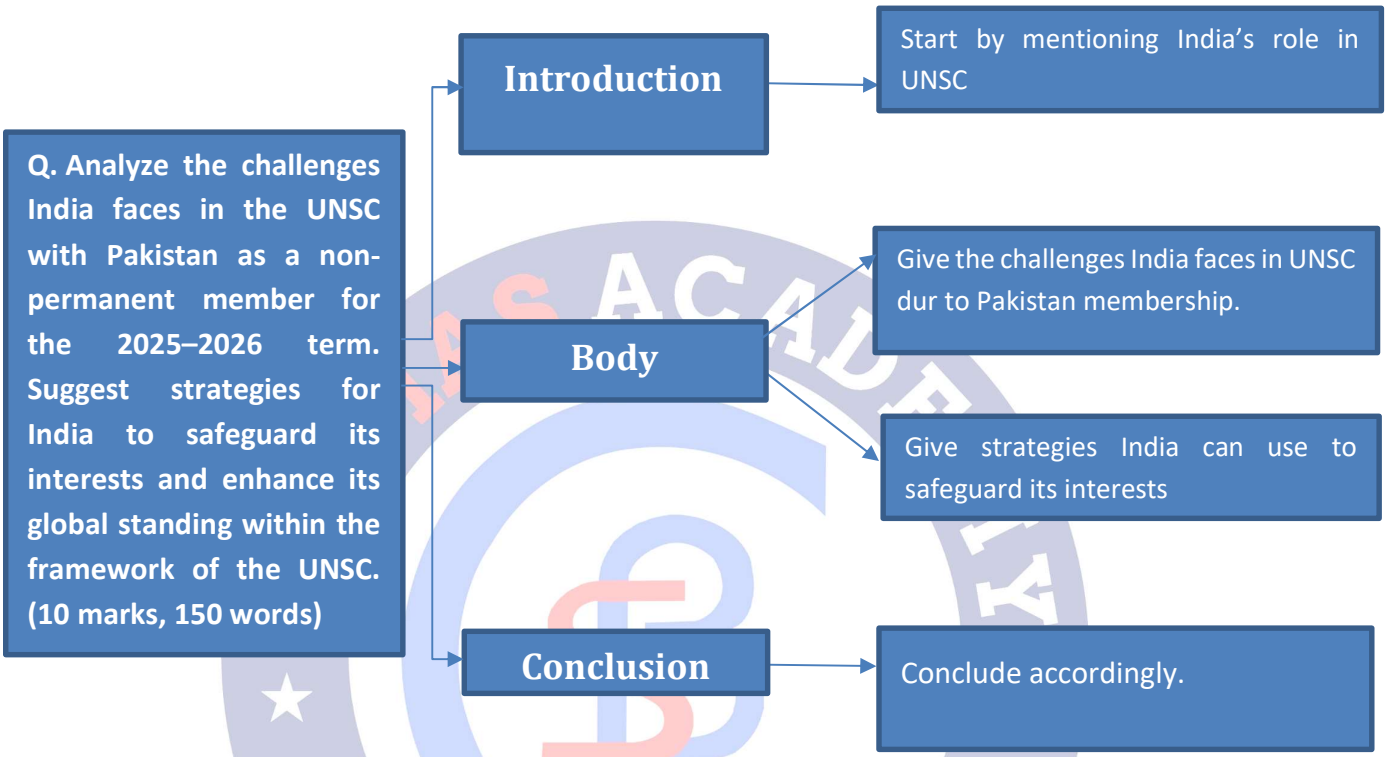
Japan) to push for permanent membership. Advocate for the inclusion of African nations to ensure regional representation.

- **Veto Power Reform**: Limit or democratize the use of veto power to prevent deadlocks. Support proposals for "veto restraint" in cases involving humanitarian crises and mass atrocities. Advocate for equal rights for new permanent members in veto privileges.
- **Greater Role for Developing Nations**: Address the concerns of the Global South by enhancing their representation. Promote the interests of developing nations in climate action, economic recovery, and debt relief through the UNSC.
- **Strengthening India's Global Role:** India should act as a bridge between developed and developing nations through leading multilateral coalitions. Promote initiatives like the **International Solar Alliance (ISA)** to address energy and climate challenges. Utilize forums like BRICS and G20 to build consensus on critical global issues.
- **Economic and Strategic Partnerships**: Expand bilateral and multilateral partnerships to sustain the multipolar order. Strengthen ties with the **European Union**, **ASEAN**, **Africa**, and Latin America. Deepen Quad and Indo-Pacific Economic Framework (IPEF) partnerships to counter unilateral global power concentrations.
- **Advancing Global Governance:** Advocate for reforms in global institutions like the WTO, IMF, and World Bank to align them with the needs of emerging economies.
- **Technology Diplomacy**: Lead efforts to create global norms for emerging technologies like AI and space governance. Propose a framework under the UNSC for responsible use of AI in warfare and cybersecurity.
- **Promoting Sustainable Development**: Position India as a global leader in sustainable development. Champion the principles of **Common but Differentiated Responsibilities (CBDR)** in climate negotiations.
- **Focus on Global Health Security**: Leverage India's pharmaceutical and healthcare expertise to promote global health equity.
- **Building Consensus for UNSC Reforms:** Actively engage with all P5 members and neutral nations to build support for reforms. Deepen bilateral ties with France and Russia, which have supported India's bid for permanent membership.
- **Championing Regional Stability**: Lead initiatives for regional integration and economic connectivity in South Asia. Promote SAARC and BIMSTEC initiatives for shared development. Counter China's Belt and Road Initiative (BRI) through sustainable infrastructure projects.

PRACTICE QUESTION

Q. Analyze the challenges India faces in the UNSC with Pakistan as a non-permanent member for the 2025–2026 term. Suggest strategies for India to safeguard its interests and enhance its global standing within the framework of the UNSC. (10 marks, 150 words)

APPROACH



MODEL ANSWER

India, as a founding member of the UN and a key proponent of multilateralism, has consistently played a pivotal role in the UNSC. However, with Pakistan assuming a non-permanent membership for the 2025–2026 term, challenges regarding India's geopolitical and diplomatic interests are likely to intensify.

CHALLENGES FOR INDIA WITH PAKISTAN IN UNSC

1. **Kashmir Issue**: Pakistan has historically leveraged international platforms to spotlight the Kashmir dispute, often pushing for resolutions unfavourable to India. The abrogation of **Article 370 (2019)** intensified these efforts, and Pakistan may attempt to raise the issue in UNSC debates.

2. **Obstruction of UNSC Reforms**: India's aspiration for permanent membership in the UNSC is often countered by Pakistan, supported by the **Uniting for Consensus (UfC)** group. Pakistan's presence in the UNSC could delay or block India's reform proposals.

3. **Support for Anti-India Resolutions**: Pakistan, in collaboration with allies like China and some OIC members, may introduce resolutions against India on issues like human rights or counter-terrorism.

4. **Influence on Peacekeeping Operations**: As a significant contributor to UN peacekeeping, Pakistan may attempt to influence peacekeeping mandates in regions close to India, potentially affecting India's regional security.

5. **Narrative Building Against India**: Pakistan may accuse India of state-sponsored terrorism and present dossiers to tarnish India's image globally. Pakistan's attempts to label Indian Hindus as terrorists in the UNSC were rejected but highlight its narrative strategy.

6. **Challenges to Counter-Terrorism Efforts**: Pakistan's seat on the UNSC's ISIS and Al Qaeda Sanctions Committee may enable it to influence counter-terrorism measures, potentially diverting focus from terrorist organizations it shelters.

STRATEGIES FOR INDIA

1. **Proactive Diplomacy**: Strengthen strategic alliances with P5 members, particularly France, Russia, and the U.S., who have supported India's stance on critical issues. Actively engage with non-permanent members like Denmark and Greece to build coalitions against anti-India rhetoric.

2. **Advancing UNSC Reforms**: Collaborate with the **G4 nations** (India, Brazil, Germany, and Japan) to push for comprehensive UNSC reforms. Advocate for equitable representation for the Global South and African nations.

3. **Countering Anti-India Narratives**: Present credible evidence of Pakistan's history of harboring terrorists, as listed under **UNSC Resolution 1267**. Use India's achievements, such as democratic governance in Jammu and Kashmir, to counter Pakistan's allegations.

4. **Strengthening Counter-Terrorism Frameworks**: Build coalitions within the UNSC to push for stronger designations of terrorist organizations and individuals under sanctions regimes. Leverage India's success in listing **Abdul Rehman Makki** as a global terrorist to strengthen its credibility in counter-terrorism efforts.

5. **Promoting Regional Stability**: Focus on initiatives like **SAARC** and **BIMSTEC** to enhance regional connectivity and economic integration, countering China-Pakistan influence. Advocate for humanitarian aid and conflict resolution in Afghanistan to stabilize South Asia.

6. **Leadership in Global South Advocacy**: Use platforms like the G20 and BRICS to emphasize climate finance, debt relief, and sustainable development goals for developing nations. Strengthen India's role as a bridge between developed and developing countries.

7. **Championing Multilateral Initiatives**: Lead efforts in areas like **maritime security**, **cybersecurity**, and **AI governance** to position India as a responsible global player. Promote initiatives like the **International Solar Alliance (ISA)** to address climate challenges.

India's approach to the UNSC amidst Pakistan's term must combine proactive diplomacy, strategic alliances, and robust advocacy for global peace and security. By addressing challenges and leveraging its leadership in multilateral initiatives, India can not only safeguard its interests but also strengthen its case for a permanent seat in a reformed UNSC, ensuring a more inclusive and equitable global order.

6. DIGITAL DATA PROTECTION RULES, 2025

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Fundamental Rights >> Right to Privacy

REFERENCE NEWS:

After a long wait of sixteen months, the **Ministry of Electronics and Information Technology** on January 3, 2025, unveiled the **draft rules for implementing the Digital Personal Data Protection (DPDP) Act, 2023** —India's first comprehensive data privacy legislation applicable across all sectors of commerce and industry. The government is currently inviting stakeholder feedback on the draft until February 18, 2025, with plans to commence implementation by mid-year.

DIGITAL PERSONAL DATA PROTECTION ACT, 2023:

Processing of personal data which implies collection, storage, usage and sharing, allows understanding preferences of individuals, which may be useful for **customisation, targeted advertising, and developing recommendations.** Processing of personal data may also aid law enforcement. **Unchecked processing may have adverse implications for the privacy of individuals, which has been recognised as a fundamental right.**

Use of personal data was regulated under the **Information Technology (IT) Act, 2000.** In 2017, the central government constituted a Committee of Experts on Data Protection, chaired by **Justice B. N. Srikrishna**, to examine issues relating to data protection in the country. As right to privacy is help up as a fundamental right through Justice KS Puttaswamy judgement(2018), personal data protection became a major discussion since then.

- **Applicability:** The Bill applies to the processing of digital personal data within India where such data is: (i) **collected online**, or (ii) **collected offline and is digitised**. It will also apply to the **processing of personal data outside India if it is for offering goods or services in India**.

- **Consent:** Personal data may be processed only for a lawful purpose **after obtaining the consent of the individual**. A notice to be given before seeking consent should contain details about the **personal data to be collected and the purpose of processing. Consent may be withdrawn at any point in time**. Consent will not be required for 'legitimate uses' including: (i) specified purpose for which data has been provided by an individual voluntarily, (ii) provision of benefit or service by the government, (iii) medical emergency,

and (iv) employment. For individuals below 18 years of age, consent will be provided by the parent or the legal guardian.

- **Rights and duties of data principal:** An individual whose data is being processed (data principal), will have the right to: (i) obtain information about processing, (ii) seek correction and erasure of personal data, (iii) nominate another person to exercise rights in the event of death or incapacity, and (iv) grievance redressal. Data principals will have certain duties. They must not: (i) register a false or frivolous complaint, and (ii) furnish any false particulars or impersonate another person in specified cases. Violation of duties will be punishable with a penalty of up to Rs 10,000.
    - The person whose personal data is being processed. This includes the parents or legal guardians of children, and the legal guardians of people with disabilities.
    - The person or organization that controls how the personal data is handled. This could be a small business, startup, or bank, government or social media platforms.
    - A Significant Data Fiduciary (SDF) is a data fiduciary that handles large amounts of sensitive personal data, or data that could have a significant impact on national security or public interest. The Central Government of India designates data fiduciaries as SDFs
- **Obligations of data fiduciaries:** The entity determining the purpose and means of processing, (data fiduciary), must: (i) make reasonable efforts to ensure the accuracy and completeness of data, (ii) build reasonable security safeguards to prevent a data breach, (iii) inform the Data Protection Board of India and affected persons in the event of a breach, and (iv) erase personal data as soon as the purpose has been met and retention is not necessary for legal purposes (storage limitation). **In case of government entities, storage limitation and the right of the data principal to erasure will not apply.**
- **Transfer of personal data outside India:** The Bill allows transfer of personal data outside India, except to countries restricted by the central government through notification.
- **Exemptions:** Rights of the data principal and obligations of data fiduciaries (except data security) will not apply in specified cases. These include: (i) **prevention and investigation of offences,** and (ii**) enforcement of legal rights or claims**. The central government may, by notification, exempt certain activities from the application of the Bill. These include: (i) **processing by government entities in the interest of the security of the state and public order,** and (ii) **research, archiving, or statistical purposes.**

- **Data Protection Board of India:** The central government will establish the **Data Protection Board of India.** Key functions of the Board include: (i) monitoring compliance and imposing penalties, (ii) directing data fiduciaries to take necessary measures in the event of a data breach, and (iii) hearing grievances made by affected persons. Board members will be appointed for two years and will be eligible for re-appointment. The central government will prescribe details such as the number of members of the Board and the selection process. **Appeals against the decisions of the Board will lie with TDSAT(Telecom Disputes Settlement and Appellate Tribunal).**

- **Penalties:** The schedule to the Bill specifies penalties for various offences such as up to: (i) Rs 200 crore for non-fulfilment of obligations for children, and (ii) Rs 250 crore for failure to take security measures to prevent data breaches. Penalties will be imposed by the Board after conducting an inquiry.

DRAFT DIGITAL DATA PROTECTION RULES, 2025:

The draft **subordinate legislation** in form of Digital Personal Data Protection Rules, 2025 have been drafted in order to provide for necessary details and implementation framework of the Act of 2023.

PROVISIONS IN THE DRAFT DIGITAL PERSONAL DATA PROTECTION (DPDP) RULES, 2025:

- **Rights of Data Principals (Individuals): Consent Management** of individuals with the right to provide or withdraw consent for data processing, be notified in **clear and plain language** about the purpose and nature of data collection and consent notices must be easy to understand and accessible in multiple languages.
- **Data Rights:** Data principals can request correction or erasure of personal data, nominate a representative to exercise their data rights in case of incapacity or death and obtain information on how their data is being processed, ensuring transparency.
- **Obligations of Data Fiduciaries (Entities Handling Data): Clarity in Consent Notices** which is to be concise and user-friendly and should provide itemized descriptions of data collection and processing purposes.
- **Security Obligations:** Fiduciaries must implement safeguards to prevent data breaches and notify users and authorities in case of a breach, although specific timelines are undefined.
- **Age Verification:** For minors under **18 years**, parental consent is mandatory unless exempted for specific industries (e.g., education and healthcare) through ID Tokenisation. The platforms functioning in India must verify every new applicant's age using a "token" that reliably confirms either their age or, in the case of minors, their parent or guardian's age.

- **Cross-Border Data Transfers:** Significant Data Fiduciaries (SDFs) must ensure compliance with localization requirements for sensitive personal data, as per government-notified countries. Data transfer is allowed to countries specified by the government as having adequate safeguards. SDFs face stricter localization mandates, potentially increasing compliance burdens
- **Purpose Limitation:** Data must only be processed for the purpose for which consent was provided.
- **Specific Exemptions:** Certain entities, like **educational institutions**, healthcare providers, and childcare centres, are exempt from verifying parental consent for tracking and behavioural monitoring, provided they adhere to specified safeguards. Subsidies-related data processing is exempt from prior consent requirements.
- **Grievance Redressal:** Entities must provide clear channels for grievances related to data processing and resolve complaints within a specified timeframe, though the draft does not define this duration.
- **Data Protection Board (DPB):** The **DPB** is responsible for handling data breach cases and complaints from individuals and its chairperson and members are appointed by a government-led committee, raising concerns about its independence.
- **Processing Sensitive Data:** Sensitive data, including health and financial information, requires heightened security measures. However, the rules do not define clear standards for the level of protection required.
- **Accountability Mechanisms:** Data fiduciaries must conduct regular audits of data processing activities and maintain logs of data breaches and report them to the DPB and affected individuals.
- **Compliance Deadlines:** Stakeholders, including businesses and organizations, will be given adequate time to comply with the Act and its Rules. The rules emphasize industry-specific accommodations to ease compliance.

ISSUES RELATED TO DATA PROTECTION RULES, 2025:

Executive Overreach and Lack of Transparency

- **Centralized Authority**: The rules grant the Union Government excessive powers over data governance, bypassing the need for an independent regulatory authority. The **Data Protection Board (DPB)** is designed to function under the direct control of the government, with no structural safeguards to ensure independence.
    - The DPB's chairperson is selected by a committee chaired by the Cabinet Secretary, leading to concerns over political interference.
- **Opaque Feedback Mechanism**: Public consultations are conducted in a controlled manner via the MyGov platform, limiting broader participation. Submissions are treated

as fiduciary, restricting public access and counter-comments, resembling a "**corporate consultation**" rather than a democratic one.

- **Absence of Regulatory Oversight**: The Act avoids creating an independent regulatory body, consolidating decision-making power within the government.

Vagueness in Provisions

- **Ambiguous Definitions**: Terms like "clear and plain language" in consent notices lack specific definitions, leaving them open to interpretation. The requirement for "itemized descriptions" of data fails to clarify whether it pertains to broad categories (e.g., financial, health data) or specific data points (e.g., account numbers, metadata).
- **Undefined Standards**: The Rules do not specify timelines for data breach notifications, potentially endangering individuals during critical situations.
- **Exemptions Without Safeguards**: Rule 5 exempts data processing for subsidies from consent requirements, undermining individual autonomy and accountability. This raises concerns for beneficiaries of schemes like Aadhaar-linked subsidies.

Flaws in the Data Protection Board (DPB)

- **Lack of Independence**: The DPB's members are appointed based on recommendations from a government-chaired committee, with no binding obligation for the government to follow these recommendations. Members' service conditions are aligned with central government employees, compromising neutrality.
- **Limited Jurisdiction**: The DPB's powers are restricted to adjudicating breaches, leaving broader data protection issues unaddressed.
- **Accountability Gaps**: The DPB may struggle to act against powerful government entities like UIDAI, especially when complaints involve issues like data record corrections for rations.

Implementation Delays

- **Delayed Rollout**: Despite the passage of the **Digital Personal Data Protection Act, 2023**, the Rules took 16 months to draft and are still in consultation. The prolonged implementation undermines trust in the framework and delays the realization of data protection goals.

- **Instrument of Control**: Critics argue that the Rules advance a policy of "total state control," prioritizing administrative convenience over constitutional objectives. The Act's vague language and discretionary provisions risk creating a "digital leash" for citizens.

- **Excessive Government Powers**: Rule 22 empowers the government to requisition data without clear limitations or safeguards, raising concerns about potential misuse.

COMPARISON: EU'S GDPR VS. INDIA'S DATA PROTECTION REGIME:

The **European Union's General Data Protection Regulation (GDPR)** and **India's Digital Personal Data Protection (DPDP) Act, 2023**, with its **Draft Rules 2025**, represent two different approaches to data protection, reflecting the socio-economic priorities and regulatory philosophies of their regions withdrawing from Brussel's effect.

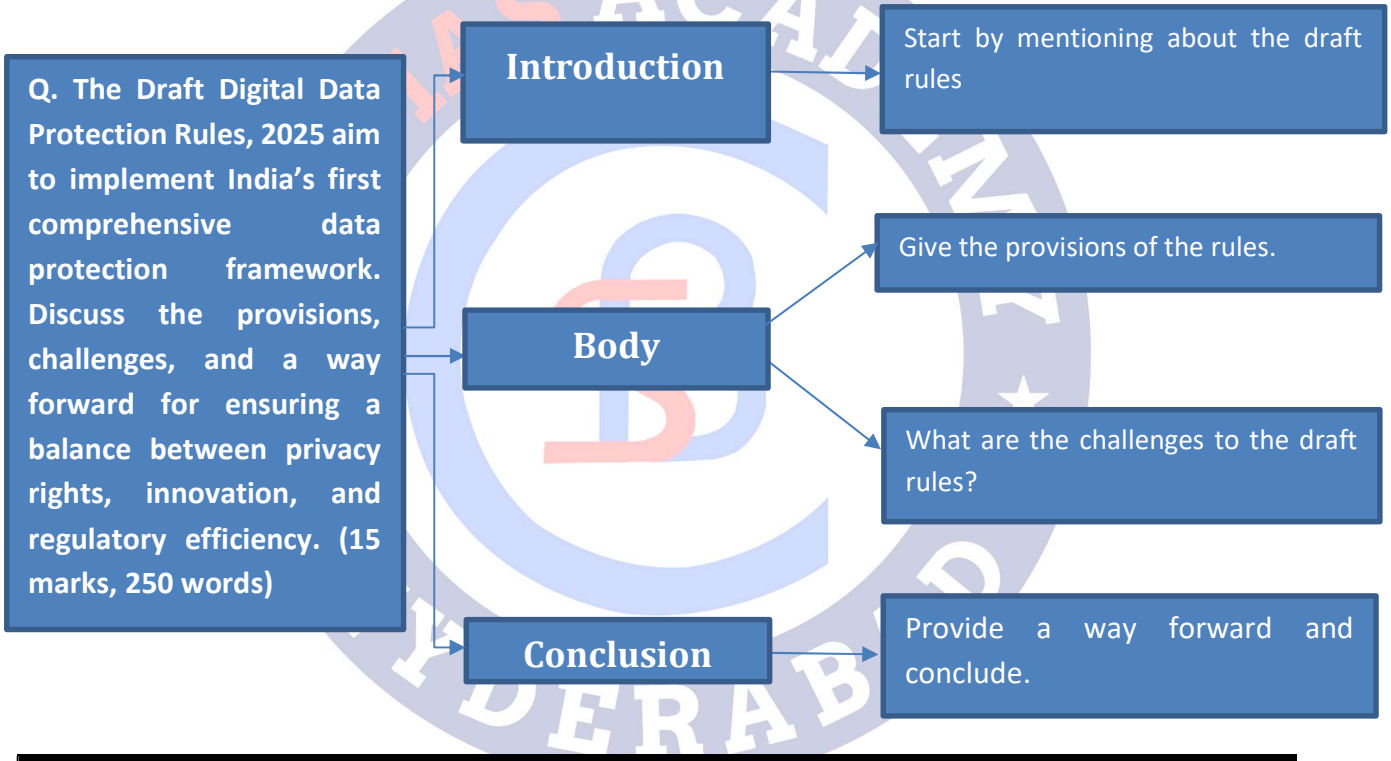
- **Geographical Scope: GDPR** Applies to all entities processing EU residents' data, regardless of the entity's location and is comprehensive, covering all industries with limited exemptions. Indian regime applies to entities processing digital personal data within India or offering goods/services to Indians with exemptions for specific sectors, such as education and healthcare, for tailored requirements.
- **Legal Philosophy: GDPR** is **prescriptive and process-driven,** with detailed requirements on how data should be handled. Consent must be explicit, informed, and granular. India is **principles-based and outcome-focused**, allowing flexibility for businesses. Consent is simplified and general, emphasizing clarity and reducing consent fatigue as there in EU.
- **Data Transfers: GDPR** prohibits data transfer to jurisdictions without adequate protection standards. It also does not mandate localisation of data but imposes stringent transfer controls. DPDP Act allows transfers only to government notified countries and mandates data localisation for significant data fiduciaries with potential overreach risks.
- **Regulatory Oversight:** Data Protection Authorities (DPAs) are independent at both national and EU levels as it emphasizes the autonomy of regulators for impartial enforcement.
- **Data Breach Management:** In GDPR data breaches must be reported to authorities within 72hrs and the users must be informed if a breach poses significant risks. DPDP Act does not specify clear timelines leading to potential delays in action.
- **Rights of Individuals:** Extensive rights, including the right to erasure, rectification, portability, and objection to processing. Indian system also includes similar rights but with simplified procedures for rectification and erasure.
- **Industry-Friendliness:** High compliance costs, often favouring large corporations over SMEs in GDPR. Flexibility for innovation in GDPR is limited due to strict requirements on data handling and user rights. India allows lower compliance burdens for smaller entities;

exemptions provided for specific industries and allows greater flexibility, particularly for education, healthcare, and smaller entities.

PRACTICE QUESTION

Q. The Draft Digital Data Protection Rules, 2025 aim to implement India's first comprehensive data protection framework. Discuss the provisions, challenges, and a way forward for ensuring a balance between privacy rights, innovation, and regulatory efficiency. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The Draft Digital Data Protection Rules, 2025, the subordinate legislation under the Digital Personal Data Protection (DPDP) Act, 2023, aim to operationalize the Act and address the balance between safeguarding individual privacy and enabling innovation.

PROVISIONS OF THE DPDP RULES, 2025

1. **Rights of Data Principals**: Consent management, including the right to provide or withdraw consent, rights to seek correction, erasure, and grievance redressal and nomination for data rights in cases of incapacity or death.

2. **Obligations of Data Fiduciaries**: Implementation of safeguards against breaches, clarity in consent notices with user-friendly formats and reporting data breaches to the Data Protection Board (DPB).

3. **Cross-Border Data Transfers**: Allowed only to countries notified by the government. Significant Data Fiduciaries (SDFs) must comply with stricter localization mandates.

4. **Specific Exemptions**: Educational and healthcare entities are exempt from certain requirements like parental consent for minors.

5. **Establishment of DPB**: Handles data breaches and grievances but operates under government control, raising independence concerns.

CHALLENGES IN THE DRAFT RULES

1. **Executive Overreach**: The DPB lacks independence as it functions under government control. Government's power to requisition sensitive data lacks safeguards.

2. **Vagueness in Provisions**: Undefined terms like "clear and plain language." No specific timelines for breach notifications.

3. **Lack of Transparency**: Controlled public consultations via the MyGov platform limit broader participation. Submissions treated as fiduciary restrict counter-comments.

4. **Implementation Delays**: Sixteen months after the DPDP Act, the rules are still in consultation, delaying trust-building.

5. **Data Localization Concerns**: Stringent localization for SDFs increases compliance burdens and risks regulatory arbitrage.

WAY FORWARD

1. **Regulatory Independence**: Establish an autonomous Data Protection Authority to ensure impartial oversight. Align DPB appointments with transparent and diverse stakeholder participation.

2. **Clarifying Provisions**: Define vague terms and specify breach notification timelines (e.g., 72 hours). Provide sector-specific guidelines for compliance.

3. **Transparency in Consultations**: Broaden feedback mechanisms through public forums and multi-language drafts. Publish all submissions (anonymized if necessary) for counter-comments.

4. **Flexible Localization Policies**: Adopt a sectoral approach to localization, as with the RBI's payment data mandate. Facilitate cross-border transfers through bilateral agreements.
5. **Promote Digital Literacy**: Conduct awareness campaigns on data rights and obligations in regional languages.
6. **Periodic Reviews**: Regularly update the rules to align with technological advancements like AI and IoT. Establish a multi-stakeholder advisory council for continuous feedback.

The Draft DPDP Rules, 2025, have the potential to establish India as a global leader in data governance by ensuring privacy rights and fostering innovation. Addressing the challenges of vagueness, overreach, and transparency through a participatory and balanced approach will pave the way for an inclusive and effective data protection framework.

7. INDIA-SINGAPORE RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations >> Bilateral relations of India

REFERENCE NEWS:

India and Singapore celebrated the 60th anniversary of their diplomatic relations on January 16, 2025, with a series of high-profile meetings and events that underscored their enduring partnership and shared vision for the future. The occasion was marked by the unveiling of a special commemorative logo by President Droupadi Murmu and Singapore President Tharman Shanmugaratnam during a ceremony in New Delhi.

INDIA-SINGAPORE RELATIONS:

Historical and Cultural Links

- **Ancient Maritime Trade**: Trade between the Indian subcontinent and Southeast Asia flourished during ancient times, with Indian traders influencing Singapore's culture, language, and religion. Indian cultural imprints, such as the influence of **Hinduism and Buddhism**, are evident in Singapore's historical monuments and practices.
- **Colonial Period**: Under British colonial rule, Singapore served as a hub for Indian workers and merchants. By the 19th century, Indians formed a significant part of Singapore's population.

Diplomatic Relations (Post-Independence)

- **Establishment of Ties**: India was among the first countries to recognize Singapore after its independence in 1965. Diplomatic ties were formally established the same year.
- **Cold War Era**: During the Cold War, relations were lukewarm as Singapore aligned with the U.S.-led bloc while India pursued non-alignment. Despite differing alignments, there was mutual respect for each other's sovereignty and independence.

Strategic and Economic Partnership (Post-1991 Economic Reforms)

- **Economic Cooperation**: India's economic liberalization in 1991 became a turning point, with Singapore emerging as a major investor in India. The **Comprehensive Economic Cooperation Agreement (CECA)** was signed in 2005, boosting trade, services, and

investment. The **Defence Cooperation Agreement (DCA)** in 2003 paved the way for joint military exercises and training.

- **Trade**: Singapore serves as India's gateway to Southeast Asia and a key logistics and financial hub.

People-to-People Ties

- **Indian Diaspora**: Indians form approximately **9% of Singapore's population**, contributing significantly to the economy, arts, and culture.

Contemporary Strategic Relations

- **Digital and Technological Cooperation**: Singapore has been instrumental in India's urban development programs like **Smart Cities**.
- **Regional and Global Platforms**: Both countries work together in organizations like **ASEAN**, **East Asia Summit**, and **ADMM-Plus**. Singapore supports India's aspirations for greater global influence, including its bid for a **permanent seat in the UN Security Council**.

Recent Developments

- **Post-Pandemic Recovery**: The **India-Singapore Ministerial Roundtable** launched in 2022 focuses on sustainable growth, green economy, and digital innovation.

SIGNIFICANCE OF INDIA-SINGAPORE RELATIONS:

Geopolitical Significance

- **Gateway to Southeast Asia:** Singapore serves as India's gateway to **ASEAN** and the broader Indo-Pacific region. Singapore was the **ASEAN Country Coordinator for India** (2021-24), during which India-ASEAN ties were elevated to a **Comprehensive Strategic Partnership**.
- **Support for India's Global Role:** Singapore supports India's bid for a **permanent seat in the UN Security Council (UNSC)** and is a strong partner in multilateral forums like **East Asia Summit (EAS)** and **ASEAN Regional Forum (ARF)**.
- **Indo-Pacific Vision:** Singapore aligns with India's **Act East Policy** and **Indo-Pacific Vision**, promoting maritime security, connectivity, and sustainable development in the region. Singapore co-hosted the **ASEAN-India Maritime Exercise** in 2023, showcasing its strategic alignment with India.

Economic Significance

- **Trade:** Singapore is India's **largest trading partner in ASEAN** and **6th largest globally**. Bilateral trade reached **$35.6 billion** in 2023-24, with Singapore accounting for **3.2%** of India's overall trade. **Exports to Singapore** is at $14.4 billion (+20.2% in 2023-24). **Imports from Singapore** is at $21.2 billion.
- **Foreign Investment:** Singapore is the **largest source of FDI** into India. In 2023-24, Singapore contributed **$11.77 billion** in FDI, representing 24% of total FDI inflows into India. Top sectors include **services, IT, pharmaceuticals, and telecommunications**.
- **Financial and Fintech Collaboration:** The **UPI-PayNow linkage** launched in 2023 allows seamless cross-border digital payments. **GIFT Connect**, collaboration between NSE and SGX for unified trading. **Proxtera-ONDC Connectivity** enhances cross-border e-commerce.

Defence and Security Significance

- **Strong Defence Cooperation:** Structured defence interactions include **bilateral exercises**. **Army**: Exercise **Agni Warrior, Navy**: Exercise **SIMBEX, Air Force**: **Joint Military Training** and **Multilateral**: **SITMEX** (India-Singapore-Thailand Maritime Exercise).
- **Maritime Security:** Joint efforts to ensure security in the **Straits of Malacca**, a crucial trade route. Singapore actively participates in India's **Exercise Milan** and other maritime initiatives.
- **Defence Technology:** Singapore collaborates with India's **DRDO** and defence production entities for joint R&D and innovation.

Science and Technology Significance

- **Satellite Launches:** ISRO has launched **18 Singaporean satellites**, including nine in 2023, strengthening India's role as a space partner.
- **Digital and Emerging Technologies:** MoUs on **digital technologies** and **cybersecurity** were exchanged during the **2024 summit**. Singapore and India launched a **Cyber Policy Dialogue** in 2024 to address challenges in AI, IoT, and 5G.
- **Green Economy:** India and Singapore collaborate on **renewable energy**, including green hydrogen, under sustainability agreements.
- **Semi-conductor:** India and Singapore are cooperating in critical sectors like advanced manufacturing and semiconductors as the relations are on a "new trajectory" of growth. A data corridor between the GIFT City in Gujarat and Singapore is being explored so that the financial institutions of the two sides can exchange data on a safe and trusted basis.

Diaspora and Cultural Significance

- **Indian Diaspora:** Indians form **9% of Singapore's resident population**, contributing to its economy in IT, finance, and construction. Singapore hosts the **highest concentration of IIT and IIM alumni** outside India.

- **Language and Cultural Promotion:** Tamil is an official language in Singapore, and Indian languages like Hindi, Bengali, and Punjabi are taught in schools. The **Thiruvalluvar Cultural Centre**, announced in 2024, aims to deepen cultural ties.
- **Diaspora Recognition:** Prominent Indian-origin individuals in Singapore, such as **Piyush Gupta (CEO, DBS Bank)**, strengthen bilateral ties. Piyush Gupta received the **Pravasi Bharatiya Samman Award** in 2023.

Diplomatic Significance

- **High-Level Visits:** Frequent exchanges at the highest levels have strengthened ties. Prime Minister Modi visited Singapore five times since 2014, while Singaporean leaders regularly visit India. In 2024, bilateral ties were elevated to a **Comprehensive Strategic Partnership**.
- **Multilateral Engagement:** Singapore joined India's initiatives like the **International Solar Alliance (ISA)** and **Global Biofuel Alliance** in 2023.
- **Ministerial Roundtables:** The **India-Singapore Ministerial Roundtable (ISMR)** focuses on skill development, sustainability, advanced manufacturing, and connectivity.

Indian Ocean Region (IOR) Significance

- **Maritime Cooperation:** India and Singapore are partners in ensuring **freedom of navigation** in the IOR. Collaboration in the **ASEAN-India Maritime Exercises** strengthens regional security.
- **Logistics and Connectivity:** Agreements on improving port infrastructure and connectivity enhance trade in the IOR.
- **Strategic Alignment:** Singapore's central location in Southeast Asia complements India's **Sagarmala Project** and broader maritime initiatives.

CHALLENGES OF INDIA- SINGAPORE RELATIONS:

Economic Challenges

- **Trade Imbalances:** India has a trade deficit with Singapore, as imports from Singapore often outpace exports. In 2023-24, India's imports from Singapore amounted to **$21.2 billion**, while exports were **$14.4 billion**, despite an increase in export growth (+20.2%).
- **Competition in Trade Agreements:** India's withdrawal from the **Regional Comprehensive Economic Partnership (RCEP)** in 2019 created divergence in their trade policies, with Singapore favouring multilateral frameworks. Singapore has consistently advocated for India to rejoin the RCEP to enhance regional economic integration.

Strategic Challenges

- **Regional Security Dynamics:** Singapore maintains strong ties with **China**, which sometimes creates a balancing act in its relationship with India. Singapore's participation in China-led initiatives like the **Belt and Road Initiative (BRI)** contrasts with India's reservations about such projects.

- **Maritime Security Concerns:** While both nations cooperate in maritime security, divergent approaches to issues like the **South China Sea** can occasionally create friction. Singapore supports a rules-based order in the South China Sea but maintains neutrality, while India emphasizes freedom of navigation and is wary of China's assertiveness.

Technological and Cybersecurity Challenges

- **Cross-Border Data Sharing:** Differences in data protection and privacy laws complicate collaborations in the digital and fintech sectors. India's **Digital Personal Data Protection Act, 2023**, includes stringent data localization requirements, which could affect Singaporean companies relying on cross-border data flows.
- **Intellectual Property Issues:** Concerns about intellectual property rights and patent enforcement in India deter Singaporean investments in tech-heavy sectors like pharmaceuticals and biotechnology.

Defence and Security Challenges

- **Limited Defence Production Collaboration:** Despite defence exercises, there is limited joint production or technology transfer in the defence sector. Unlike India's partnerships with France and Israel, defence collaborations with Singapore have been largely limited to training and joint exercises.

Geopolitical Challenges

- **Divergent Approaches to Regional Integration:** India's hesitation in joining regional trade agreements like RCEP contrasts with Singapore's advocacy for greater regional economic integration.
- **Influence of External Powers:** Singapore's strategic location in Southeast Asia makes it a hub for major powers, including the U.S. and China, which can influence its relationship with India. Singapore's alignment with China on certain trade initiatives sometimes creates tensions in India-Singapore relations.

Environmental and Sustainability Challenges

- **Climate Change Collaboration:** While both nations emphasize sustainability, differences in priorities sometimes hinder collaboration. India's focus on large-scale solar energy projects under the **International Solar Alliance** contrasts with Singapore's emphasis on urban sustainability and innovation.
- **Marine Pollution:** Managing marine pollution and ensuring sustainable development in the **Indian Ocean Region** remains a challenge for both countries.

Cultural and Diaspora-Related Challenges

- **Diaspora Integration:** Despite the large Indian-origin population in Singapore, issues like limited representation in political leadership and perceived cultural gaps sometimes surface. Indians form **9% of Singapore's population**, yet their political representation remains relatively low.

- **Visa and Immigration Issues:** Strict visa regulations for Indian professionals, particularly in sectors like IT, have occasionally strained ties. India has raised concerns about Singapore's **Fair Consideration Framework**, which prioritizes local hiring over foreign professionals.

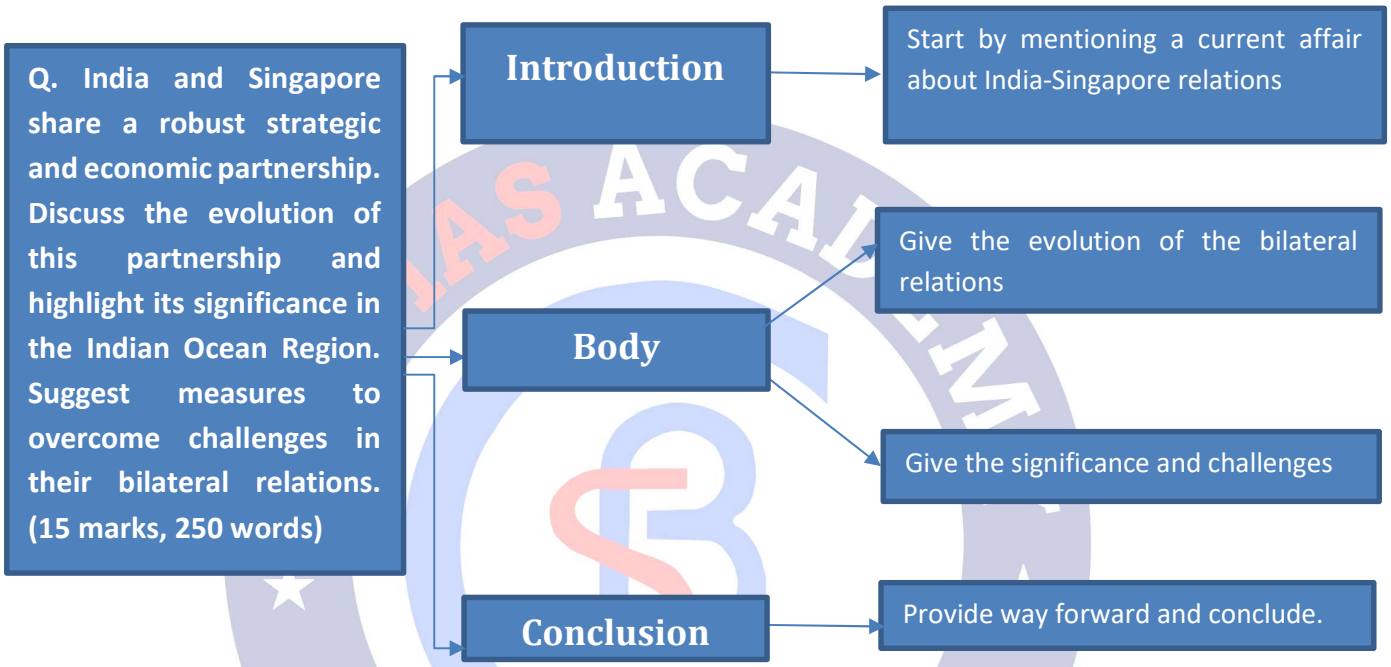
WAY FORWARD

- **Strengthening Maritime Security:** Set up joint mechanisms for real-time sharing of maritime intelligence to combat. Leverage Singapore's advanced technology in maritime surveillance and India's naval presence in the region.
- **Defence Technology Cooperation:** Enhance collaboration in developing indigenous defence technology, focusing on advanced naval systems and Autonomous underwater vehicles (AUVs) for undersea exploration and surveillance.
- **Blue Economy Partnerships:** Develop sustainable marine-based industries, including aquaculture, renewable ocean energy, and marine biotechnology. Joint projects under the **Blue Economy Vision** for the IOR.
- **Enhancing Port Connectivity:** Collaborate on improving port infrastructure in the IOR, Link **Singapore Port**, one of the world's busiest, with Indian ports like Mumbai and Kochi under **Sagarmala** and ASEAN trade corridors. Promote transshipment hubs to increase regional trade efficiency.
- **Free Trade and Logistics Integration:** Build on the **Comprehensive Economic Cooperation Agreement (CECA)** to integrate logistics networks between India and Singapore. Encourage investments in **special economic zones (SEZs)** near Indian coastal areas to facilitate Singaporean businesses.
- **ASEAN-India Strategic Alignment:** Strengthen India-Singapore cooperation within **ASEAN**, focusing on rules-based maritime governance. Climate-resilient infrastructure in the IOR.
- **Quad-ASEAN Partnership:** Use Singapore's influence in ASEAN and India's role in the **Quad** to develop joint projects. Promote sustainable infrastructure through Quad's **Infrastructure Coordination Group** and ASEAN's **Outlook on the Indo-Pacific**.
- **Boosting Digital and Financial Integration:** Expand the **UPI-PayNow linkage** to include more IOR nations, promoting cross-border financial inclusion.
- **Smart Ports and Digital Trade:** Jointly invest in "smart ports" that use AI and blockchain for efficient trade processing. Integrate **Proxtera (Singapore's SME platform)** with India's **ONDC (Open Network for Digital Commerce)** for seamless trade.
- **Encouraging Multilateralism and Shared Governance:** Actively engage with the **Indian Ocean Rim Association (IORA)** to develop regional governance frameworks. Focus on maritime security, disaster management, and trade facilitation. Jointly advocate for climate justice in multilateral forums like the UN and G20, ensuring sustainable development in the IOR.

PRACTICE QUESTION

Q. India and Singapore share a robust strategic and economic partnership. Discuss the evolution of this partnership and highlight its significance in the Indian Ocean Region. Suggest measures to overcome challenges in their bilateral relations. (15 marks, 250 words)

APPROACH



MODEL ANSWER

India and Singapore celebrated 60 years of diplomatic relations in 2025, reflecting their enduring and evolving partnership. Singapore serves as India's gateway to Southeast Asia and a critical partner in ensuring regional stability and economic growth in the Indo-Pacific and Indian Ocean Region (IOR).

EVOLUTION OF INDIA-SINGAPORE RELATIONS

1. **Historical Links**: Ancient trade routes and cultural exchanges during the colonial period established deep-rooted connections. Indian labor and businesses were integral to Singapore's development.
2. **Diplomatic Ties**: India was among the first nations to recognize Singapore in 1965.
3. **Post-1991 Economic Reforms**: The Comprehensive Economic Cooperation Agreement (CECA) of 2005 boosted trade, services, and investments, marking a turning point.

4. **Strategic Partnerships**: Defense agreements (e.g., Defence Cooperation Agreement, 2003) enabled joint military exercises like **SIMBEX** and **Agni Warrior**.

SIGNIFICANCE IN THE INDIAN OCEAN REGION

1. **Maritime Security**: Collaborations in securing the **Straits of Malacca**, a crucial global trade route. Participation in bilateral and multilateral exercises like **Milan** and **ASEAN-India Maritime Exercises**.

2. **Economic Gateway**: Singapore is India's largest trading partner in ASEAN and a major source of FDI. Bilateral trade reached **$35.6 billion in 2023-24**.

3. **Geopolitical Influence**: Singapore aligns with India's **Act East Policy** and Indo-Pacific strategy, ensuring a rules-based maritime order. Both countries support multilateral engagements, including ASEAN and the Indian Ocean Rim Association (IORA).

4. **Technology and Innovation**: Collaborations in digital technologies, fintech (e.g., **UPI-PayNow Linkage**), and green economy projects enhance economic resilience in the IOR.

CHALLENGES IN INDIA-SINGAPORE RELATIONS

1. **Economic Imbalances**: Persistent trade deficit for India (**$21.2 billion imports vs. $14.4 billion exports in 2023-24**). Differences in trade frameworks, such as India's reluctance to join RCEP.

2. **Maritime Tensions**: Divergent stances on the South China Sea and balancing ties with China.

3. **Technological Barriers**: India's data localization requirements under the **Digital Personal Data Protection Act, 2023**, hinder collaborations in fintech and cybersecurity.

4. **Diaspora and Visa Issues**: Challenges in integrating the **9% Indian-origin population** in Singapore and restrictive visa policies for Indian professionals.

WAY FORWARD

1. **Strengthening Maritime Security**: Real-time sharing of maritime intelligence and joint development of **Autonomous Underwater Vehicles (AUVs)**.

2. **Enhancing Economic Integration**: Expand CECA's scope and promote special economic zones (SEZs) for Singaporean investments. Focus on blue economy projects, including marine biotechnology and renewable ocean energy.

3. **Boosting Digital and Financial Collaboration**: Expand the **UPI-PayNow Linkage** to other IOR nations for seamless financial inclusion. Integrate **Proxtera (Singapore)** with **ONDC (India)** to enhance cross-border trade.

4. **Promoting Regional Leadership**: Collaborate on IORA-led initiatives in disaster management, sustainable trade, and climate change mitigation.

5. **Strengthening Diaspora Engagement**: Enhance cultural exchanges through initiatives like the **Thiruvalluvar Cultural Centre**. Streamline visa policies for Indian professionals to deepen economic ties.

India and Singapore's robust partnership is pivotal for stability and prosperity in the Indian Ocean Region. By addressing trade, technology, and maritime challenges, the two nations can elevate their Comprehensive Strategic Partnership and set an example of regional cooperation in the Indo-Pacific.

8. TRUMP 2.0, GLOBAL GEOPOLITICS AND INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations >> Bilateral Relations

REFERENCE NEWS:

United States President Donald Trump signed an executive order to withdraw from the World Health Organisation (WHO) on his very first day in office. The order said the reasons for withdrawing were WHO's "**mishandling of the COVID-19 pandemic**", "failure to adopt urgently needed reforms", "inability to demonstrate independence from the inappropriate political influence of WHO member states", and for continued demand of "unfairly onerous payments from the United States."

TRUMP 2.0 REVOLUTIONARY DECLARATIONS:

- **National Energy Emergency and Withdrawal from the Paris Climate Agreement**: Trump has repealed the Biden administration's climate goals, withdrawn the U.S. from the Paris Agreement, and declared a national energy emergency to boost fossil fuel production.
- **Imposition of Tariffs on Canada and Mexico**: Trump announced a 25% tariff on imports from Mexico and Canada, signalling a return to **protectionist trade policies.**
- **Unilateralism in Trade and International Agreements**: Trump plans to pursue unilateral trade measures, including possible withdrawal from the WTO and a refusal to re-engage with multilateral institutions.
- **Pardons for January 6 Capitol Rioters and Domestic Policy Reforms**: Trump issued pardons for those involved in the Capitol riots and eliminated diversity programs and LGBTQ protections. He also ordered cancelling the provision of citizenship by birth.
- **Gunboat Diplomacy** : Trump's statements about annexing Greenland and the Panama Canal, and potentially including Canada as the 51st state, evoke 19th-century imperialist policies.
- **Policy of Exceptionalism**: It is US attitude of being distinct and thus an exception from law that binds all other nations. Trump initiated U.S. withdrawal from WHO and Paris Agreement and plans to further disengage from multilateral institutions like WTO.

- **Tougher strictures on immigration, both legal and illegal:** On undocumented and illegal immigrants that could hit about 7.25 lakh Indians of which nearly 18000 are already on a final list for removal or deportations.

- **100% taxes on BRICS:** This will be on BRICS countries attempting to move to non-dollar transactions making it a more protectionist and America First narrative.

IMPACT ON GLOBAL GEOPOLITICS:

- **Weakening of Multilateral Institutions:** Undermines global governance systems that rely on U.S. leadership. Creates a power vacuum that rivals like China and Russia could exploit by shaping international institutions to align with their interests.
    - The dysfunction of the WTO Appellate Body, stemming from Trump 1.0 policies, hampers global trade dispute resolution.
- **Shift Towards Unilateralism:** Erodes trust among U.S. allies, leading to reduced cooperation in global economic and security initiatives. Encourages other nations to adopt protectionist policies, escalating trade wars.
    - The imposition of 25% tariffs on Canada and Mexico risks undermining the USMCA, leading to economic instability in North America.
- **Destabilization of Global Climate Governance:** Weakens global climate governance by signalling that major emitters can withdraw from collective agreements without consequence. Emboldens countries like Brazil and Australia to deprioritize climate action, increasing the risk of irreversible environmental damage.
- **Empowerment of Revisionist States:** Trump's disregard for international norms, such as territorial sovereignty and non-intervention, undermines the legitimacy of the global rules-based order. Encourages revisionist states like China and Russia to pursue territorial expansion and aggressive policies.
    - Russia's annexation of Crimea and China's assertiveness in the South China Sea could escalate further under diminished global oversight.
- **Erosion of Democratic Norms and Human Rights:** Diminishes U.S. soft power and its ability to promote democratic values abroad. Provides authoritarian regimes with justification for their own human rights violations.
    - Countries like Hungary and Turkey may use U.S. policies as a shield to defend their suppression of dissent.
- **Global Trade and Economic Instability:** The potential imposition of tariffs and prioritization of domestic industries could disrupt global supply chains and increase inflation. Creates uncertainty in global markets, discouraging investment and economic growth. Forces countries to diversify trade partnerships, reducing U.S. influence in global trade networks.

    - Asia-Pacific economies, already wary of U.S. trade policies, may deepen regional agreements like RCEP to counterbalance U.S. protectionism.
- **Creation of Parallel Global Alliances:** The unpredictability of U.S. policies may push traditional allies to form new coalitions that exclude the U.S. Reduces U.S. influence in global decision-making. Strengthens regional blocs, such as the EU's push for strategic autonomy or the emergence of China-led initiatives like the Belt and Road Initiative.
    - The EU has increasingly focused on self-reliance in areas like defence and technology to mitigate the impact of U.S. disengagement.
- **Encouragement of Sovereignty-Driven Policies:** Trump's focus on "America First" policies reinforces a global trend toward sovereignty-driven governance, reducing cooperation on transnational issues like climate change, pandemics, and cybersecurity. Hinders coordinated responses to global challenges. Increases the risk of fragmented and ineffective governance at the international level.
- **Precedent for Norm Violations:** Trump's rhetoric about annexing territories like Greenland or Panama sets a dangerous precedent for disregarding the UN Charter's principles of non-intervention and sovereignty. Normalizes violations of international law, destabilizing geopolitical relationships. Inspires other countries to pursue similar territorial ambitions, increasing the likelihood of conflicts.

POSITIVE IMPLICATIONS FOR INDIA:

- **Trump's stance on China**: His tough stance on China aligns with India's concerns about Chinese aggression in the Indo-Pacific and along the Line of Actual Control (LAC). During Trump 1.0, India signed key defence agreements like the **BECA (Basic Exchange and Cooperation Agreement)**, enhancing India's military capabilities.
- **Focus on Indo-Pacific Strategy**: Trump's commitment to a "Free and Open Indo-Pacific" aligns with India's strategic interests in countering China's growing influence. The U.S. elevated India to a **Major Defence Partner** during Trump 1.0, facilitating technology transfers.
- **Impetus to US-India Civil Nuclear Deal**: This may lead to fulfil the true potential of the deal and India could reap the benefits of lowering carbon footprint.
- **Decoupling from China**: U.S. efforts to reduce reliance on Chinese supply chains present opportunities for India to become an alternative manufacturing hub. Boost to India's "Make in India" initiative and increased U.S. investments in Indian industries. India has attracted investments from U.S. firms like Apple, which is shifting some manufacturing from China to India.
- **Energy and Fossil Fuel Cooperation**: Trump's emphasis on fossil fuels could lead to increased energy exports to India, including crude oil, LNG, and coal. Strengthened energy ties and diversification of India's energy sources.

- **Counterterrorism Collaboration**: Trump's strong stance against terrorism aligns with India's interests in countering Pakistan-sponsored terrorism. Enhanced intelligence-sharing and diplomatic pressure on Pakistan to curb terror activities. The U.S. under Trump 1.0 suspended security aid to Pakistan, signalling its disapproval of Pakistan's terror links.
- **Support for India's Global Aspirations**: Trump has previously expressed support for India's bid for a permanent seat at the **United Nations Security Council (UNSC)**. Strengthened India's global standing and influence in multilateral institutions.
- The growth of **Global Capability Centres (GCCs)** in India, driven by US companies, is one such area where collaboration could flourish.

NEGATIVE IMPLICATIONS FOR INDIA

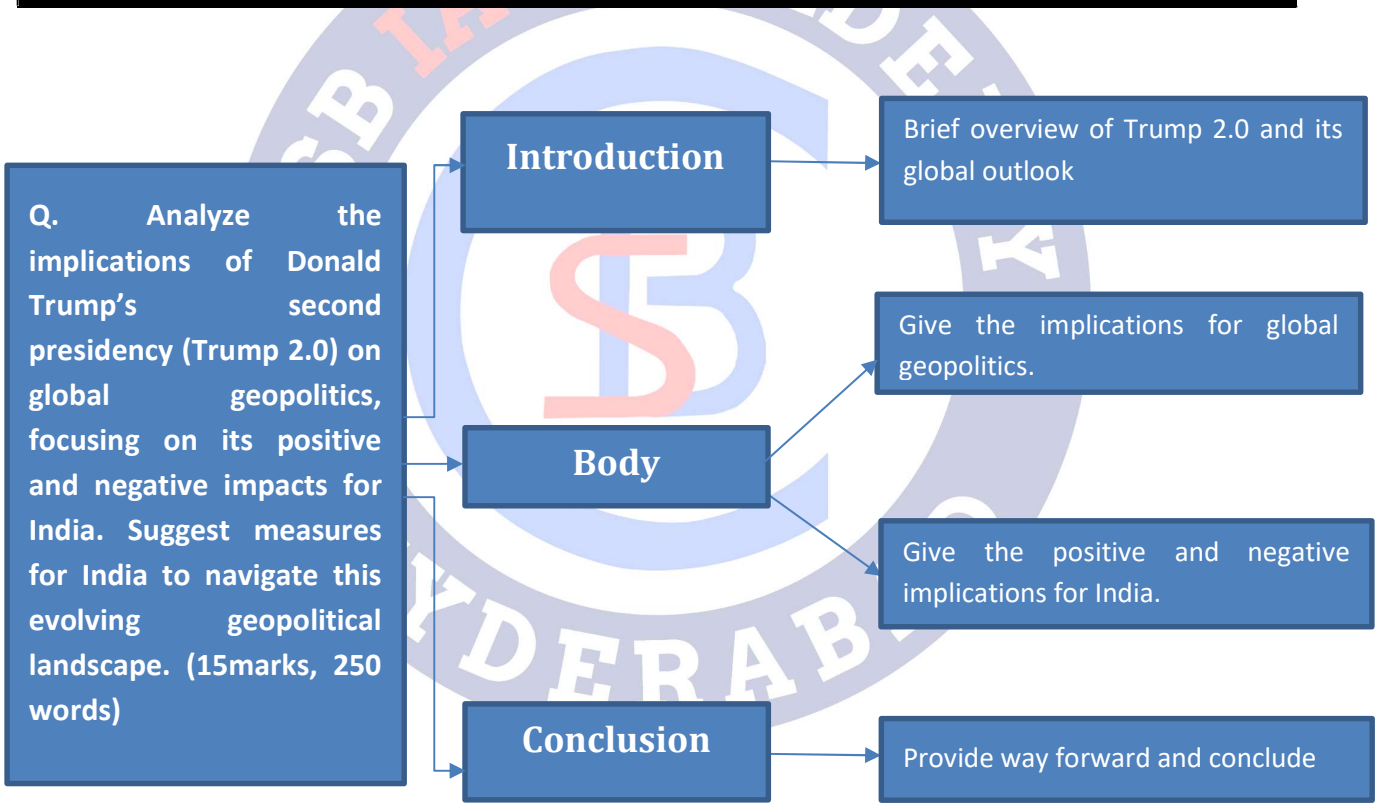
- **Protectionist Trade Policies**: Trump's "America First" agenda could result in higher tariffs on Indian goods and stricter trade policies. Reduced market access for Indian exporters, particularly in sectors like IT, textiles, and pharmaceuticals. During Trump 1.0, the U.S. terminated India's preferential trade benefits under the **Generalized System of Preferences (GSP)**.
- **Immigration Restrictions**: Tightened visa policies, including H-1B restrictions, could affect Indian IT professionals and students. Reduced opportunities for Indian talent in the U.S., impacting remittances and bilateral relations.
- **Geopolitical Uncertainty**: Trump's unpredictable foreign policy, including potential withdrawal from multilateral institutions, could create instability. U.S. withdrawal from the **Paris Climate Agreement** could reduce global momentum for climate action, impacting India's climate goals. India's ambitious solar energy targets depend partly on global partnerships and funding.
- **Strained Relations with Allies**: Trump's friction with traditional U.S. allies like the EU and Japan could weaken global coalitions important to India. Reduced multilateral support for India's positions, especially in forums like the WTO and UNSC.
- **Potential for Trade Wars**: Trump's aggressive tariff policies could lead to trade wars that disrupt global supply chains. Economic instability could affect India's exports and economic growth. A trade war with China could lead to global economic slowdown, indirectly affecting India.
- **Reduced Focus on Developmental Aid**: Trump's budget cuts to foreign aid programs could reduce U.S. assistance to India for health, education, and rural development. Slower progress in areas where India relies on international support, such as healthcare infrastructure.

Trumponomics, with its blend of protectionism and pro-business policies, presents a complex landscape for India and the world. While there are opportunities for economic growth and investment, the challenges of trade tensions, energy policies, and climate change cannot be overlooked. As India navigates this new phase, strategic diplomacy and adaptive economic policies will be key to leveraging the benefits and mitigating the risks of Trump's second term.

PRACTICE QUESTION

Q. Analyze the implications of Donald Trump's second presidency (Trump 2.0) on global geopolitics, focusing on its positive and negative impacts for India. Suggest measures for India to navigate this evolving geopolitical landscape. (15marks, 250 words)

APPROACH



MODEL ANSWER

Donald Trump's second presidency (Trump 2.0) marks a continuation of his "America First" policies, characterized by unilateralism, protectionism, and disengagement from multilateral institutions. These policies are expected to reshape global geopolitics, creating opportunities and challenges for nations, including India.

IMPLICATIONS FOR GLOBAL GEOPOLITICS

- **Weakening of Multilateral Institutions**: Withdrawal from WHO, WTO, and the Paris Climate Agreement undermines global governance. Creates a power vacuum, enabling China and Russia to shape international norms.

- **Rise of Sovereignty-Driven Policies**: Encourages nations to prioritize unilateralism, hindering coordinated responses to global challenges.

- **Destabilization of Global Climate Governance:** Weakens global climate governance by signalling that major emitters can withdraw from collective agreements without consequence. Emboldens countries like Brazil and Australia to deprioritize climate action, increasing the risk of irreversible environmental damage.
- **Empowerment of Revisionist States:** Trump's disregard for international norms, such as territorial sovereignty and non-intervention, undermines the legitimacy of the global rules-based order. Encourages revisionist states like China and Russia to pursue territorial expansion and aggressive policies.
- **Erosion of Democratic Norms and Human Rights:** Diminishes U.S. soft power and its ability to promote democratic values abroad. Provides authoritarian regimes with justification for their own human rights violations.
- **Global Trade and Economic Instability:** The potential imposition of tariffs and prioritization of domestic industries could disrupt global supply chains and increase inflation.

POSITIVE IMPLICATIONS FOR INDIA

1. **Tough Stance on China**: Trump's policies align with India's concerns about Chinese aggression in the Indo-Pacific and along the Line of Actual Control (LAC).

    - **Example**: Enhanced defense ties during Trump 1.0, including the signing of the BECA agreement.

2. **Focus on Indo-Pacific**: Strengthens Quad cooperation, supporting India's strategic interests in countering China's influence.

3. **Economic Opportunities**: Decoupling from China's supply chains creates opportunities for India to become a manufacturing hub under the "Make in India" initiative.

    - **Example**: U.S. companies like Apple are shifting some production from China to India.

4. **Energy Cooperation**: Increased U.S. exports of fossil fuels, such as LNG and crude oil, diversify India's energy mix.

5. **Counterterrorism Collaboration**: Stronger pressure on Pakistan to curb terrorism aligns with India's security priorities.
    - **Example**: Suspension of U.S. security aid to Pakistan under Trump 1.0.
6. **Support for India's Global Aspirations**: Backing for India's bid for a permanent United Nations Security Council (UNSC) seat strengthens India's global standing.

NEGATIVE IMPLICATIONS FOR INDIA

1. **Protectionist Trade Policies**: Higher tariffs on Indian goods and stricter trade policies threaten India's exports in IT, textiles, and pharmaceuticals.
    - **Example**: Termination of India's preferential trade benefits under the GSP during Trump 1.0.
2. **Immigration Restrictions**: H-1B visa curbs disproportionately affect Indian IT professionals and students, impacting remittances and bilateral relations.
3. **Climate Policy Reversals**: U.S. withdrawal from the Paris Agreement weakens global climate governance, affecting India's renewable energy goals.
    - **Example**: India's solar energy targets depend partly on international funding and cooperation.
4. **Geopolitical Uncertainty**: Unpredictable U.S. foreign policy and disengagement from multilateral institutions may disrupt global trade and security frameworks critical to India.
5. **Potential for Trade Wars**: Aggressive tariff policies risk triggering global economic slowdowns, indirectly affecting India.
6. **Reduced Development Aid**: Budget cuts to U.S. foreign aid could slow progress in health and education programs reliant on international support.

WAY FORWARD

1. **Strengthen Strategic Partnerships**: Deepen ties with like-minded nations such as Japan, Australia, and the EU to counterbalance U.S. unpredictability. Leverage platforms like the Quad to ensure stability in the Indo-Pacific.
2. **Enhance Trade Resilience**: Diversify trade partners and reduce dependence on the U.S. market to mitigate the impact of protectionist policies. Attract investments from U.S. companies by positioning India as a global manufacturing hub.

3. **Focus on Climate Diplomacy**: Collaborate with the EU and other nations to maintain momentum on global climate action. Strengthen domestic renewable energy initiatives to reduce dependence on external funding.

4. **Protect India's Diaspora**: Engage diplomatically to address immigration restrictions and ensure fair opportunities for Indian professionals in the U.S.

5. **Invest in Multilateralism**: Advocate for reforms in global institutions like the WTO to ensure a rules-based international order.

Trump 2.0 presents a complex geopolitical landscape for India, blending opportunities in defence, trade, and counterterrorism with challenges in immigration, climate, and global governance. By adopting a balanced and proactive approach, India can leverage the positives while mitigating the risks, positioning itself as a key player in a rapidly evolving global order.

9. INDIA-INDONESIA RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations >> Bilateral Relations

REFERENCE NEWS:

Indonesian President Prabowo Subianto on 23rd January, left Jakarta for New Delhi, stating that his visit to India would strengthen bilateral cooperation in defence, maritime security and digital technology.

EVOLUTION OF INDIA-INDONESIA RELATIONS:

Historical and Cultural Foundations

- **Ancient Times**: Deep cultural and historical ties, dating back to ancient times when **Hinduism and Buddhism** spread from India to Indonesia. This cultural exchange is evident in the Ramayana, Mahabharata, and temples like Borobudur and Prambanan in Indonesia.
- **Trade Routes**: The ancient spice trade connected the two regions, with Indian traders influencing Indonesian culture, language, and religion.
- **Indian Influence**: Sanskrit and Indian cultural practices significantly influenced early Indonesian kingdoms, such as Srivijaya and Majapahit.

Post-Independence Period (1947-1960s)

- **Support for Independence**: India supported Indonesia's independence from Dutch colonial rule in the late 1940s. Jawaharlal Nehru and Indonesia's Sukarno shared close personal rapport and anti-colonial visions.
- **Bandung Conference (1955)**: India and Indonesia were key participants in the Bandung Conference, which laid the foundation for the Non-Aligned Movement (NAM).

Strategic Divergence (1960s-1990s)

- **Cold War Era**: Indonesia, under Suharto, leaned toward Western-aligned policies, while India adhered to its Non-Aligned stance. Bilateral trade remained limited during this period, though cultural connections persisted.

Post-Cold War Reengagement (1990s-Present)

- **Look East Policy (1992)**: India launched its Look East Policy, emphasizing deeper engagement with Southeast Asia, including Indonesia. India's economic reforms and Indonesia's focus on economic growth paved the way for stronger economic ties during economic liberalisation.

SIGNIFICANCE OF INDIA-INDONESIA RELATIONS:

- **High-Level Exchanges in Prime Ministerial Visit (2018):** Strengthened relations through the Comprehensive Strategic Partnership and adoption of the **'Shared Vision on Maritime Cooperation in the Indo-Pacific.'**
- **Bilateral Institutional Mechanisms: Joint Commission Meetings (JCM)** established in 2001, with the 7th JCM held in New Delhi (2022). **Defence Ministers' Dialogue** present which involves regular engagements to enhance security cooperation. Special Mechanisms like Interfaith Dialogue (2018) and Joint Working Groups (JWG) on Counter-Terrorism, Narcotics, Oil & Gas, Renewable Energy, Agriculture, and Space Cooperation.
- **Commercial Relations**
  - **Trade:** Indonesia is India's second-largest trading partner in ASEAN. Bilateral trade increased to $38.84 billion in 2022-23.
  - **Investment:** Indian investments in Indonesia exceed $1.56 billion, while Indonesian investments in India are around $654.12 million.
  - **Connectivity:** Direct flights between major cities in both countries have boosted trade and tourism.
  - **Healthcare:** Collaboration includes hospital projects, training, and affordable healthcare services.
- **Defence Cooperation:** Established in 1951, defence ties encompass exercises (e.g., Garuda Shakti, Samudra Shakti), patrols (IND-INDO CORPAT), and industry collaboration. Defence ministers have reiterated commitments to deepen security and military partnerships.
  - India is considering a $450 million deal to sell Russian-backed supersonic cruise missiles to Indonesia as the Southeast Asian country looks to bolster defences.
- **Science and Technology:** Agreements between ISRO and Indonesia's BRIN include satellite and launch vehicle collaborations. MoU on Scientific and Technological Cooperation signed during PM Modi's visit (2018).
- **Cultural Cooperation:** Jawaharlal Nehru Indian Cultural Centre (Jakarta) and Swami Vivekananda Cultural Centre (Bali) promote yoga, dance, and cultural exchanges. Commemoration of 75 years of diplomatic ties in 2024 included joint activities and events.
- **Key Trilateral and Regional Mechanisms:**

- **India-Australia-Indonesia Trilateral:** Focuses on maritime security and regional cooperation in the Indian Ocean.
- **Andaman & Nicobar Islands – Aceh Connectivity:** Enhances trade, connectivity, and people-to-people ties.

CHALLENGES OF INDIA-INDONESIA RELATIONS:

- **Trade and Economic Imbalances:** Despite being major economies, bilateral trade remains underwhelming, hovering around **$38 billion (2022-23)**, falling short of its potential. India has a trade deficit with Indonesia due to heavy imports of palm oil and coal, making up a significant portion of bilateral trade, while Indian exports are relatively limited.
- **Maritime and Strategic Issues**: While both nations emphasize a **free, open, and inclusive** Indo-Pacific, there are differing strategic priorities. Indonesia has been cautious about India's growing role in regional security. Indonesia's concerns over India's ties with the **Quad (India, USA, Japan, and Australia)**, as Jakarta is wary of being caught in great power rivalries involving the US and China.
- **Limited Connectivity and Infrastructure**: Physical connectivity remains weak despite geographical proximity, affecting people-to-people exchanges and trade. Direct shipping links and air routes between Indian cities and Indonesia are limited, complicating business and tourism. The absence of robust port infrastructure linking the **Andaman & Nicobar Islands** to Indonesia is a missed opportunity.
- **Fisheries Disputes and Illegal Fishing**: Overlapping maritime boundaries in the **Indian Ocean Region (IOR)** lead to disputes over fishing rights. Cases of Indian fishermen being detained by Indonesian authorities for allegedly trespassing into their Exclusive Economic Zone (EEZ).
- **Chinese Influence in Indonesia**: Indonesia's deepening economic ties with China present competition for India. China is Indonesia's largest trading partner, with investments surpassing India's significantly. China's Belt and Road Initiative (BRI) projects, such as the **Jakarta-Bandung High-Speed Rail**, strengthen China's strategic footprint in Indonesia.
- **Cultural Disconnect and Limited Awareness**: While both nations share historical ties rooted in Hindu-Buddhist traditions, modern-day cultural exchanges are limited. Indian cultural influence in Indonesia (e.g., the popularity of the **Ramayana and Mahabharata**) has not translated into substantial modern cultural cooperation.
- **Bureaucratic and Policy Hurdles**: Both countries face red tape and slow policy implementation that hamper deeper engagement. Delayed implementation of agreements such as the **India-Indonesia Comprehensive Economic Partnership Agreement (CEPA)** negotiations.
- **Environmental and Climate Challenges**: Shared concerns like deforestation, climate change, and marine pollution require joint action but are yet to see substantial

cooperation. Indonesia's extensive palm oil industry contributes to deforestation, which impacts the **Indian Ocean's ecological health**.

- **Domestic Political Challenges**: Domestic political changes in both nations occasionally affect bilateral priorities. Indonesia's **domestic focus on archipelagic sovereignty** sometimes makes it hesitant to embrace broader regional cooperation with India.
- **Hyphenating relations of Indonesia with India and Pakistan:** India wants Indonesia to de-hyphenate its relations between India and Pakistan for a friction free diplomacy.
- **Counterterrorism and Security Concerns**: Despite shared concerns about terrorism, collaboration remains insufficient. The presence of extremist groups like **Jemaah Islamiyah** in Indonesia and its links to South Asia highlight the need for intelligence sharing, which remains limited.

POTENTIAL OF INDIA-INDONESIA RELATIONS:

- **Trade and Investment**: Expanding and diversifying bilateral trade and investment opportunities. **India is Indonesia's 10th largest trading partner**, India can enhance exports of pharmaceuticals, IT services, and machinery, while importing coal, palm oil, and minerals from Indonesia. Signing a **Comprehensive Economic Partnership Agreement (CEPA)** to lower trade barriers. Indonesia is the world's largest palm oil exporter, and India is the largest importer, creating a symbiotic trade opportunity.
- **Maritime Cooperation**: Strengthening maritime security and connectivity in the Indo-Pacific. The **India-Indonesia Coordinated Patrols (CORPAT)** in the Indian Ocean aim to curb piracy, illegal fishing, and smuggling. Developing port infrastructure linking India's **Andaman & Nicobar Islands** with Indonesia's Sabang Port. Enhancing collaboration under regional frameworks like the **Indian Ocean Rim Association (IORA)**. Both countries control vital sea lanes through which **40% of global trade passes**.
- **Energy Security**: India imports significant quantities of **coal** from Indonesia, while Indonesia can benefit from India's expertise in solar energy under the **International Solar Alliance (ISA)**. Leveraging India's solar energy expertise to help Indonesia achieve its renewable energy targets of **23% by 2025**. Indonesia is one of the largest exporters of coal, while India aims to meet **50% of its energy needs from renewables by 2030**.
- **Tourism and Cultural Exchange**: **Bali**, a Hindu-majority island in Indonesia, attracts millions of Indian tourists, while Indonesian tourists visit Indian pilgrimage sites like Varanasi and Bodh Gaya. Promoting **Ramayana and Mahabharata** narratives as cultural bridges. Indian tourist arrivals in Indonesia were over **6.9 lakh in 2022**, making India one of Indonesia's key tourist source markets.
- **Defence and Security Cooperation**: India and Indonesia signed a **Defence Cooperation Agreement (DCA)** in 2018 and conducted their first-ever **Samudra Shakti naval exercise**. Collaboration in defence manufacturing under India's **Make in India** initiative. Indonesia

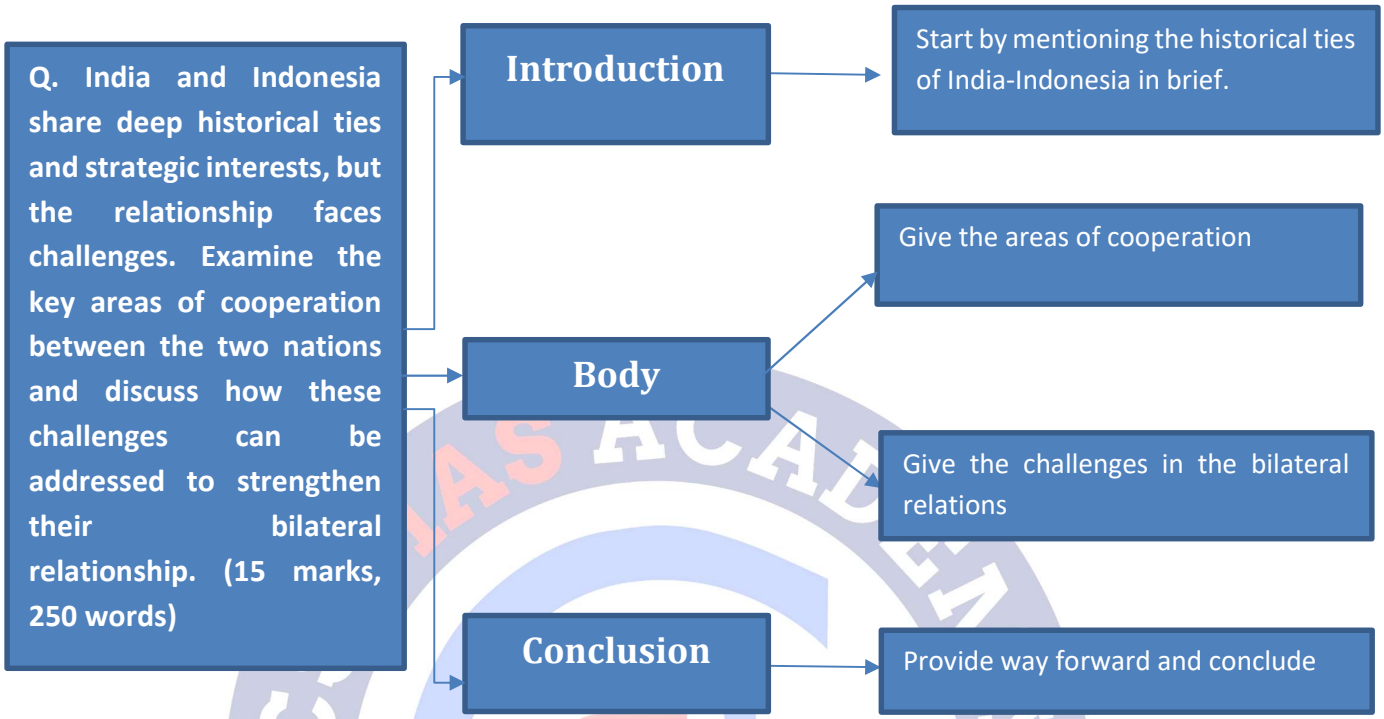
is modernizing its military and can source defence equipment from India, such as **Tejas fighter jets** and naval vessels.

- **Technology and Digital Economy**: India's expertise in **digital payments (UPI)** and fintech can benefit Indonesia's growing digital economy, which is projected to reach **$130 billion by 2025**. Indonesia has over **200 million internet users**, making it a lucrative market for India's IT sector.
- **Healthcare and Pharmaceuticals**: During the COVID-19 pandemic, India supplied **Covishield and Covaxin vaccines** to Indonesia under the **Vaccine Maitri initiative**. India is the world's largest producer of generic medicines, while Indonesia's pharmaceutical market is expected to grow to **$10 billion by 2025**.
- **Climate Change and Environmental Conservation**: Both nations are vulnerable to rising sea levels and can collaborate on sustainable development initiatives. Indonesia is home to **23% of the world's mangroves**, while India has successfully restored mangroves under its **National Adaptation Fund for Climate Change (NAFCC)**.
- **Education and Skill Development**: Indian universities attract Indonesian students, while collaborations like the **Indian Technical and Economic Cooperation (ITEC)** program offer skill development opportunities. Over **2,000 Indonesian students** are enrolled in Indian institutions annually.
- **Multilateral and Regional Cooperation**: Coordinating efforts on global issues in multilateral forums. Both nations are members of **ASEAN**, **G20**, and **IORA**, providing platforms for collaboration on global issues like trade, climate change, and security. Advocating for a **rules-based Indo-Pacific order**. Aligning positions on issues like WTO reforms and sustainable development. India chaired the G20 in 2023, while Indonesia held the presidency in 2022, showcasing their global leadership roles.

PRACTICE QUESTION

Q. India and Indonesia share deep historical ties and strategic interests, but the relationship faces challenges. Examine the key areas of cooperation between the two nations and discuss how these challenges can be addressed to strengthen their bilateral relationship. (15 marks, 250 words)

APPROACH



MODEL ANSWER

India and Indonesia share over two millennia of cultural and trade relations, rooted in historical exchanges of Hinduism, Buddhism, language of Tamil and commerce. In the contemporary era, this relationship has evolved into a strategic partnership with a focus on maritime security, trade, and defence.

KEY AREAS OF COOPERATION

1. **Trade and Investment**: Bilateral trade reached **$38.84 billion in 2022-23**, making Indonesia India's second-largest trading partner in ASEAN. India imports palm oil and coal, while exporting refined petroleum products, pharmaceuticals, and machinery.

2. **Maritime Security**: Cooperation in the **Indo-Pacific** region is critical for maintaining freedom of navigation and combating piracy. Joint exercises like **Samudra Shakti** and coordinated patrols (CORPAT) ensure maritime security.

3. **Defence and Security**: Defence Cooperation Agreement (2018) and exercises such as **Garuda Shakti** and **Samudra Shakti** enhance military collaboration. Indonesia's modernization of its military offers opportunities for defence exports from India, like the **Tejas fighter jets**.

4. **Energy and Environment**: India's expertise in renewable energy aligns with Indonesia's target of **23% renewable energy by 2025**. Collaboration under the **International Solar Alliance (ISA)** and joint mangrove conservation initiatives.

5. **Technology and Digital Economy**: India's digital payment systems, such as **UPI**, can assist Indonesia's expanding digital economy. Indonesia's projected digital market size of **$130 billion by 2025** provides immense potential for collaboration.

6. **Tourism and Culture**: Shared cultural heritage, such as the **Ramayana and Mahabharata**, forms the basis for cultural exchanges. Over **6.9 lakh Indian tourists** visited Indonesia in 2022, making India a key source market.

7. **Healthcare and Education**: India's position as the world's largest producer of generic medicines supports Indonesia's growing pharmaceutical needs. Vaccine Maitri initiative during COVID-19 highlighted India's role as a healthcare provider.

CHALLENGES IN INDIA-INDONESIA RELATIONS

1. **Trade Imbalances**: India's trade deficit due to high imports of palm oil and coal. Limited diversification of exports to Indonesia.

2. **Maritime and Strategic Concerns**: Indonesia's hesitation regarding India's involvement in **Quad** due to fear of regional rivalries.

3. **Infrastructure and Connectivity**: Absence of robust shipping and air links limits economic and cultural exchanges. Weak port connectivity between Andaman & Nicobar Islands and Indonesia's Sabang Port.

4. **Chinese Influence**: Indonesia's strong economic ties with China, including projects under the **Belt and Road Initiative (BRI)**, overshadow India's outreach.

5. **Bureaucratic and Policy Delays**: Delayed negotiations on CEPA and other agreements hinder progress.

6. **Cultural Disconnect**: Limited modern cultural exchanges despite historical connections.

WAY FORWARD

1. **Economic Diversification**: Promote Indian exports of pharmaceuticals, IT services, and renewable energy technology to reduce trade imbalances.

2. **Enhanced Maritime Collaboration**: Strengthen cooperation under the **Indian Ocean Rim Association (IORA)** and expedite the Andaman-Aceh connectivity project.

3. **Countering Chinese Influence:** Increase Indian investments in Indonesia's infrastructure, energy, and technology sectors. India's **Make in India** initiative can promote defence exports to Indonesia.

4. **Cultural and Tourism Promotion**: Enhance people-to-people connections through direct flights and tourism campaigns. Celebrating shared cultural icons like **Ramayana** through joint festivals.

5. **Policy Reforms and Engagement**: Expedite the signing of CEPA and strengthen bilateral institutional mechanisms like the Joint Commission Meetings.

India and Indonesia, as key players in the Indo-Pacific, share immense potential for collaboration in trade, defence, maritime security, and cultural exchanges as it is part of **India's extended Neighbourhood Policy.** Addressing the challenges through enhanced connectivity, diversification, and proactive diplomacy will strengthen this vital partnership, fostering stability and prosperity in the region.

10. H-1B VISA PROGRAM

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations

REFERENCE NEWS:

- The H-1B visa has become a key topic in US political discourse ahead of Donald Trump's inauguration as the 47th President.
- The focus intensified after Trump appointed Chennai-born Sriram Krishnan as Senior Policy Advisor for Artificial Intelligence, sparking backlash from Trump's "Make America Great Again" (MAGA) supporters, who argue that foreign workers displace American jobs and lower wages.
- Despite this, Trump has expressed strong support for the H-1B program, emphasizing its role in attracting skilled talent to bolster the US economy. His position is backed by close confidants Elon Musk and Vivek Ramaswamy, who stress the program's necessity to address critical skills gaps.

H-1B VISA PROGRAM OVERVIEW

- Established in 1990, the H-1B program aims to enable American employers to hire **skilled foreign workers** for jobs requiring specialized expertise and **at least a bachelor's degree**, addressing skill shortages that cannot be met domestically.
- Key features:
    - Maximum validity: **Six years (**after which the visa holder has to either leave the US for a period of at least 12 months before returning, or apply for and receive permanent residence ("Green Card")).
    - Annual numerical cap: **65,000 visas** (plus an additional **20,000** for candidates with advanced degrees from US institutions).
    - Exemptions: Some petitions, such as those for continuing employment or higher education/nonprofit affiliations, are not subject to the cap.
- Fiscal Year (FY) 2023 statistics:

- 118,948 initial employment petitions approved.
- 267,370 continuing employment petitions approved.

STEPS IN THE H-1B PROCESS

EMPLOYERS seeking to file H-1B petitions for new work visas subject to the annual cap must electronically register and pay the registration fee for each beneficiary. Basic information about the employer and foreign worker is needed. Initial registration period is for at least 14 calendar days for each fiscal year (Oct-Sept).

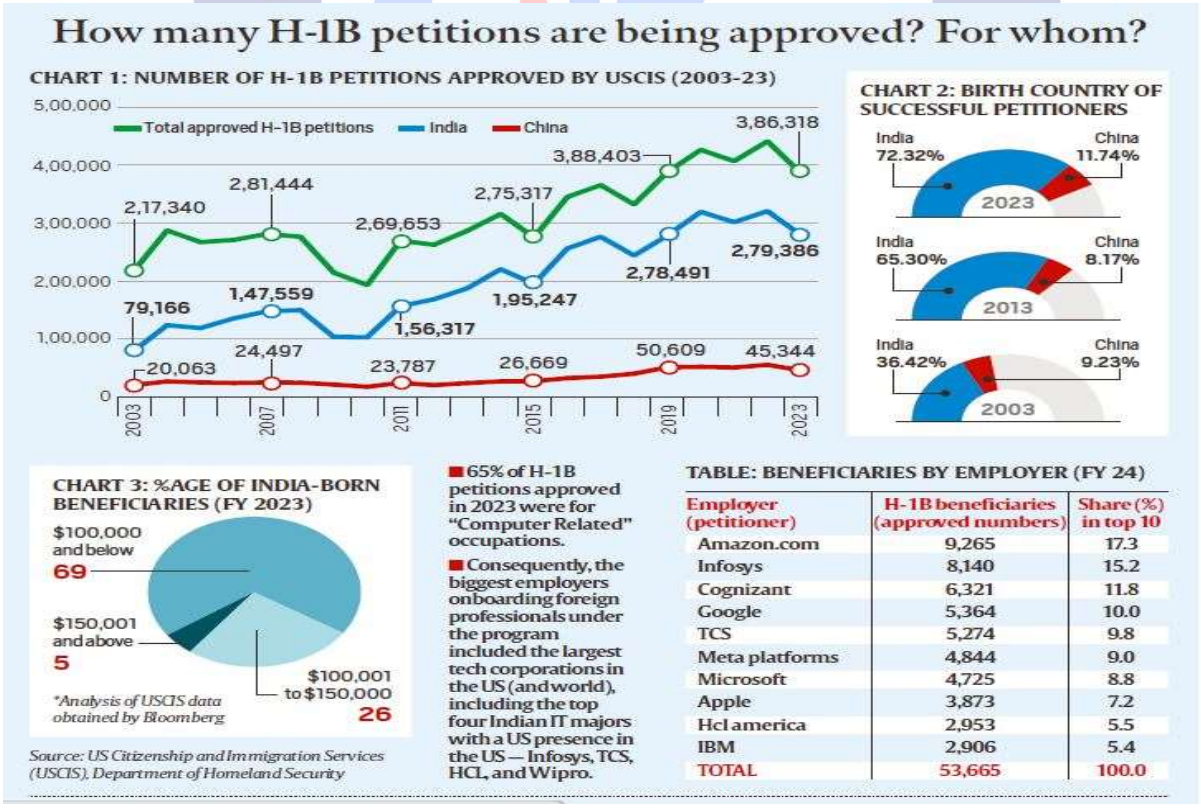
THE USCIS says that it follows a beneficiary-centric selection process to ensure that "each beneficiary would have the same chance of being selected, regardless of the number of registrations submitted on their behalf".

LOTTERY: Since USCIS usually gets more registrations than the available visa numbers, it runs a lottery to decide who can file the full H-1B petition. Thereon, only employers with selected registrations are eligible to file H-1B petitions subject to the caps within the prescribed time frame. If sufficient number of petitions are not received, USCIS may run another lottery.

SUCCESSFUL PETITIONS can then apply for a US visa at the concerned embassy.

INDIAN DOMINANCE IN H-1B PROGRAM

- **Indians are the largest beneficiaries** of the H-1B program, consistently accounting for **over 70% of approvals since 2015.**
  - China ranks second, with 12-13% of approvals since 2018.
- This dominance has drawn criticism from nativist factions, extending anti-immigration arguments from low-skilled labor to skilled Indian workers in the tech sector.



How many H-1B petitions are being approved? For whom?

CHART 1: NUMBER OF H-1B PETITIONS APPROVED BY USCIS (2003-23)

CHART 2: BIRTH COUNTRY OF SUCCESSFUL PETITIONERS

CHART 3: %AGE OF INDIA-BORN BENEFICIARIES (FY 2023)

**Analysis of USCIS data obtained by Bloomberg*

Source: US Citizenship and Immigration Services (USCIS), Department of Homeland Security

■ 65% of H-1B petitions approved in 2023 were for "Computer Related" occupations.

■ Consequently, the biggest employers onboarding foreign professionals under the program included the largest tech corporations in the US (and world), including the top four Indian IT majors with a US presence in the US — Infosys, TCS, HCL, and Wipro.

TABLE: BENEFICIARIES BY EMPLOYER (FY 24)

Employer (petitioner)	H-1B beneficiaries (approved numbers)	Share (%) in top 10
Amazon.com	9,265	17.3
Infosys	8,140	15.2
Cognizant	6,321	11.8
Google	5,364	10.0
TCS	5,274	9.8
Meta platforms	4,844	9.0
Microsoft	4,725	8.8
Apple	3,873	7.2
Hcl america	2,953	5.5
IBM	2,906	5.4
TOTAL	53,665	100.0

SIGNIFICANCE OF THE H-1B VISA PROGRAM:

- **Bridging the US Skills Gap**
  - The H-1B visa program addresses the shortage of skilled professionals in the US, particularly in **STEM fields such as technology, healthcare, and engineering**.
  - India's position as a global leader in producing STEM graduates (**2.55 million annually compared to the US's 820,000**) makes its professionals indispensable to the US workforce.
  - Indian H-1B holders contribute to maintaining the global competitiveness of US companies like **Google, Microsoft, and Amazon.**
  - Leaders such as Elon Musk and Vivek Ramaswamy have highlighted the role of H-1B visas in filling critical roles that would otherwise remain vacant.
- **Economic Impact on the US**
  - H-1B workers contribute directly to the US economy by **filling skill gaps**, **driving innovation, and increasing the profitability** of companies in high-tech industries.
  - These workers pay taxes, contribute to Social Security, and support local economies through **consumption and housing investments**.
  - The presence of skilled foreign workers enhances the productivity of US industries, particularly in fields like **artificial intelligence, robotics, and software development.**
- **Economic and Remittance Impact on India**
  - For India, the H-1B program serves as a significant economic driver:
    - Skilled Indian professionals in the US remit substantial income back home. India received **$111 billion in remittances in 2022**, the highest globally, a portion of which comes from H-1B holders.
      - The program supports India's IT sector by providing opportunities for professionals to gain international experience and expertise.
  - Indian H-1B holders contribute to the US while simultaneously boosting India's global reputation as a talent hub.

- **Strengthening India-US Economic Relations**
  - The H-1B visa fosters bilateral economic ties between India and the US, creating a mutually beneficial relationship:
    - Indian professionals help US companies remain globally competitive.
    - The US, in turn, provides employment opportunities and advanced learning environments for Indian talent.
  - The program also strengthens collaborations in technology, innovation, and business, enhancing both nations' economic capacities.
- **Impact on India's Soft Power**
  - The H-1B visa program bolsters India's soft power by **showcasing the global impact of its talent pool.**
  - Prominent Indian-origin leaders in US companies, such as **Sundar Pichai (Google) and Satya Nadella (Microsoft),** are a testament to the capabilities of Indian professionals.
  - This success enhances India's reputation as a **supplier of world-class talent** and strengthens its **cultural and diplomatic ties with the US.**
- **Benefits to US Innovation and Diversity**
  - H-1B workers bring diversity to US workplaces, fostering creativity and innovation through varied perspectives.
  - Their contributions drive advancements in critical technologies, enabling the US to maintain its technological and economic leadership.
  - The presence of international talent also creates opportunities for cross-cultural learning and collaboration, enriching the US workforce.
- **Cultural and Societal Impact**
  - The H-1B visa program has contributed to the growth of a **vibrant Indian diaspora in the US**, now exceeding **4.2 million people**.
  - Indian communities supported by H-1B workers have played a key role in fostering cultural ties and mutual understanding between India and the US.
  - This diaspora serves as a **bridge between the two nations**, enhancing cooperation in various fields, from technology to policy.

CRITICISMS ASSOCIATED WITH THE H-1B VISA PROGRAM:

- **Allegations of Job Displacement:**
  - Critics, including Senator Bernie Sanders, argue that the H-1B program primarily benefits employers by replacing **high-paying American jobs with lower-wage foreign workers.**
  - For instance, Sanders labelled the program as one that creates "low-wage indentured servants" rather than hiring "the best and the brightest."
- **Wage Suppression**
  - Data from FY 2023 highlights significant wage disparities:
    - **70% of Indian H-1B holders** earned **less than $100,000 annually**, below the median US IT professional salary of $104,420 (US Bureau of Labor Statistics).
  - Critics argue that tech companies exploit the program to hire workers at lower wages, prioritizing cost savings over fair labor practices.
- **Misuse by Employers**
  - The program's original intent to attract top global talent is undermined by claims that it is often used to staff mid-level roles.
  - Some companies, particularly outsourcing firms, are accused of filing excessive H-1B applications to dominate the visa pool, limiting opportunities for smaller businesses and genuinely specialized workers.
- **Lack of Job Mobility**
  - H-1B visa holders are **tied to their sponsoring employers**, restricting their ability to change jobs and negotiate better wages.
  - This creates a power imbalance, leaving workers vulnerable to exploitation and discouraging innovation in career mobility.
- **Impact on Domestic Talent**
  - Critics contend that the H-1B program discourages investment in upskilling the domestic workforce.

- By hiring foreign workers at lower wages, companies may bypass opportunities to train and develop local talent, affecting the long-term sustainability of the US workforce.

- **Geographic and Industry Bias**
  - The program disproportionately benefits certain industries, **such as technology, and regions like Silicon Valley.**
  - This concentration creates an uneven distribution of economic benefits and over-dependence on foreign labor in specific sectors.
- **Lottery System and Limited Quotas**
  - The annual cap of **65,000 visas**, with an additional **20,000 for advanced degree holders**, is widely considered insufficient.
  - The lottery-based allocation system is criticized for being arbitrary, favoring larger companies that flood the system with applications, and excluding deserving candidates based on merit.
- **Dependency on Indian Talent**
  - Over **70% of H-1B visas** go to Indian professionals, raising concerns about over-reliance on a single talent pool.
  - While Indian workers are critical to US innovation, this concentration has sparked nativist backlash, particularly from anti-immigration factions within Trump's base.
- **Broader Economic Concerns**
  - Critics argue that the program:
    - Contributes to wage stagnation for domestic workers.
    - Reinforces income inequality by channeling benefits to corporations rather than the broader workforce.
- **Political and Social Backlash**
  - The H-1B visa has become a politically divisive issue in the US:
    - MAGA supporters and nativist factions criticize the program as prioritizing foreign workers over Americans.

- Trump's appointment of Sriram Krishnan as AI Advisor reignited the debate, with some viewing it as symbolic of a system that allegedly undermines domestic labor.

WAY FORWARD:

- **Raise Minimum Salary Thresholds**: Increasing the minimum salary for H-1B workers can help prevent wage suppression and ensure fair competition for domestic workers. For instance, Elon Musk has suggested raising salaries significantly to prioritize local hiring over cost-saving motives.
- **Mandate Market-Based Compensation**: Employers should be required to offer wages consistent with industry standards to prevent exploitation and align with the program's original intent.
- **Prioritize Specialized Talent**: Refocus the program on attracting highly skilled workers for roles requiring advanced expertise, rather than mid-level positions. Implement stricter scrutiny of job descriptions to align with the program's goals of addressing critical skill shortages.
- **Introduce a Merit-Based Selection Process**: Replace or complement the lottery system with a points-based framework that assesses applicants based on qualifications, expertise, and industry needs.
- **Monitor and Penalize Abuses**: Strengthen oversight to prevent companies from misusing the program to hire cheaper labor or dominate the visa pool with excessive applications. Penalize firms that fail to meet transparency and ethical standards in their H-1B hiring practices.
- **Support Small and Medium Enterprises (SMEs)**: Reserve a portion of H-1B visas for SMEs and startups, which often struggle to compete with large corporations in securing skilled talent.
- **Decouple Visas from Sponsoring Employers**: Allow H-1B workers greater freedom to switch jobs without losing their visa status, reducing their vulnerability to exploitation. Introduce open work permits for H-1B holders after an initial employment period, promoting fair labor practices.
- **Simplify Green Card Pathways**: Expedite the green card process to reduce reliance on temporary visas and enhance stability for skilled immigrants.

- **Increase Annual Caps**: Expand the annual cap on H-1B visas to better meet demand in high-growth sectors like technology, artificial intelligence, and healthcare. Address workforce needs while maintaining safeguards to prevent over-reliance on foreign talent.
- **Exempt Critical Sectors**: Introduce exemptions or additional quotas for critical sectors where domestic skill shortages are particularly severe.
- **Promote STEM Education**: Increase funding and incentives for STEM education to build a robust domestic talent pipeline that complements the H-1B program.
- **Strengthen India-US Cooperation**: Enhance bilateral agreements between India and the US to streamline visa processes and address mutual workforce needs. Collaborate on talent exchange programs to foster innovation and economic growth in both nations.
- **Increase Transparency**: Ensure the public has access to data on H-1B allocations, wage structures, and sectoral impacts to counter misconceptions and foster informed debates.

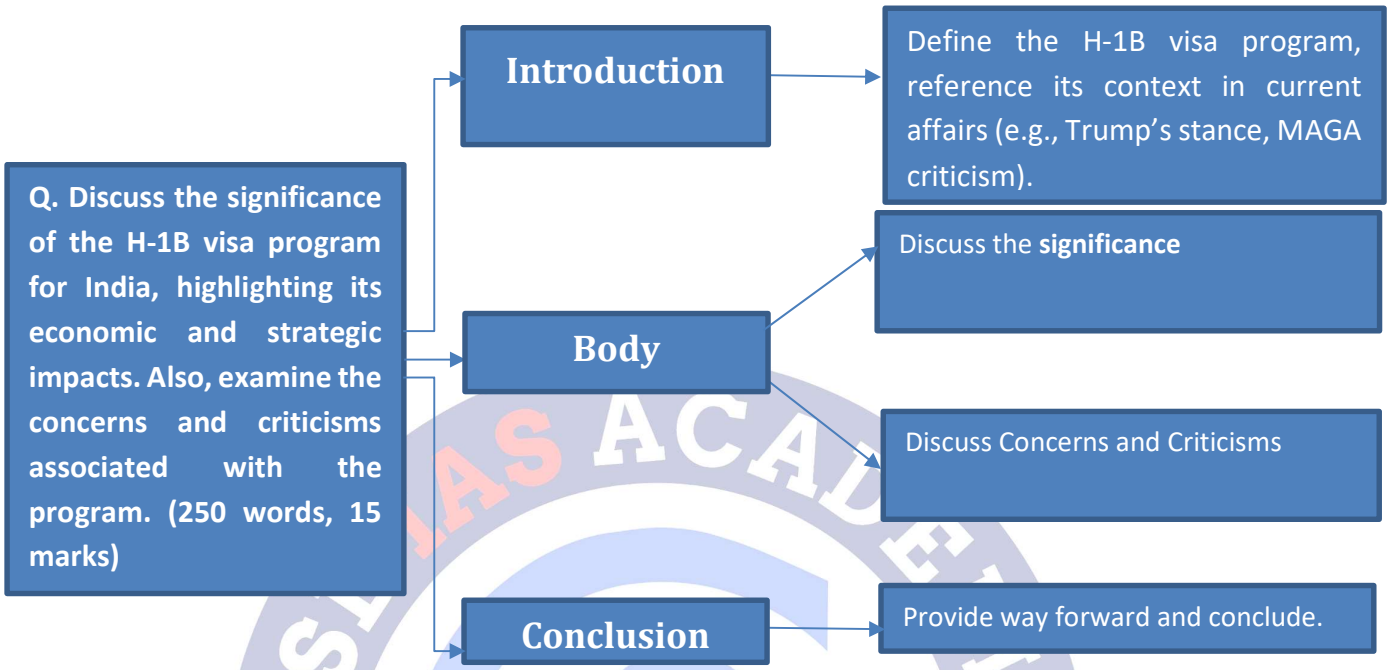
CONCLUSION

- The H-1B visa program's success depends on balancing its role in addressing skill shortages with fair labor practices. Reforms like raising wages, refining selection criteria, and supporting domestic talent can ensure it continues to drive innovation and strengthen economic ties, benefiting both the US and nations like India.

PRACTICE QUESTION

Q. Discuss the significance of the H-1B visa program for India, highlighting its economic and strategic impacts. Also, examine the concerns and criticisms associated with the program. (250 words, 15 marks)

APPROACH



MODEL ANSWER

The H-1B visa program, established in 1990, enables US employers to hire skilled foreign workers for specialized roles, addressing domestic skill shortages. Recently, it became a focal point in US political discourse, with criticism from Trump's "Make America Great Again" (MAGA) supporters, who argue that it displaces American jobs. Despite this, Donald Trump and his confidants, Elon Musk and Vivek Ramaswamy, have highlighted the program's necessity for addressing critical skills gaps and bolstering the US economy.

Significance of the H-1B Visa Program for India

1. **Economic Driver**:
    - Skilled Indian professionals dominate the program, comprising over 70% of approvals since 2015.
    - Remittances from H-1B holders contribute significantly to India's $111 billion inflows in 2022, the highest globally.
2. **Support for India's IT Sector**:
    - Provides international exposure and expertise to Indian IT professionals, strengthening India's global IT footprint.

3. **Strengthened Bilateral Ties**:
    - Enhances India-US economic and technological collaborations, creating a mutually beneficial relationship.
    - Indian talent sustains the global competitiveness of US companies like Google, Microsoft, and Amazon.
4. **Global Talent Recognition**:
    - Prominent Indian-origin leaders, such as Sundar Pichai and Satya Nadella, symbolize the global impact of Indian talent.
    - Positions India as a leading supplier of world-class professionals.
5. **Soft Power Projection**:
    - The success of Indian professionals enhances India's global reputation and strengthens its cultural and diplomatic ties with the US.

Concerns and Criticisms of the Program

1. **Job Displacement**:
    - Critics argue that the program replaces high-paying American jobs with lower-wage foreign workers, disproportionately affecting domestic employment opportunities.
2. **Wage Suppression**:
    - FY 2023 data reveals that 70% of Indian H-1B holders earned less than $100,000 annually, below the US IT median salary of $104,420.
3. **Program Misuse**:
    - Some companies misuse the program to hire mid-level workers instead of filling critical skill gaps.
    - Outsourcing firms flood the visa lottery system, sidelining smaller businesses and startups.
4. **Worker Vulnerability**:
    - H-1B holders are tied to sponsoring employers, limiting job mobility and increasing susceptibility to exploitation.

- Uncertainty in the green card process creates long-term instability for workers.

5. **Geopolitical and Nativist Backlash**:
    - Over-reliance on Indian professionals sparks nativist opposition, particularly from MAGA supporters, who view the program as undermining American labor.

Way Forward

- **Increase minimum salary thresholds** to address wage suppression and prevent exploitation.
- **Implement a merit-based selection process** to prioritize highly skilled professionals.
- **Expand visa quotas** to accommodate growing demand in STEM and critical sectors.
- **Introduce job mobility protections** to reduce worker vulnerability and ensure fair labor practices.
- **Strengthen bilateral cooperation** between India and the US to enhance talent exchange and streamline visa processes.

The H-1B visa program is a cornerstone of India-US relations, fostering economic growth, innovation, and cultural exchange. Addressing concerns through thoughtful reforms, such as improving wage standards, protecting workers, and ensuring fair access, will ensure the program's sustainability while continuing to benefit both nations.

11. YARLUNG TSANGPO HYDROPOWER PROJECT

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International relations > India and Neighbours

REFERENCE NEWS:

- Recently, China approved the construction of the **world's largest hydropower project** on the Yarlung Tsangpo (or Zangbo) river in Tibet. (The Yarlung Tsangpo in Tibet becomes the **Brahmaputra River** when it enters India.)
- On completion, the **60,000 MW** project will have the capacity to produce three times the amount of electricity as the world's largest hydro project, **the Three Gorges Dam** on the Yangtze in central China.

MORE ON NEWS:

- The project has raised concerns in **downstream countries like India and Bangladesh** about potential ecological impacts and alterations to water flow.
- India has expressed its concerns to China, urging that the interests of downstream states of the Brahmaputra are not harmed by upstream activities.
- The dam's construction is expected to **significantly alter downstream water flow patterns and impact local biodiversity.**
- The project is part of China's efforts to meet its **carbon neutrality goals and stimulate economic development in Tibet.**

Yarlung Tsangpo/Brahmaputra River

- Originates in Tibet and flows through the **Great Bend** in Medog County before entering Arunachal Pradesh, India, where it is called the **Siang River**.
- In Assam, it joins tributaries like the **Dibang and Lohit** to become the **Brahmaputra River**.
- The river flows through Bangladesh as the **Jamuna** before draining into the **Bay of Bengal**.

WHY THE YARLUNG TSANGPO HYDROPOWER PROJECT?

- **China's Clean Energy Ambition:** The Tsangpo project is integral to China's drive to transition from conventional energy sources to renewable energy, as part of its goal to achieve **net carbon neutrality by 2060**. The steep descent of the Yarlung Tsangpo from the Tibetan plateau ensures a **remarkable flow rate**, making it an ideal location for generating hydropower.
- **Energy Capacity and Scale:** On completion, the project will have a capacity of **60,000 MW**, producing three times the electricity of the **Three Gorges Dam**. The electricity generated is expected to total **300 billion kilowatt-hours annually**, significantly contributing to China's energy mix and reducing reliance on fossil fuels.
- **Economic and Development Goals:** Beijing views the project as a means to boost **economic development in Tibet**, a region it has long sought to integrate economically

and politically. The project underscores China's intention to consolidate control over Tibetan resources while addressing its burgeoning energy demands.

- **Strategic and Geopolitical Implications:** As noted by several experts and media reports, the dam will give China **greater control over the transboundary flow** of the Brahmaputra River, which originates as the Yarlung Tsangpo in Tibet. While Beijing has claimed that such projects are environmentally and socially beneficial, critics argue they grant China significant leverage over **downstream nations like India and Bangladesh**, raising concerns over **regional stability and water sharing**.

CONCERNS ASSOCIATED WITH THE TSANGPO HYDROPOWER PROJECT:

- **Geopolitical Concerns: The "Water Bomb" Threat:**
  - The **"water bomb" threat** refers to fears that China's control over the transboundary rivers, including the Yarlung Tsangpo (Brahmaputra in India), could be weaponized to manipulate water flow.
  - By building dams and diverting water upstream, China could potentially cause **flooding** or **water scarcity** in India during periods of hostility.
  - As reported by *The Economic Times*, the ability to regulate the river's flow gives China a strategic advantage, raising concerns about **India's water security** and regional stability.
- **Seismic Vulnerability:**
  - The dam is situated in Tibet's **high seismic zone**, increasing the risk of earthquakes and landslides, which could lead to **catastrophic dam failures**.
- **Disruption of River Ecology:**
  - Large infrastructure projects in fragile ecosystems disrupt **biodiversity**, alter **river flow patterns**, and reduce **silt deposition**, which is vital for downstream agriculture.
  - **Three Gorges Dam**, a similar project, caused **seismic disturbances**, displaced millions, and led to environmental degradation.
- **Impact on India's Water Resources**
  - The **Brahmaputra River** is essential for agriculture, drinking water, and biodiversity in India's northeastern states.

- Any disruption to its natural flow can have **devastating consequences**, including: **water shortages,** reduced agricultural productivity due to diminished **silt deposition** and negative effects on local **biodiversity**.

- **Agricultural Dependence:**
  - Communities in Assam and Arunachal Pradesh depend on the **Brahmaputra's seasonal flow and fertile silt** for their livelihoods.
  - Altered river flows could exacerbate **poverty** and **migration**.
- **Flood Risks:**
  - Sudden release of water during dam operations or in case of dam failure could lead to **devastating floods**, affecting millions.
- **Data Sharing Challenges:**
  - While MoUs exist, disruptions during geopolitical tensions (e.g., **Doklam standoff 2017** and **Ladakh conflict 2020**) highlight the lack of consistent **data-sharing mechanisms**.
  - Limited transparency from China regarding dam operations adds to India's concerns.
- **Precedents of Negative Impacts**
  - China's dam-building on the Mekong has caused **water scarcity** and **environmental degradation** downstream, impacting nations like Laos, Cambodia, and Vietnam.
  - Similar consequences could occur in the Brahmaputra Basin.

COORDINATION MECHANISM BETWEEN INDIA AND CHINA ON TRANSBOUNDARY RIVERS

1. Memorandums of Understanding (MoUs)

- **Umbrella MoU (2013):**
  - Signed to establish cooperation on transboundary rivers.

- It has no expiry date but currently sees **no active engagement**, as stated on the **Ministry of Jal Shakti's website**.

- **Brahmaputra MoU:**
  - Focuses on sharing hydrological data of the Brahmaputra River during monsoon months.
  - This MoU is renewable every five years but **lapsed in 2023**, with renewal discussions ongoing.

- **Sutlej MoU:**
  - Introduced after the **Parechu Lake incident** in 2004, which caused flooding in India.
  - Lacks provisions for year-round data sharing, and the agreement is **pending renewal**.

2. Expert Level Mechanism (ELM)

- Established in **2006** to facilitate **annual meetings** between India and China on water-related issues.
- The process has faced interruptions during times of geopolitical tensions, such as:
  - The **Doklam crisis (2017)**.
  - The **Ladakh standoff (2020)**.

3. United Nations Convention on Watercourses (1997)

- Neither India nor China is a signatory to this convention, but both adhere to its principles, including:
  - **Equitable and reasonable utilisation of waters**.
  - Avoiding actions that significantly harm other riparian states.
- This framework provides a potential guideline for managing transboundary rivers effectively.

Challenges in Cooperation

- Data-sharing mechanisms, though largely functional, have seen disruptions during bilateral tensions.
- China has not agreed to **round-the-year hydrological data sharing**, limiting transparency.
- There is a lack of progress in implementing broader, binding agreements that require mutual commitment.

WAY FORWARD

- **Renew MoUs:** Expedite the renewal of the **Brahmaputra MoU (lapsed in 2023)** and introduce provisions for **round-the-year data sharing**. Push for the renewal and strengthening of the **Sutlej MoU**, ensuring better disaster management mechanisms.
- **Reinvigorate the Expert Level Mechanism (ELM):** Conduct regular **annual meetings** to address water-related concerns and prevent interruptions caused by geopolitical tensions.
- **Enhancing Regional Cooperation:** Collaborate with downstream nations like **Bangladesh** to create a **regional water-sharing framework**, presenting a unified stance to China. Leverage experiences from the **Mekong River Basin** to mitigate potential risks and build stronger multilateral agreements.
- **Advocating Transparency and Data Sharing:** Encourage China to adopt **transparent practices** in sharing hydrological and operational data related to the Yarlung Tsangpo dam. Strengthen monitoring systems in Indian territory to gather **real-time hydrological data**, reducing dependency on external sources.
- **Diplomatic Engagement:** Raise the issue of transboundary river projects in **bilateral talks** with China and international forums, emphasizing the **principle of equitable water use**. Highlight the **"water bomb" threat** and environmental concerns to seek global support and accountability from China.
- **Developing Domestic Infrastructure:** Expedite the construction of India's **Upper Siang Hydropower Project** and other dams in **Arunachal Pradesh** to secure water resources. Enhance flood control measures and develop **water management systems** to minimize risks from altered river flows.
- **Leveraging International Frameworks:** Advocate for adherence to principles of the **1997 United Nations Convention on Watercourses**, focusing on: Equitable and reasonable utilization of shared water resources. Prevention of actions that harm downstream states. Use international platforms like the **United Nations** to highlight the potential ecological and geopolitical impacts of the Tsangpo project.
- **Strengthening Disaster Management:** Develop robust disaster management protocols for **flooding** or **dam failure** scenarios, especially in Assam and Arunachal Pradesh. Conduct joint exercises with China to coordinate responses to emergencies, reducing risks to life and property.

- **Environmental Impact Mitigation:** Commission studies to understand the potential impact of altered river flow on **local biodiversity** and **agriculture**. Push for environmentally sustainable practices in the construction and operation of transboundary river infrastructure.

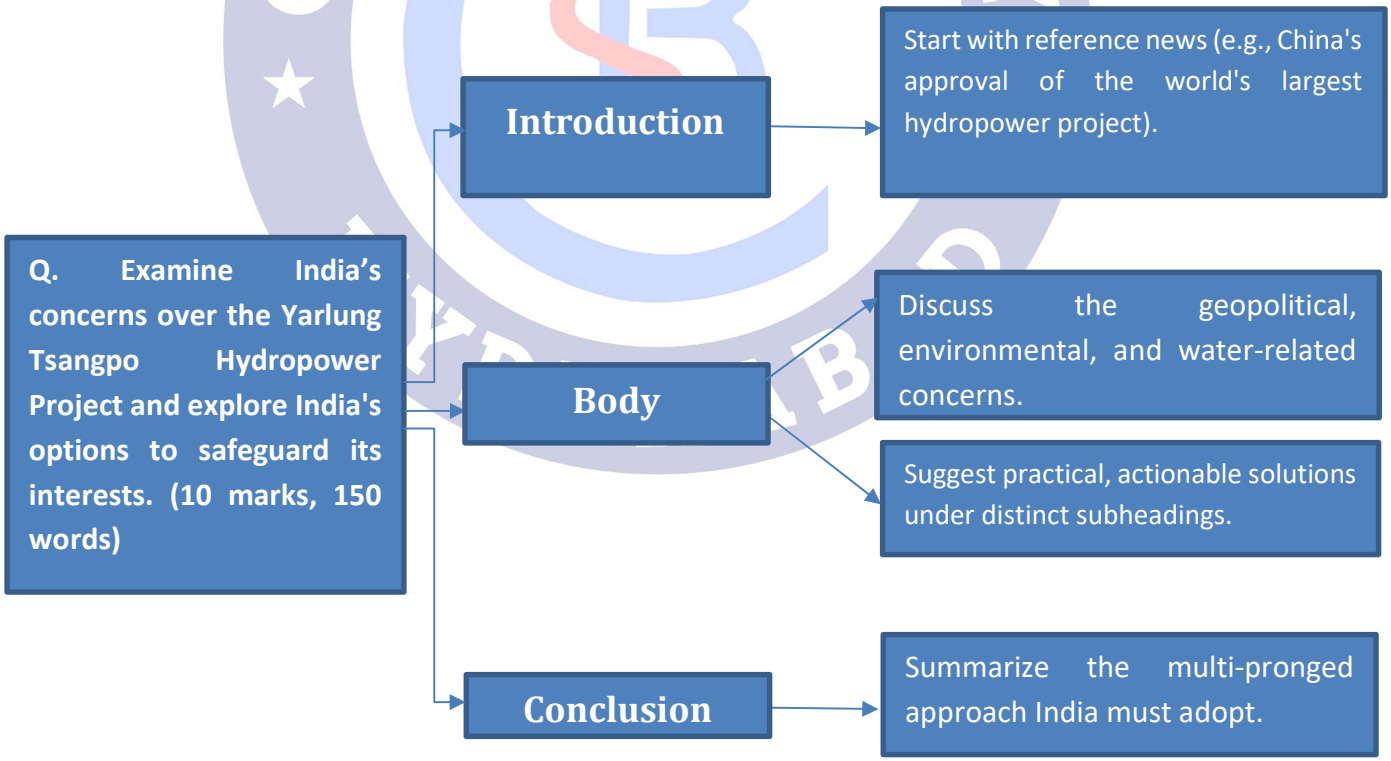
CONCLUSION:

- India must adopt a **multi-pronged approach** that combines **diplomatic pressure**, **domestic preparedness**, and **regional cooperation** to address the challenges posed by China's Yarlung Tsangpo Hydropower Project. Ensuring transparency, strengthening bilateral mechanisms, and expediting domestic water projects will be key to safeguarding India's ecological, water, and strategic interests.

PRACTICE QUESTION

Q. Examine India's concerns over the Yarlung Tsangpo Hydropower Project and explore India's options to safeguard its interests. (10 marks, 150 words)

APPROACH



MODEL ANSWER

Recently, China approved the construction of the **world's largest hydropower project** on the Yarlung Tsangpo (Brahmaputra in India) in Tibet. The 60,000 MW project, with a capacity three times that of the Three Gorges Dam, is part of China's efforts to achieve **carbon neutrality by 2060**. However, it has raised concerns in downstream countries like India and Bangladesh regarding potential ecological impacts, water flow alterations, and geopolitical implications.

India's Concerns:

- **Geopolitical Concerns: The "Water Bomb" Threat:**
    - The project grants China **strategic control** over the Brahmaputra River, potentially allowing it to:
    - Cause **flooding** or **water scarcity** in India during hostile situations.
    - Use its ability to regulate water flow as a **geopolitical tool**, threatening India's **water security** and **regional stability**.
- **Environmental and Ecological Risks:**
    - The dam is located in **Tibet's high seismic zone**, posing risks of:
        - Earthquakes and landslides that could lead to **catastrophic dam failures**.
        - Large-scale projects disrupt **biodiversity**, alter **river flow patterns**, and reduce **silt deposition**, impacting downstream agriculture.
- **Impact on India's Water Resources:**
    - The Brahmaputra River is crucial for:
        - **Agriculture, drinking water**, and **biodiversity** in India's northeastern states.
        - Disruptions to its natural flow could result in **water shortages**, **reduced agricultural productivity**, and **migration** due to poverty.
        - Sudden release of water during dam operations or in case of failure could lead to **devastating floods**, affecting millions.

- **Data Sharing and Transparency Issues:**
    - Existing mechanisms like the **Brahmaputra MoU** (lapsed in 2023) have faced disruptions during geopolitical tensions, such as: The **Doklam standoff (2017)** and the **Ladakh conflict (2020)**.
    - Limited transparency from China regarding dam operations exacerbates India's concerns.

India's Options to Safeguard Its Interests:

- **Strengthening Bilateral Mechanisms:**
    - Renew the **Brahmaputra MoU** and introduce provisions for **round-the-year hydrological data sharing**.
    - Reinvigorate the **Expert Level Mechanism (ELM)** to ensure consistent dialogue on water-related concerns.
- **Diplomatic Engagement:**
    - Raise the issue in **bilateral talks** and emphasize the principles of **equitable water sharing**. Highlight the **"water bomb" threat** and ecological risks in international forums to seek global support.
- **Enhancing Regional Cooperation:**
    - Collaborate with downstream nations like **Bangladesh** to create a **regional water-sharing framework**.
    - Present a unified stance against China's unilateral projects.
- **Expediting Domestic Infrastructure:**
    - Develop India's **Upper Siang Hydropower Project** in Arunachal Pradesh to strengthen water security.
    - Improve **flood control measures** and establish efficient **water management systems**.
- **Leveraging International Frameworks:**
    - Advocate for adherence to principles under the **1997 UN Convention on Watercourses**, focusing on:

- **Equitable utilization** of shared water resources.
- Prevention of harm to downstream states.

- **Strengthening Disaster Management:**
  - Develop **robust protocols** to manage floods or dam failures in Assam and Arunachal Pradesh.
  - Conduct joint exercises with China for **emergency coordination**.

The Yarlung Tsangpo Hydropower Project underscores the need for **proactive measures** to address geopolitical, ecological, and water security concerns. India must adopt a **multi-pronged approach**, combining **diplomatic pressure**, **regional cooperation**, and **domestic preparedness** to safeguard its strategic and ecological interests while fostering sustainable water-sharing practices.

12. INDIA-AFGHANISTAN RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International relations > India and Neighbours > India-Afghanistan

REFERENCE NEWS:

- Recently, senior officials from India and Afghanistan met in Dubai, marking an upscaling of diplomatic engagements since the Taliban takeover.

MORE ON NEWS:

- Indian Foreign Secretary Vikram Misri's presence signified India's intent to open new avenues in the bilateral relationship.
- Afghan Foreign Minister Mawlawi Amir Khan Muttaqi addressed **India's security concerns**, while India reiterated its willingness to **support Afghanistan's humanitarian and developmental needs.**
- India is striving to stabilize its relations with the Taliban-led Afghanistan while **limiting Chinese and Pakistani influence.**
- The meeting occurred amidst deteriorating Afghanistan-Pakistan relations, with **Pakistan launching airstrikes in Afghan territory**.

HISTORY OF INDIA-AFGHANISTAN RELATIONSHIP

Ancient and Modern Foundations

- India's relationship with Afghanistan dates back to the **Indus Valley Civilization**, marked by trade and cultural exchanges. Afghanistan served as a conduit for trade and the spread of Buddhism, fostering shared heritage.
- **Treaty of Friendship (1950):** Modern bilateral ties were formalized with the **Treaty of Friendship on January 4, 1950**, emphasizing cooperation in political, economic, and cultural spheres.

India's Role during Geopolitical Shifts

- **Soviet-Afghan War (1979–1989):** India was the **only South Asian nation to recognize the Soviet-backed Democratic Republic of Afghanistan**, showcasing its strategic support.
- **Challenges during Taliban Rule (1996–2001):** India's influence waned when the **Taliban, supported by Pakistan**, captured Kabul in 1996. Security concerns heightened following the **hijacking of Indian Airlines Flight IC814 in 1999**.

Rebuilding Ties Post-Taliban (2001–2021)

- **Post-2001 Developments:** After the **US invasion in 2001** and the ousting of the Taliban, India quickly re-established ties and resumed active involvement in Afghanistan's reconstruction. India made **investments exceeding USD 3 billion**, fostering strong economic and defence partnerships with the Afghan government.
- **Key Developmental Contributions:**
  - **Delaram-Zaranj Highway:** Enhancing regional connectivity.
  - **Salma Dam (2016):** Supporting irrigation and energy needs.
  - **Indira Gandhi Institute of Child Health (Kabul):** Strengthening healthcare infrastructure.
  - **Afghan Parliament Building (2015):** A symbol of India-Afghanistan friendship.

Impact of the Taliban's Return (2021-Present)

- **Humanitarian Assistance:** India facilitated educational exchanges and medical tourism, while also providing humanitarian aid, including **50,000 metric tons of wheat** during the COVID-19 pandemic.
- **Taliban Resurgence:** The **fall of Kabul in 2021** disrupted India's projects and diplomatic efforts. However, India maintained humanitarian support while asserting that Afghan soil must not be used for anti-India activities.
- **Diplomatic Re-engagement:** India initiated contact with the Taliban through meetings in **Doha and Dubai**, addressing security concerns and emphasizing humanitarian aid.
- India's policy has focused on **balancing national security concerns with developmental commitments in Afghanistan.** Its strategic investments counter Chinese and Pakistani influence in the region. From its recognition of the Soviet-backed regime to rebuilding

efforts post-2001, India's relationship with Afghanistan reflects resilience and adaptability, rooted in shared history and mutual interests.

IMPORTANCE OF AFGHANISTAN TO INDIA

Geostrategic Significance:

- **Gateway to Central Asia:** Afghanistan serves as a critical link for India's access to energy-rich Central Asia, bypassing Pakistan.
    - The **Chabahar Port** in Iran, developed with India's assistance, facilitates trade with Afghanistan and Central Asia, circumventing Pakistani restrictions.
- **Countering Pakistan's Influence:** A stable Afghanistan reduces Pakistan's strategic depth and limits the influence of groups that pose threats to Indian security.
- **Strategic Vacuum Post-US Withdrawal:** The US exit has created a security vacuum that India cannot afford to ignore. India must protect its investments, prevent Afghanistan from becoming a safe haven for anti-India terrorist groups, and counter Pakistan's deepening influence in Kabul.

Regional Security:

- **Terrorism Concerns:** Afghanistan's stability is vital for India's security, particularly in combating cross-border terrorism and groups like the **Haqqani network**. The Taliban-Pakistan nexus poses additional threats to India, especially in **Jammu and Kashmir**.
- **Taliban Rule and Security Risks:** The rise of the Taliban has historically provided a safe haven for terrorist groups like **Jaish-e-Mohammed (JeM)** and **Lashkar-e-Taiba (LeT)**.

Economic Significance

- **Trade and Connectivity:** Air freight corridors and routes through **Chabahar Port** boost bilateral trade. Afghanistan is essential for projects like the **TAPI (Turkmenistan-Afghanistan-Pakistan-India) pipeline**, critical for meeting India's energy demands.
- **Natural Resources:** Afghanistan has an estimated **$1 trillion** worth of untapped mineral resources, including:
    - **Lithium**: Crucial for batteries and technologies addressing the climate crisis.
    - **Copper, Iron, and Rare Earth Minerals:** Valuable for India's economic and industrial growth.

India's Investments in Afghanistan

- **Critical Investments:** Since 2001, India has invested over **$3 billion** in Afghanistan's human and physical infrastructure, including the Afghan Parliament, Salma Dam, and Zaranj-Delaram Highway.

INDIA-AFGHANISTAN COOPERATION

- **Bilateral Trade:**
  - India is the second-largest destination for Afghan exports despite the lack of direct land access..
- **Developmental Assistance:**
  - India, the fifth-largest donor to Afghanistan, provided scholarships, food assistance, and helped rebuild infrastructure, including the power grid and telecom lines.
- **Major Infrastructure Projects:**
  - **Afghan Parliament:** Built at $90 million, inaugurated in 2015.
  - **Salma Dam:** A 42-MW hydropower project, completed in 2016.
  - **Zaranj-Delaram Highway:** A strategic 218-km highway connecting Afghanistan to Iran's Chabahar port.
  - **Power and Telecom:** Built a 220kV transmission line from Pul-e-Khumri to Kabul and restored telecom infrastructure.
- **Healthcare Initiatives:**
  - Restored the Indira Gandhi Institute for Child Health.
  - Conducted free medical camps and built healthcare centers in border provinces.
- **Defence and Training:**
  - Delivered Mi-25 helicopters, provided military training, and paid for Russian military equipment under a 2014 agreement.
- **Political Cooperation:**
  - Advocated for Afghanistan's SAARC membership (2005).

- Signed the **Strategic Partnership Agreement (2011)** for rebuilding infrastructure and promoting investment.

- **Connectivity and Investments:**
  - **Air Freight Corridor (2017):** Boosted Afghan exports to India.
  - **Hajigak Mines:** Indian consortium secured rights to iron ore deposits.
- **Cultural and Educational Ties:**
  - ICCR scholarships for 1,000 Afghan students annually.
  - Shared cultural links in music, food, Bollywood, and cricket.
- **Diaspora:**
  - Approximately 1,710 Indians in Afghanistan (2020), engaged in sectors like IT, construction, healthcare, and NGOs.

CHALLENGES IN INDIA-AFGHANISTAN RELATIONS

- **Lack of a Coherent Policy**
  - India currently lacks a clear Afghanistan policy, often justified as "strategic patience."
  - This inaction allows regional players like **China** to gain strategic advantages.
- **Security Challenges from Taliban Takeover**
  - Taliban-sponsored terror activities, including fostering safe havens for anti-India groups like **Jaish-e-Mohammed (JeM)** and **Lashkar-e-Taiba (LeT).**
  - Historical instances, such as the 1999 hijacking of an Indian Airlines flight, highlight risks.
  - Afghanistan may re-emerge as a terrorist hub under the Taliban, threatening Indian-administered Kashmir's stability.
- **Threats to Indian Infrastructure and Trade**
  - Developmental projects face risks under Taliban rule, based on India's past experiences.

- The Taliban's control has blocked trade of dry fruits and other goods through the Wagah-Attari border.

- **Humanitarian Crisis**
  - Taliban rule has revived concerns over women's rights, minority protection, and child rights.
  - The humanitarian crisis escalates with thousands attempting to flee the country.
- **Pakistan Factor**
  - Pakistan's influence over the Taliban undermines Indian interests, particularly through its **Strategic Depth Doctrine.**
  - A Taliban-dominated Afghanistan could allow Pakistan to dictate anti-India policies.
- **India's Reluctance to Engage Directly with the Taliban**
  - While countries like the **US, China, and Russia** maintain direct engagements with the Taliban, India continues with a "wait and watch" approach.
  - This limits India's ability to safeguard its interests effectively.
- **China Factor**
  - The U.S. withdrawal opens opportunities for China, which remains actively engaged in Afghan-centric negotiations.
  - China's willingness to work with the Taliban expands its regional influence.
- **Geographic Connectivity Barrier**
  - India lacks direct land access to Afghanistan, relying on **limited air freight corridors** and the **Chabahar route** for connectivity.
- **Drug Trafficking**
  - Afghanistan remains the largest producer of opium, fueling instability that affects regions like **Punjab in India.**

- **Untapped Resources**
    - Security issues, poor infrastructure, and droughts hinder the extraction of Afghanistan's vast mineral resources, limiting economic potential under Taliban rule.
- **Political Instability**
    - The absence of an inclusive government under the Taliban complicates India's bilateral relations and jeopardizes long-term investments.

WAY FORWARD

- **Engaging with Regional Players**
    - **Cooperation with Pakistan:**
        - Restarting dialogue with Pakistan is essential for ensuring lasting peace in Afghanistan.
        - Collaboration on shared security concerns can stabilize the region.
    - **Engagement with China:**
        - India should continue its discussions with China, particularly on regional stability and infrastructure development in Afghanistan.
        - Leveraging platforms like the **Shanghai Cooperation Organization (SCO)** can foster cooperative solutions.
- **Utilizing Soft Power**
    - **Cultural Diplomacy:**
        - India should strengthen cultural ties through education, scholarships, and initiatives like cricket diplomacy, which have yielded positive results in the past.
    - **People-Centric Development:**
        - Continuing humanitarian aid and developmental assistance to build goodwill among Afghan citizens, even under the Taliban regime.
- **Strengthening SAARC and Regional Platforms**

- Reviving SAARC as a platform to address controversial issues and foster collective security and economic measures.
- Partnering with **Central Asian nations** for connectivity projects and counter-terrorism efforts.

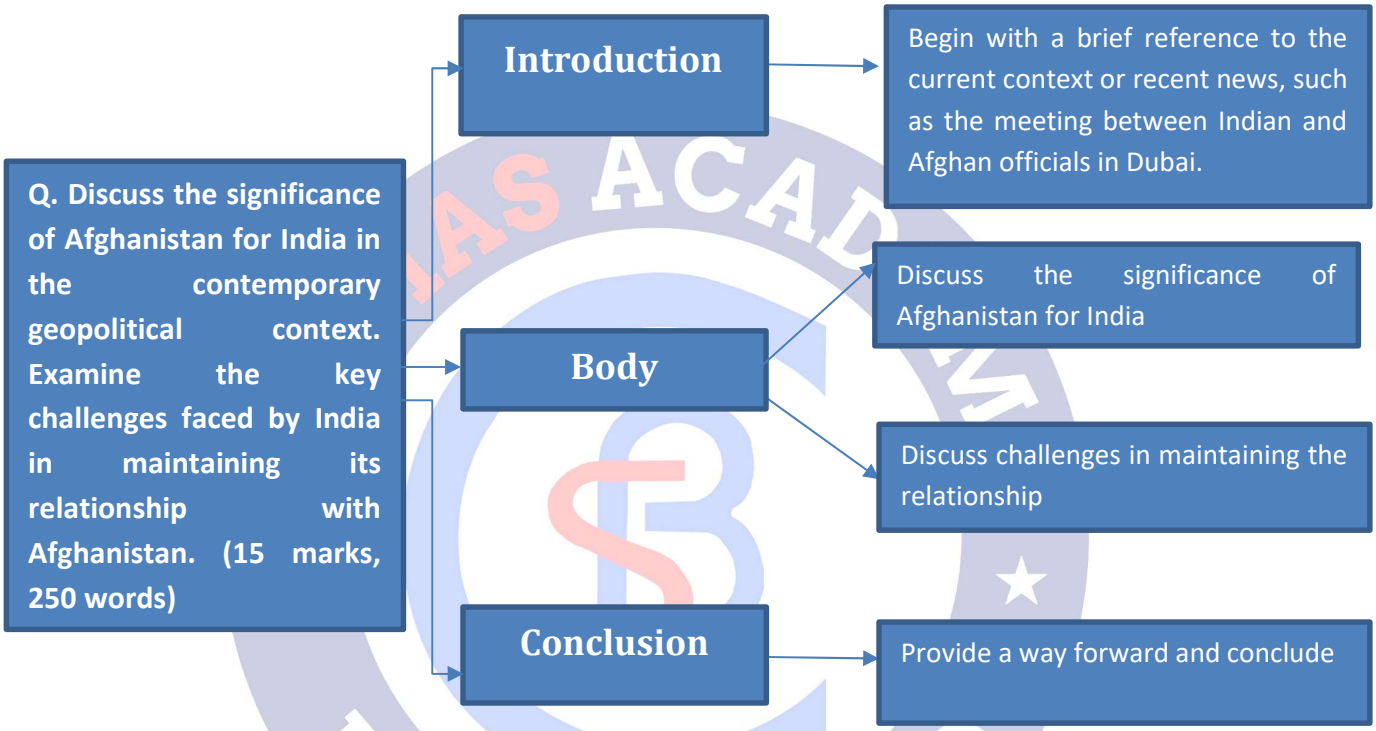
- **Engaging with the Taliban**
  - India must recognize the changing realities on the ground and engage directly with the **amenable factions of the Taliban** to safeguard its investments and strategic interests.
  - Recent diplomatic re-engagements, such as meetings in Dubai, indicate progress in this direction.
- **Independent Afghan Policy**
  - Formulating a policy free from Western pressure, emphasizing India's long-term strategic goals and historical ties with Afghanistan.
  - Leveraging **Iran's Chabahar Port** and partnerships with Central Asian countries for connectivity and trade.
- **Combating Security Challenges**
  - Strengthening intelligence-sharing and counter-terrorism partnerships with **regional allies** to prevent spillover effects of terrorism.
  - Enhancing military capabilities while maintaining a balance between hard and soft power.
- **Leveraging International Forums**
  - Collaborating with the **United Nations** and international organizations to address the humanitarian crisis and prevent Afghanistan from becoming a hub for global terrorism.

CONCLUSION: India's relationship with Afghanistan is pivotal for regional stability, countering terrorism, and advancing economic and strategic interests. While the Taliban's return has posed significant challenges, India's historical ties, developmental investments, and strategic location provide a strong foundation for continued engagement. By adopting a pragmatic, multi-faceted approach—combining soft power, regional partnerships, and direct engagement—India can safeguard its interests while contributing to Afghanistan's stability and development.

PRACTICE QUESTION

Q. Discuss the significance of Afghanistan for India in the contemporary geopolitical context. Examine the key challenges faced by India in maintaining its relationship with Afghanistan. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The recent meeting between Indian Foreign Secretary Vikram Misri and Afghan Foreign Minister Mawlawi Amir Khan Muttaqi in Dubai highlights India's renewed efforts to stabilize its relations with the Taliban-led Afghanistan. This diplomatic engagement underscores the importance of Afghanistan for India, not only in terms of regional security but also for its strategic, economic, and connectivity goals.

Significance of Afghanistan for India

Strategic and Geopolitical Significance

- **Gateway to Central Asia:** Afghanistan serves as a critical link for India's access to energy-rich Central Asia, bypassing Pakistan.

- The **Chabahar Port** in Iran, developed with India's assistance, facilitates trade and connectivity with Afghanistan and Central Asia.

- **Countering Pakistan's Influence:** A stable Afghanistan reduces Pakistan's strategic depth, limiting its influence over anti-India terror groups.
- **Post-US Withdrawal Strategic Vacuum:** The U.S. retreat has created a security vacuum that India cannot afford to ignore.
    - Protecting Indian investments and preventing Afghanistan from becoming a hub for anti-India activities are essential priorities.

Economic Significance

- **Natural Resources:** Afghanistan holds an estimated **$1 trillion worth of untapped resources**, including:
    - **Lithium**: Crucial for renewable technologies and addressing the global climate crisis.
    - **Copper, Iron, and Rare Earth Minerals**: Supporting India's industrial and technological growth.
- **Trade and Connectivity:**
    - Air freight corridors and routes through the Chabahar Port boost bilateral trade.
    - Afghanistan is central to the **TAPI pipeline**, critical for India's energy security.

Security Significance

- **Combating Terrorism:** Afghanistan's stability directly impacts India's security, particularly in addressing cross-border terrorism and threats from groups like **Jaish-e-Mohammed (JeM)** and **Lashkar-e-Taiba (LeT)**.
- **Taliban-Pakistan Nexus:** A Taliban-dominated Afghanistan increases the risk of instability in Jammu and Kashmir.

Challenges in Maintaining the Relationship

- **Taliban-Sponsored Terror Activities:** Afghanistan could re-emerge as a terrorist hub, threatening Indian-administered Kashmir's stability.
- **Threats to Indian Investments:** Developmental projects such as the Salma Dam and Zaranj-Delaram Highway face risks under the Taliban.

- **Pakistan's Influence:** The Taliban's ties with Pakistan undermine Indian interests and could dictate Afghanistan's policy toward India.
- **China's Expanding Role:** China's active engagement with the Taliban could marginalize India's influence in the region.
- **Humanitarian and Connectivity Challenges:**
    - Taliban rule has triggered a humanitarian crisis, undermining progress in human rights.
    - India lacks direct land access to Afghanistan, relying heavily on air corridors and Chabahar.

Way Forward

- **Engage Regional Stakeholders:** Collaborate with Pakistan and China to ensure regional stability and leverage platforms like the **Shanghai Cooperation Organization (SCO)** for coordinated efforts. Strengthen ties with Central Asian nations for connectivity and counter-terrorism initiatives.
- **Direct Engagement with the Taliban:** Initiate dialogue with moderate Taliban factions to safeguard investments and promote stability. Trust-building through developmental aid and humanitarian assistance can be prioritized.
- **Leverage Soft Power:** Expand scholarships, cultural exchanges, and people-centric initiatives like cricket diplomacy. Continue humanitarian assistance, including food and medical aid.
- **Enhance Connectivity:** Develop Chabahar Port as a trade hub with Afghanistan and Central Asia while exploring alternative routes to bypass Pakistan's restrictions.
- **Strengthen Security:** Focus on intelligence-sharing, counter-terrorism cooperation, and military preparedness to address emerging threats from terrorism.
- **Independent Afghan Policy:** Formulate a strategy free from external pressures, emphasizing India's strategic and developmental goals in Afghanistan.

Afghanistan's stability is vital for India's strategic, economic, and security interests. Despite challenges posed by the Taliban's resurgence and regional rivalries, India's historical ties and investments provide a strong foundation for engagement. By adopting a pragmatic approach, including soft power diplomacy, regional partnerships, and direct engagement with Afghanistan's leadership, India can safeguard its interests while contributing to Afghanistan's development.

13. UGC DRAFT GUIDELINES 2025 FOR VC AND TEACHER APPOINTMENTS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > > Social Justice > Education > Universities

REFERENCE NEWS:

- States have strongly opposed the UGC (Minimum Qualifications for Appointment and Promotion of Teachers and Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education) Regulations, 2025, alleging that they **undermine federal principles** by **expanding the Governor's role (Chancellor in most states) in Vice Chancellor (VC) appointments**, thereby reducing state control.
- These regulations aim to streamline and enhance the appointment process in line with the objectives of the National Education Policy (NEP) 2020.

KEY FEATURES OF THE NEW GUIDELINES:

Vice Chancellor (VC) Appointments:

- **Search-cum-Selection Committee Composition:**
  - The regulations specify a **three-member committee** comprising:
    - A nominee of the Chancellor/Visitor (Chairperson).
    - A nominee of the UGC Chairperson.
    - A nominee of the university's apex body (e.g., Senate, Syndicate, Executive Council).
- **Expanded Eligibility Criteria:**
  - Individuals with at least ten years of senior-level experience **in industry, public administration, public policy, or public sector undertakings**, coupled with a proven track record of significant academic or scholarly contributions, are now eligible for the position of Vice Chancellor.

- **Alignment with NEP 2020:** The guidelines emphasize leadership, governance, and collaboration skills for appointed VCs, aligning with the objectives of the National Education Policy 2020.

Teacher Recruitment:

- **Holistic Selection Approach:**
  - The new guidelines discontinue the Academic Performance Indicator (API)-based shortlisting from the 2018 regulations, which relied on quantitative metrics. Instead, **a qualitative, holistic approach** is introduced, focusing on:
    - Innovation in teaching.
    - Societal contributions.
    - Promotion of Indian knowledge systems.
    - Multidisciplinary expertise.
- **Flexibility in UGC-NET/ Academic Flexibility::**
  - Candidates Candidates can qualify for faculty positions based on their performance in the UGC National Eligibility Test (NET), **even if their undergraduate and postgraduate degrees are in different disciplines**. This change facilitates a multidisciplinary ecosystem within university campuses, as envisioned in the National Education Policy (NEP) 2020.
- **Removal of Cap on Contract-Based Faculty:**
  - The previous 10% cap on contract-based appointments has been removed, but rigorous selection processes and periodic reviews are mandated to ensure quality.
- **Promotion of Indian Languages and Cultural Heritage:**
  - The guidelines encourage academic work in regional languages and contributions to Indian knowledge systems.
- **Alignment with NEP 2020:** The guidelines aim to break down disciplinary silos and encourage interdisciplinary teaching and research, focusing on enhancing quality, inclusivity, and innovation in higher education.

Existing Process for Appointment of Vice Chancellors

- **Central Universities**:
  - Governed by an Act of Parliament.
  - The President of India, as Visitor, appoints the VC based on recommendations of a search-cum-selection committee.
  - Composition: Two nominees of the Executive Council and one nominee of the Visitor.
- **State Universities**:
  - Governed by state laws.
  - Appointment process varies but generally involves a search-cum-selection committee constituted as per state regulations.
  - UGC Chairperson nominates one member for the committee.
- **Private Universities**:
  - Similar process, with the UGC Chairperson nominating one member.

STATE-CENTRE DISPUTES OVER VC APPOINTMENTS

- **Kerala**:
  - Criticized the regulations for undermining state rights.
  - Assembly passed a Bill in 2023 to replace the Governor with educationists as Chancellors of state universities; awaiting Presidential assent.
- **West Bengal**:
  - Dispute over Governor's unilateral appointment of interim VCs in 2023 led to SC intervention, which formed independent search committees.
  - The state passed a Bill to replace the Governor with the Chief Minister as Chancellor; awaiting Governor's assent.
- **Tamil Nadu**:
  - Passed Bills in 2022 to allow state government control over VC appointments; these were not approved by the Governor.
  - Accused the Centre of using the UGC regulations to centralize control.

- **Karnataka**:
    - December 2024: State Assembly passed a Bill to replace the Governor with the Chief Minister as Chancellor of a state university. The decision is yet to receive assent.
    - Planned broader reforms to amend the Karnataka State Universities Act.
- **Maharashtra**:
    - Under the Uddhav Thackeray government, a Bill to limit the Governor's role in VC appointments was passed in 2021 but stalled under the succeeding administration.

SIGNIFICANCE OF THE UGC DRAFT REGULATIONS 2025

- **Enhancing Transparency and Standardization:**
    - The regulations introduce a **clearly defined process** for appointing Vice Chancellors (VCs) and teachers, reducing ambiguities from the 2018 guidelines.
    - The **Search-cum-Selection Committee** composition ensures standardized procedures across universities, promoting fairness and consistency in appointments.
- **Expanding Eligibility for Leadership Roles:**
    - The inclusion of **professionals from industry, public administration, public policy, and public sector undertakings** with proven academic contributions in the eligibility criteria for Vice Chancellor (VC) appointments aims to diversify leadership in higher education.
    - This change seeks to bring varied professional expertise into university administration, aligning with global practices.
- **Promoting Multidisciplinary and Holistic Approaches:**
    - By allowing candidates to qualify for UGC-NET in subjects unrelated to their degree discipline, the guidelines encourage **multidisciplinary expertise**.
    - The discontinuation of the **Academic Performance Indicator (API)** system shifts focus from quantitative metrics to a more **qualitative evaluation**, emphasizing:
        - Innovation in teaching.

- Societal contributions.
- Promotion of Indian knowledge systems.

- **Alignment with NEP 2020:**
  - The regulations align with the **National Education Policy (NEP) 2020**, focusing on:
    - Breaking down disciplinary silos.
    - Encouraging interdisciplinary teaching and research.
    - Fostering inclusivity and innovation in higher education.
- **Empowering Regional and Cultural Identity:**
  - Emphasis on **Indian languages** and **regional contributions** encourages academic work in regional languages, fostering cultural heritage and inclusivity.
  - This approach strengthens local knowledge systems and promotes the global relevance of India's cultural and academic heritage.

CONCERNS:

- **Undermining Federalism:**
  - States argue that the regulations **undermine their autonomy** by centralizing power in the hands of Governors (Chancellors) and the UGC.
  - By giving the **Search-cum-Selection Committee** a majority of nominees from the Chancellor and UGC, the regulations reduce the role of state governments in appointing VCs, violating the principles of federalism.
  - Critics, including leaders from Kerala, Tamil Nadu, and West Bengal, view this as an **assault on state rights** over higher education governance.
- **Centralization of Authority:**
  - The expanded powers of Governors, who act as representatives of the Centre, raise concerns about **politicization** of higher education appointments.
  - The regulations are seen as a move toward **centralized control**, limiting the ability of states to address local academic and administrative needs effectively.

- **Risk of Politicization in Leadership:**
  - Including professionals from **industry, public administration, and public policy** in the eligibility criteria for VCs raises fears of **political appointees** or individuals without sufficient academic expertise assuming leadership roles.
  - Academicians worry this could dilute the academic focus of universities and compromise the quality of higher education governance.
- **Reduced Focus on Regional Contexts:**
  - The emphasis on standardizing processes may ignore **regional needs** and **diverse academic ecosystems**, which vary widely across states.
  - For instance, state-run universities often cater to local linguistic and cultural contexts, which could be marginalized under a more centralized framework.
- **Potential Impact on Academic Freedom:**
  - Critics argue that the regulations could **curtail academic freedom** by centralizing decision-making, potentially stifling innovative or locally relevant initiatives.
  - The increased influence of central nominees in university governance could lead to **bureaucratization** and hinder flexibility in academic policies.

WAY FORWARD:

- **Inclusive Consultation Process:** The UGC should actively engage with state governments, academic institutions, and other stakeholders to gather diverse perspectives. This collaborative dialogue can help in refining the regulations to address specific concerns while maintaining the overarching goals of transparency and quality.
- **Respect for Federal Structure:** Recognizing education as a subject in the Concurrent List, it's crucial to ensure that both central and state governments have a meaningful role in the appointment process. This can be achieved by allowing states to have significant representation in the Search-cum-Selection Committees, thereby preserving the spirit of cooperative federalism.
- **Clear Eligibility Criteria:** While expanding the pool of eligible candidates for VC positions to include professionals from various fields is a progressive step, it's imperative to establish clear and stringent criteria. This ensures that appointees possess the necessary academic and administrative expertise to lead educational institutions effectively.
- **Safeguards Against Politicization:** To prevent the potential politicization of appointments, the selection process should be transparent, merit-based, and insulated from external pressures. Establishing independent oversight mechanisms can help in maintaining the integrity of the process.
- **Periodic Review and Feedback Mechanism:** Implementing a system for regular review of the regulations, with feedback from all stakeholders, will allow for adjustments based on practical experiences and evolving educational needs. This dynamic approach ensures that the regulations remain relevant and effective over time.

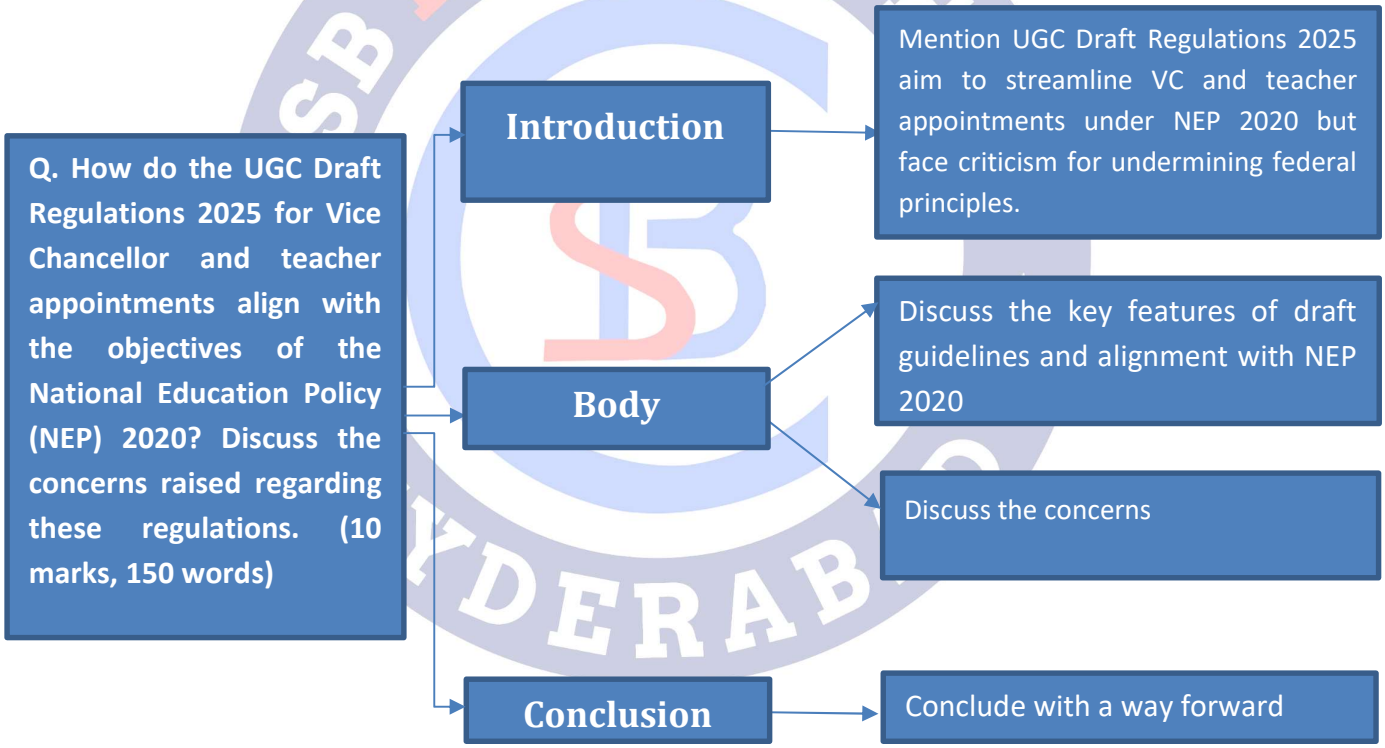
CONCLUSION

- The UGC Draft Regulations 2025 aim to improve higher education governance but must address concerns about federalism and centralization. A collaborative, balanced approach that respects state autonomy and ensures transparency can help achieve their goals while preserving India's diverse educational framework.

PRACTICE QUESTION

Q. How do the UGC Draft Regulations 2025 for Vice Chancellor and teacher appointments align with the objectives of the National Education Policy (NEP) 2020? Discuss the concerns raised regarding these regulations. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The UGC Draft Regulations 2025, aimed at streamlining Vice Chancellor (VC) and teacher appointments, have sparked concerns over federal principles and state autonomy. While these regulations align with the National Education Policy (NEP) 2020 by promoting transparency, quality, and inclusivity, states allege that the expanded role of Governors in VC appointments undermines their control over higher education governance.

Key Features of the New Guidelines

1. **VC Appointment Process**:
    - A three-member Search-cum-Selection Committee includes nominees from the Chancellor, UGC Chairperson, and the university's apex body.
    - Eligibility expanded to professionals with 10+ years of senior-level experience in industry, public administration, or public policy.
2. **Teacher Recruitment**:
    - Holistic evaluation focuses on innovation, societal contributions, and the promotion of Indian knowledge systems.
    - Flexibility in UGC-NET allows multidisciplinary candidates to qualify.
    - Removal of the 10% cap on contract-based appointments, ensuring quality through rigorous reviews.

Alignment with NEP 2020 Objectives

1. **Transparency and Standardization**: Clear processes for VC and teacher appointments reduce ambiguities, ensuring fairness and consistency in alignment with NEP's meritocratic ideals.
2. **Fostering Multidisciplinary Expertise**: Allowing candidates to qualify for UGC-NET in unrelated disciplines promotes interdisciplinarity, a core focus of NEP 2020.
3. **Holistic Academic Evaluation**: The move from API-based shortlisting to qualitative evaluation emphasizes innovation in teaching, societal contributions, and the integration of Indian knowledge systems.
4. **Regional and Cultural Inclusivity**: Encouraging academic work in Indian languages strengthens cultural heritage and inclusivity, aligning with NEP's vision of promoting India's diverse intellectual traditions.
5. **Breaking Disciplinary Silos**: By promoting interdisciplinary research and teaching, the guidelines support NEP's goal of creating globally competitive higher education institutions.

Concerns Raised

1. **Undermining Federalism**: Centralizing power with Governors and the UGC reduces state autonomy in appointing VCs, sparking resistance from states like Kerala, Tamil Nadu, and West Bengal.
2. **Centralization of Authority**: The dominance of central nominees in university governance raises concerns about potential politicization and neglect of regional needs.

3. **Dilution of Academic Expertise**: Expanding eligibility to professionals from non-academic sectors risks compromising the academic leadership focus in universities.
4. **Impact on Academic Freedom**: Centralized decision-making could hinder local innovation and reduce flexibility in institutional policies.
5. **Marginalization of Regional Contexts**: Standardized processes may overlook the diverse linguistic and cultural ecosystems of state universities.

Way Forward

- **Engage Stakeholders**: Foster dialogue between the UGC, state governments, and academic institutions to address concerns.
- **Respect Federal Principles**: Ensure states have significant representation in appointment committees to uphold cooperative federalism.
- **Safeguard Academic Focus**: Set stringent criteria to ensure appointees possess strong academic and administrative credentials.
- **Prevent Politicization**: Establish independent oversight mechanisms for transparent, merit-based appointments.
- **Periodic Review**: Regularly evaluate the regulations to adapt to evolving educational needs.

Conclusion

The UGC Draft Regulations 2025 align with NEP 2020 by promoting transparency, interdisciplinarity, and inclusivity in higher education. However, concerns over federalism and academic freedom need urgent attention. A consultative, balanced approach that respects state autonomy while ensuring quality and inclusivity will help achieve the intended goals of these regulations.

14. ISRAEL-HAMAS CEASEFIRE AGREEMENT

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations > India and Global Regions > India & West Asia

REFERENCE NEWS:

- The recent Israel-Hamas ceasefire agreement, mediated by Qatar, the U.S., and Egypt, marks a significant breakthrough in the 15-month-long conflict that began with Hamas's attack on Israel on October 7, 2023. The deal focuses on ending hostilities, facilitating the exchange of hostages and prisoners, and delivering humanitarian aid to Gaza. It is the first major pause since November 2023 but remains fragile, with several critical issues still unresolved.

OVERVIEW OF THE AGREEMENT:

The deal outlines three main phases:

Phase 1 (42 Days):

- **Hostage and Prisoner Exchange:**
  - Hamas will release 33 Israeli hostages, including women, children, and elderly individuals.
  - Israel will release between 900 and 1,650 Palestinian detainees, including all arrested since October 7, 2023. At least 250 of these are serving life sentences.
- **Military Withdrawals:**
  - The Israel Defense Forces (IDF) will withdraw from central Gaza, including the Netzarim Corridor, which had effectively divided Gaza.
  - Plans for eventual withdrawal from the Philadelphi Corridor, along the Gaza-Egypt border, are included.
- **Humanitarian Relief:**
  - Up to 600 aid trucks, including 50 carrying fuel, will be allowed daily into Gaza.

- Essential services such as electricity and healthcare will resume, along with rubble clearance and support for displaced individuals.

Phase 2:

- Negotiations begin on the 16th day, aiming for a **full Israeli withdrawal from Gaza**.
- Release of all remaining hostages in exchange for additional Palestinian detainees.

Phase 3:

- Full reopening of border crossings.
- Long-term reconstruction of Gaza with international oversight.
- Exchange of the bodies of deceased individuals from both sides.

SIGNIFICANCE OF THE AGREEMENT

- **Humanitarian Relief and Reconstruction**:
  - The ceasefire facilitates the **entry of substantial humanitarian aid into Gaza**, addressing the dire needs of its residents.
  - The agreement allows for the daily **entry of 600 aid trucks**, including 50 carrying fuel, and the resumption of essential services like electricity and healthcare. This initiative aims to **alleviate the severe humanitarian crisis** exacerbated by the conflict.
- **Hostage and Prisoner Exchange**:
  - A critical component of the deal is the **exchange of hostages and prisoners**. Hamas has committed to releasing 33 Israeli hostages, including women, children, and the elderly, while Israel will release between 900 and 1,650 Palestinian detainees, encompassing those detained since October 7, 2023. This exchange is a significant **step towards building trust between the conflicting parties.**
- **Strategic Military Adjustments**:
  - The agreement outlines a phased withdrawal of Israeli Defense Forces (IDF) from key areas in Gaza, including the Netzarim and Philadelphi Corridors.
  - This move is expected to reduce immediate tensions and pave the way for more comprehensive peace talks. However, the complete withdrawal is contingent upon the successful implementation of subsequent phases of the agreement.

Implications for India

India has welcomed the ceasefire, expressing hope that it will lead to a safe and sustained supply of humanitarian assistance to the people of Gaza. The Ministry of External Affairs stated, "We have consistently called for the release of all hostages, ceasefire, and **return to a path of dialogue and diplomacy**."

The ceasefire holds particular significance for India in several ways:

- **Economic Interests**:
    - Stability in the Middle East is crucial for **India's energy security**, as a significant portion of its oil imports come from this region. For instance, **70% of India's imported energy comes from West Asia.**
    - A cessation of hostilities ensures **uninterrupted energy supplies** and fosters a conducive environment for trade and investment.
- **Diaspora Safety**:
    - The Middle East is home to **over 8 million Indian expatriates**. Peace and stability in the region are paramount for the safety and well-being of these individuals.
- **Geopolitical Strategy**:
    - As a nation advocating for peaceful resolution of conflicts, India's support for the ceasefire aligns with its broader foreign policy objectives. Engaging in diplomatic efforts to maintain **peace in the Middle East enhances India's standing as a responsible global player.**
- **Freedom of navigation:**
    - The middle hosts the most important **choke point in global sea trade**- The **Suez Canal.** Any instability in the region can result in severe disruption of global trade.
    - Peace and stability in the region is also vital for promoting India's connectivity to Central Asian and Eastern European markets. Eg: **India's International North South Transit Corridor project.**

CHALLENGES AND CONCERNS

- **Trust Deficit:**

- The deep mistrust between Israel and Hamas raises concerns about the sustainability of the ceasefire. Both parties have accused each other of violating previous agreements, making the current truce vulnerable to breakdowns.
- **"In the unpredictable and volatile Middle East, nothing is certain until it actually happens,"** aptly captures the precarious nature of this agreement.

- **Possibility of Resumed Hostilities:**
  - While both sides have agreed to cease military operations, sporadic violence could reignite tensions. Questions remain about whether external actors like **Hezbollah or radical Palestinian factions** will respect the ceasefire or attempt to undermine it.
- **IDF Withdrawal:**
  - Although Israel has committed to withdrawing from central Gaza and the Netzarim and Philadelphi Corridors, concerns remain about whether these withdrawals will be fully realized or delayed by operational and political conditions. Israeli officials have suggested that the withdrawal from the Philadelphi Corridor is conditional, adding uncertainty to the process.
- **Prisoner Release Legal Hurdles:**
  - The release of at least 250 Palestinian prisoners serving life sentences challenges Israel's 2014 law, which prevents such releases. This may lead to legal challenges and public backlash, potentially delaying the swap agreement.
- **Hostage Exchange Complexity:**
  - Hamas's commitment to releasing all remaining Israeli hostages depends on negotiations in later phases, creating uncertainty about whether all hostages will be returned.
- **Role of External Actors:**
  - The broader **"axis of resistance" supported by Iran, including Hezbollah in Lebanon and the Houthis in Yemen,** may undermine the ceasefire. Their involvement could escalate regional instability and drag other players into the conflict.
  - Egypt and Qatar, while mediators, have limited influence over more radical elements within Gaza.

- **Palestinian Authority's Role:**
    - The agreement excludes any mention of the Palestinian Authority (PA) returning to Gaza, leaving Hamas as the primary governing force. This complicates long-term governance, as the PA has not set foot in Gaza since Hamas's takeover in 2007.
    - The intra-Palestinian divide remains a significant obstacle to creating a unified political solution.
- **Reconstruction of Gaza:**
    - Gaza's infrastructure has been devastated, with over 46,000 Palestinians killed and 1.9 million displaced. Plans for reconstruction depend heavily on international oversight and funding. However, ensuring that aid is not diverted to military purposes poses a challenge.
- **Civilian Resentment and Trauma:**
    - The brutality of the conflict has generated intense hatred and personal animosity on both sides, making reconciliation and trust-building difficult.
- **Israel's Internal Divisions:**
    - Prime Minister Benjamin Netanyahu faces opposition from his far-right allies, who view the prisoner exchange and partial withdrawal as concessions to Hamas. Itamar Ben-Gvir's admission that his bloc can no longer block such agreements highlights the shifting political dynamics but also the potential backlash Netanyahu may face domestically.
- **Hamas's Internal Struggles:**
    - Hamas has suffered severe leadership losses, including the deaths of key figures such as Yahya Sinwar and Ismail Haniyeh. While this weakens the group's military capabilities, it could also create internal power struggles and complicate adherence to the agreement.
- **Uncertain Second and Third Phases:**
    - The agreement's success hinges on the smooth transition to subsequent phases, including a formal ceasefire, the release of remaining hostages, and Gaza's reconstruction. Any delay or failure in these phases could derail the entire process.

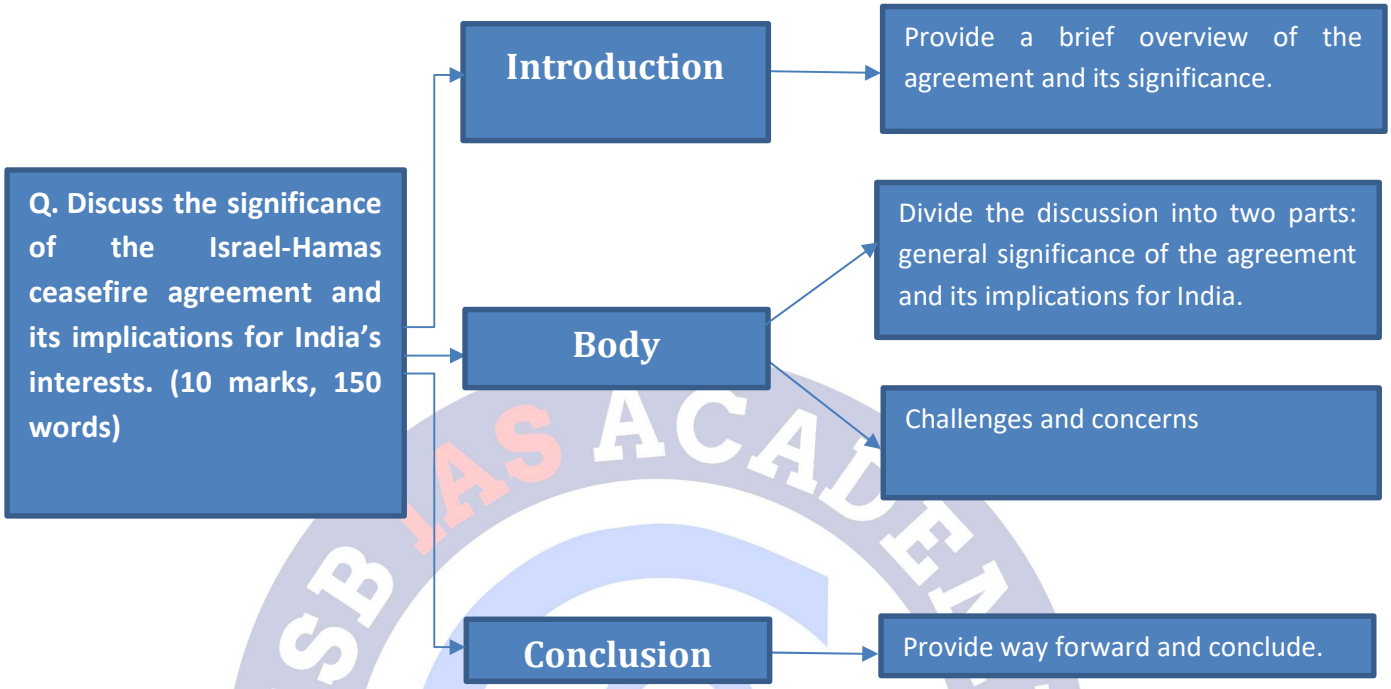
WAY FORWARD:

- **Diplomatic Engagement**: Facilitate continuous dialogue between Israel and Hamas, supported by mediators like Qatar, Egypt, and the U.S., to ensure adherence to the ceasefire.
- **Governance in Gaza**: Engage stakeholders, including the Palestinian Authority and Hamas, to establish a stable governance model for Gaza.
- **Monitoring Mechanisms**: Deploy international observers or peacekeeping forces to oversee the ceasefire and reduce violations.
- **Humanitarian Aid and Reconstruction**: Coordinate international efforts to deliver aid and rebuild Gaza's infrastructure with oversight to prevent diversion of resources.
- **Addressing Root Issues**: Tackle the conflict's underlying causes through comprehensive peace talks, focusing on territorial disputes, security concerns, and a two-state solution.
- **Global and Regional Roles**: Encourage regional powers and organizations to actively support peace processes and maintain momentum for long-term stability.
- **Humanitarian Support**: Provide medical aid and technical expertise for Gaza's reconstruction, leveraging India's experience in disaster recovery.
- **Economic Stability**: Ensure Middle East stability to protect India's energy imports and foster better trade opportunities.
- **Diaspora Safety**: Safeguard the well-being of over 8 million Indian expatriates in the Middle East through regional peace.
- **Geopolitical Influence**: Promote a two-state solution at multilateral forums to enhance India's global standing as a neutral mediator.
- **Counterterrorism**: Support efforts to counter extremism and prevent regional instability, aligning with India's security interests.

PRACTICE QUESTION

Q. Discuss the significance of the Israel-Hamas ceasefire agreement and its implications for India's interests. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The recent Israel-Hamas ceasefire agreement, **mediated by Qatar, the U.S., and Egypt**, aims to **end the 15-month-long conflict** that began with Hamas's attack on October 7, 2023. The agreement is significant as it **addresses humanitarian concerns, facilitates hostages and prisoners' exchange, and includes provisions for reconstruction in Gaza**. It also underscores regional stability efforts, with implications for India's energy, diaspora, and geopolitical interests.

Significance of the Agreement

1. **Humanitarian Relief**:
    - The agreement facilitates substantial humanitarian aid, with 600 trucks entering Gaza daily, restoring essential services like electricity and healthcare, and providing for rubble clearance and displaced individuals.
    - This initiative addresses the severe humanitarian crisis exacerbated by the conflict.
2. **Hostage and Prisoner Exchange**:

- Hamas will release 33 Israeli hostages, while Israel will release up to 1,650 Palestinian detainees, including 250 serving life sentences.
- The exchange builds trust and demonstrates a willingness to negotiate despite long-standing tensions.

3. **Strategic Military Adjustments**:
   - The phased withdrawal of IDF from central Gaza, including the Netzarim and Philadelphi Corridors, reduces immediate hostilities and paves the way for comprehensive peace talks.
4. **Regional Stability**:
   - The ceasefire represents a significant pause in violence, creating opportunities for international stakeholders to address deeper geopolitical tensions.

Implications for India:

1. **Economic Interests**: Stability in the Middle East ensures uninterrupted energy imports, vital for India's energy security, as 70% of India's energy comes from the region.
2. **Diaspora Safety**: The Middle East is home to over 8 million Indian expatriates whose safety depends on peace in the region.
3. **Geopolitical Strategy**: India's balanced relations with Israel and Palestine enable it to advocate for dialogue and a two-state solution, enhancing its role as a global mediator.
4. **Trade and Connectivity**: Stability promotes trade via key chokepoints like the Suez Canal and facilitates projects like the International North-South Transit Corridor.

Challenges and Concerns

1. **Trust Deficit**: Both sides have a history of violating ceasefires, making sustainability a concern.
2. **Hostage and Prisoner Complexities**: Future phases depend on Hamas releasing all remaining Israeli hostages, which could face delays or non-compliance.
3. **IDF Withdrawal Uncertainty**: Israel's conditional withdrawal from the Philadelphi Corridor creates ambiguity about the agreement's implementation.
4. **External Actors**: Groups like Hezbollah and Iranian-backed factions could undermine the ceasefire.

5. **Reconstruction Oversight**: Ensuring aid reaches those in need without diversion to military purposes is challenging.
6. **Intra-Palestinian Tensions**: The Palestinian Authority's exclusion from governance in Gaza complicates long-term political solutions.

Way Forward

- **Diplomatic Engagement**:Facilitate continuous dialogue between Israel and Hamas, with international mediators ensuring accountability.
- **Strengthen Governance**:Involve the Palestinian Authority and other stakeholders in Gaza's governance to promote unity and stability.
- **International Oversight**:Deploy international monitors or peacekeeping forces to ensure compliance with the ceasefire.
- **Reconstruction and Aid**:Coordinate global efforts to rebuild Gaza's infrastructure with strict oversight to prevent misuse of aid.
- **Address Root Causes**:Initiate comprehensive peace talks addressing territorial disputes, security, and mutual recognition to pave the way for a two-state solution.
- **India's Role**:
    - Extend humanitarian aid to Gaza and support reconstruction.
    - Advocate for regional stability to ensure uninterrupted energy imports and trade routes.
    - Leverage India's neutral position to mediate and promote a long-term resolution.

The Israel-Hamas ceasefire is a crucial step toward ending hostilities and addressing humanitarian concerns. While the agreement has the potential to stabilize the region and pave the way for peace, it faces significant challenges, including trust deficits, external interferences, and political complexities. By addressing these issues through sustained diplomacy, international cooperation, and effective oversight, the ceasefire could evolve into a foundation for lasting peace. India's active engagement in humanitarian support and mediation efforts can enhance its strategic and global standing while ensuring stability in a region critical to its interests.

15. JUDICIAL PENDENCY

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity > Judiciary > Judicial System

REFERENCE NEWS:

- Recently, the Supreme Court suggested the appointment of ad-hoc judges in high courts to deal with the **huge pendency of criminal appeals.**

MORE ON NEWS:

- A special bench comprising Chief Justice Sanjiv Khanna and Justices B.R. Gavai and Surya Kant referred to the data on the pendency of criminal cases in several high courts and said in **Allahabad High Court** alone there were **63,000 criminal appeals pending.**
- The CJI said in the Jharkhand High Court the figure stood at 13,000, and similarly, 20,000, 21,000, 8,000, and 21,000 criminal cases were pending in high courts in Karnataka, Patna, Rajasthan, and Punjab and Haryana, respectively.
- The bench discussed modifying its **2021 judgment**, which permitted the appointment of retired high court judges as ad-hoc judges under **Article 224A of the Constitution**. The proposed modification aims to ensure ad-hoc judges focus solely on criminal appeals, working alongside sitting judges in division benches.

Key Points from the Supreme Court's Observations:

- **Appointment Condition**: Ad-hoc judges should only be appointed if the high court operates below **80% of its sanctioned judge strength**.
- **Simplified Procedure**: The earlier **2021 judgment** recommended a process for appointing ad-hoc judges but was deemed cumbersome. The court emphasized adopting a simpler, more practical method.
- **Role of Ad-hoc Judges**: They will adjudicate criminal appeals as part of division benches presided over by sitting high court judges.

Background:

- The **2021 judgment** directed that retired judges could serve as ad-hoc judges for **two to three years** to clear pending cases.
- Under **Article 224A**, a **Chief Justice of a high court can request retired judges to act as judges with the President's consent.**
- The court previously laid out guidelines on triggering appointments, tenure, salaries, and roles of ad-hoc judges.

STATISTICS:

- As of January 2025, the **Supreme Court of India has 82,922 pending cases**, with 64,687 (78%) being civil matters and 18,235 (22%) criminal cases. (Source: National Judicial Data Grid (NJDG))
- As of September 15, 2021, **over 4.5 crore cases** were pending across all courts in India. Of these, **87.6% cases were pending in subordinate courts** and **12.3% in High Courts**. (Source: PRS Legislative Research).
- Between 2010 and 2020, **pendency across all courts grew by 2.8% annually**. (Source: PRS Legislative Research).

Note: 2021 data for the Supreme Court is as of September 4, 2021. 2021 data for High Courts and subordinate courts is as of September 15, 2021.
Source: PRS Legislative Research

WHAT ARE THE REASONS FOR PENDENCY?

- **Vacancies in the judiciary:**

As of May 2024, the Indian judiciary has notable vacancies: the **Supreme Court has two vacancies** out of 34 sanctioned positions, and High Courts have 345 vacancies out of 1,114 sanctioned posts, representing **31% of the total**(Source: Ministry of Law and Justice). These vacancies contribute to case backlogs and delays in the judicial system.

- **Low judge to population ratio:**

The **judge-population ratio** in the country which stands at only **21.03 judges per million people in 2020**(Source: Ministry of Law and Justice)**,** which is not very appreciable.

While for the other countries, the ratio is about **50-70 judges per million people.**

- **Process of law:**

The proceedings of cases are so lengthy that people wait years for justice, resulting in numerous hearings and frequent adjournments that frustrate victims. Accused individuals often exploit the legal system to their benefit, prolonging proceedings intentionally.

Luxurious Litigation Phenomenon: As described by CJI NV Ramana, 'luxurious litigation' refers to parties with resources frustrating and delaying the judicial process by filing numerous proceedings.

Culture of Adjournments: According to former President Ram Nath Kovind in 2018, there is a prevailing culture of seeking adjournments as the norm, which hampers swift justice.

Appeals and Case Backlog: The system allows multiple appeals, where parties can challenge lower court decisions in higher courts, often leading to increased backlogs in state High Courts due to frequent, financially motivated appeals.

- **Lack of infrastructure:**

Former Chief Justice of India, **Dipak Mishra**, highlighted that inadequate court infrastructure for judges, litigants, and staff is a primary cause of case pendency.

Poor funding on lower courts: There is a disparity in funding; higher courts receive more infrastructure investment while subordinate courts operate in inadequate conditions, lacking basic facilities.

Insufficient courts: The judiciary's budgetary allocation is only 0.1% to 0.4% of the total budget, insufficient to expand the number of courts or modernize existing ones.

- **Lags in adoption of technology:**

The Indian judiciary's digitalization was accelerated by COVID-19's physical distancing measures. However, the integration of technologies like machine translation, speech recognition, big data, machine learning, AI, and blockchain into the judicial process is still in its early stages.

- **Pendency and vacancies in tribunals and special courts:**

Tribunals and special courts (such as Fast Track Courts and Family Courts) which were set up **to ensure speedy disposal** of cases also **witness high pendency and vacancies.**

For instance, at the end of 2020**, 21,259 cases were pending before the National Company Law Tribunal (NCLT).** As of April 2021, the NCLT had **39 members out of a sanctioned strength of 63.**

As on May 31, 2021, over **9.2 lakh cases were pending in 956 Fast Track Courts across 24 states**/UTs (the remaining do not have functional Fast Track Courts).

Note: Data for 2021 is as on May 31, 2021. Source: PRS Legislative Research

- **High rate of filing of cases and low rate of disposal of cases:**

The backlog in subordinate courts is driven by rising case loads and low disposal rates, influenced by factors such as **limited judges, judge absenteeism, extended trials, lawyer strikes, and frequent judge transfers**. Additionally, socio-economic advancements and **increased legal awareness** have led more people to file cases, using tools like **Public Interest Litigations (PIL) and the Right to Information (RTI).**

- **Litigations from the government side:**

Reports indicate that **the government is a party to 46 per cent of the cases that are pending in courts across India.**

As per Legal Information Management and Briefing System (LIMBS), as of 21 June 2021 there are **514,915 cases involving various government departments.**

- **The archaic laws:**

The **archaic laws** that fill up the statute books, **faulty or vague drafting of law**s and **their multiple interpretations by various courts** are also reasons for prolonged litigation. Some of these **laws date back to the 1880s.**

- **Lack of awareness about the Alternative Dispute Resolution (ADR) Mechanisms:**

Less use and awareness of Alternative Dispute resolution**, Lok Adalat's, The Gram Nyayalayas act 2008, plea bargaining etc.** is one of the reasons for high pendency rate **due to over burden on courts**.

CONSEQUENCES OF PENDING CASES

- **Violation of fundamental rights:**

Speedy trial is a fundamental right:

- In **Kartar Singh vs State of Punjab case 1994**, it was declared that the **right to speedy trial** is an essential part of fundamental right to life and liberty **(Article 21).**

In criminal cases, the impact of pendency of case is **directly related to the violation of the right to equality** enshrined under **Article 14** of the Indian Constitution.

- Under Indian law, an accused is presumed innocent, with **bail being the norm and jail the exception.**
- Despite this, **NCRB's 'Prison Statistics India-2020'** shows over **75% of 4.83 lakh prisoners are undertrials**, meaning 3 out of 4 are in jail awaiting case resolution. This incarceration **damages their public reputation and curtails liberty**, even if they are eventually found not guilty.

- **Affects human rights :**

Overcrowding of the prisons, already infrastructure deficient, **results in violation of human rights. For instance,** according to the **National Crime Records Bureau (NCRB) 'Prison Statistics India-2020'**, Indian prisons are operating at an average **occupancy rate of 118.5%,** indicating that they are overcrowded beyond their capacity.

- **Impact on the economy:**

The Economic Survey 2017 pointed out that the s**low resolution of economic and commercial cases** was one of **the biggest stumbling blocks in reviving the investment cycl**e in the country.

Impact on 'ease of doing business':

India's ranking in the **'Enforcement of Contracts' indicator** of the Ease of Doing Business Index has remained relatively low. As of the last available report in 2020, India was **ranked 164th out of 190 countries.**

The problems that plague contract enforcement can be correlated with the **current state of the judiciary system with inordinate delays**.

Foreign investors are increasingly doubtful about the **timely delivery of justice**, which affects the success of **programs like 'Make in India'.**

- **Impact on Public Confidence in Justice:**

The common **man's faith in the justice system may get affected** due to delay in delivering the justice as a result of pendency in cases.

- **Corruptions increases**

Due to the increase in pendency of cases, **people many times don't fight for their rights or the wrongs caused to them.**Some **instead of fighting the wrong**, try to resolve the **matter outside the court in an illegal way** (e.g by bribing the police officer not to file an FIR against them.)

WAY FORWARD:

- **Increase Judicial Strength**:
  - Substantially increase the number of judges at the subordinate and higher levels to address the backlog of cases.
  - Expedite the recruitment process to fill existing vacancies in both high courts and subordinate courts.
  - Institutionalize an **All-India Judicial Service** (AIJS) to create a centralized cadre of district judges, recruited through a national examination.
- **Improve Judicial Infrastructure**:
  - Establish a **National Judicial Infrastructure Corporation** to ensure standardized and uniform development of court infrastructure across the country.
  - Prioritize modernization and expansion of court facilities, especially at the subordinate level, to improve access to justice.
- **Fill Vacancies**:
  - Ensure timely appointments of judges in high courts and subordinate courts to meet the increasing demand for judicial services.
  - Streamline the appointment process to reduce delays caused by bureaucratic hurdles.
- **Strengthen the Legal Framework**:
  - Repeal outdated and redundant laws to reduce unnecessary litigation.

- Implement recommendations of the **Malimath Committee** to update the Code of Criminal Procedure (CrPC), Indian Penal Code (IPC), and Indian Evidence Act to align with contemporary needs.

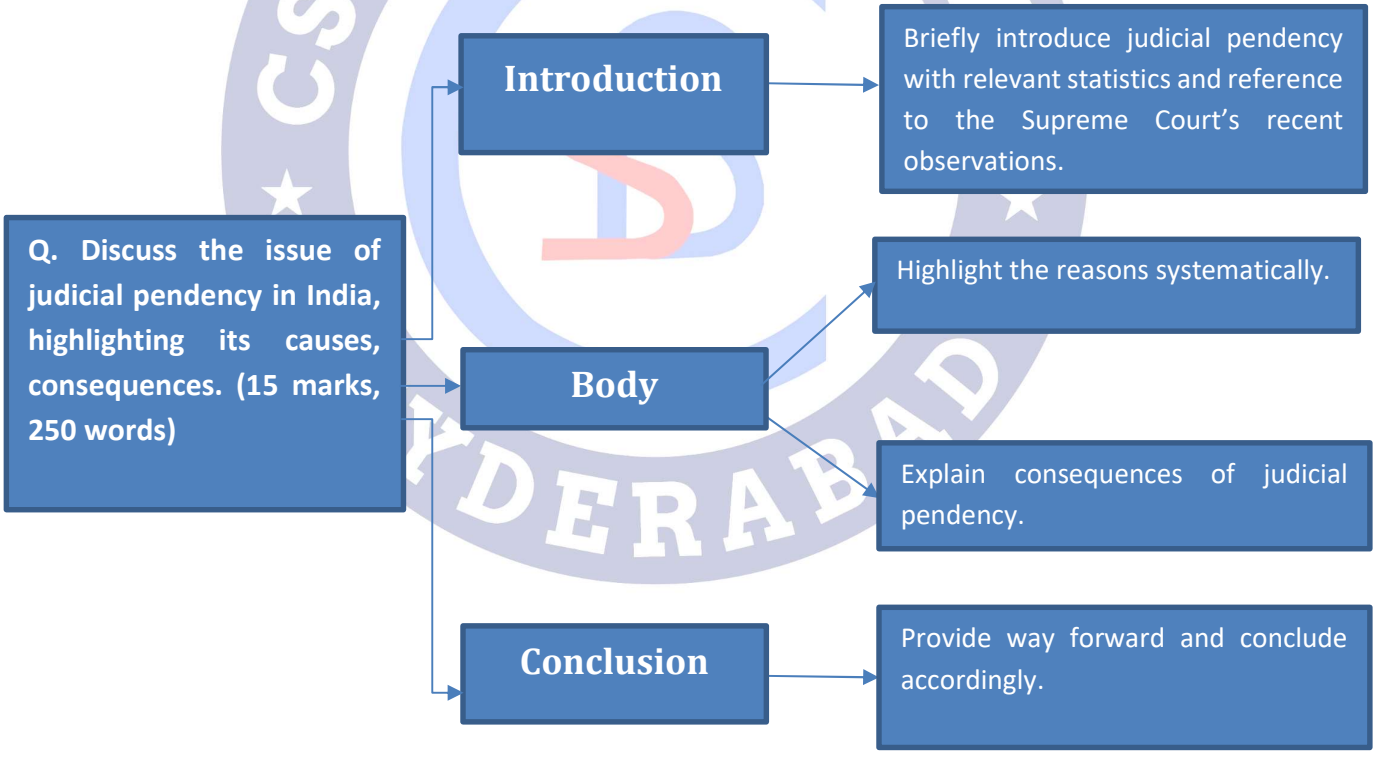
- **Promote Technology Integration**:
  - Accelerate the implementation of the **e-Courts Mission Mode Project** to digitize court processes, enable virtual hearings, and reduce dependency on physical court appearances.
  - Integrate advanced technologies like **Artificial Intelligence (AI)**, **machine learning**, and **big data** to streamline case management and automate routine tasks.
- **Establish Circuit Benches and Regional Supreme Court Benches**:
  - Set up **circuit benches** of the Supreme Court in different regions to reduce the burden on the principal bench in Delhi.
  - Establish a dedicated Supreme Court bench in southern India, as recommended by multiple Law Commissions and Bar Councils.
- **Promote Alternate Dispute Resolution (ADR)**:
  - Create awareness about **Alternative Dispute Resolution (ADR)** mechanisms, including mediation, arbitration, Lok Adalats, and Gram Nyayalayas, to encourage out-of-court settlements.
  - Institutionalize ADR mechanisms and integrate them into the judicial framework to reduce the caseload on traditional courts.
- **Tackle Government Litigations**:
  - The government, being the largest litigant, must adopt a **litigation policy** to minimize unnecessary litigation.
  - Ensure proper scrutiny of cases involving government departments to avoid frivolous appeals and repetitive cases.
- **Focus on Criminal Justice Reforms**:
  - Reduce the pendency of criminal cases by introducing **fast-track procedures** for serious cases.
  - Increase the use of plea bargaining and other mechanisms to resolve cases swiftly.

- **Remove Geographical Barriers**:
  - Strengthen the judiciary's outreach to rural and remote areas by increasing the number of **mobile courts** and circuit benches.
  - Facilitate access to justice for marginalized communities through improved legal aid services.

PRACTICE QUESTION

Q. Discuss the issue of judicial pendency in India, highlighting its causes, consequences. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Judicial pendency is a significant challenge in India's justice delivery system. As of **January 2025**, the Indian judiciary had **82,922 pending cases** in the Supreme Court, with **4.5 crore cases** pending across all courts as of 2021. Of these, **87.6% cases are pending in subordinate courts** and **12.3%**

in High Courts (PRS Legislative Research). The pendency of criminal appeals, particularly in High Courts, has reached critical levels, with **63,000 criminal appeals pending in Allahabad High Court**, as highlighted by the Supreme Court in **January 2025**.

Causes of Judicial Pendency

- **Vacancies in the Judiciary**:
  - As of **May 2024**, High Courts had **345 vacancies** (31%) out of 1,114 sanctioned posts.
  - The low **judge-to-population ratio** of **21.03 judges per million people** in 2020 exacerbates the issue compared to 50–70 judges per million in developed nations.
- **Process of Law**:
  - Lengthy proceedings with frequent adjournments delay justice.
  - **Luxurious litigation**, as noted by CJI NV Ramana, involves resourceful parties deliberately delaying cases through repeated filings.
- **Lack of Infrastructure**:
  - Poor facilities in subordinate courts hinder efficiency, with the judiciary receiving only **0.1%–0.4% of the total budget**.
- **Technology Deficit**:
  - Despite progress under the **e-Courts Mission Mode Project**, full integration of advanced technologies like **AI** and **blockchain** is lacking.
- **High Rate of Case Filing**:
  - Socio-economic changes, PILs, and RTIs have increased the volume of cases.
  - Government litigation constitutes **46% of pending cases**, further straining the system.
- **Archaic Laws**:
  - Outdated laws and vague drafting lead to prolonged litigation.
- **Pendency in Tribunals and Special Courts**:

- As of **2021**, **9.2 lakh cases** were pending in **956 Fast Track Courts**, and the **NCLT** had **21,259 pending cases** at the end of 2020.

Consequences of Judicial Pendency:

- **Violation of Fundamental Rights**:
  - The **right to a speedy trial** under **Article 21** is often violated due to delays, as seen in the backlog of criminal cases.
  - Over **75% of prisoners are undertrials** (NCRB Prison Statistics 2020), impacting their liberty and reputation even before being proven guilty.
- **Overcrowding in Prisons**:
  - Delayed case resolution leads to overcrowded prisons, with an average occupancy rate of **118.5%**, exacerbating infrastructure deficiencies and resulting in human rights violations.
- **Economic Implications**:
  - Judicial delays discourage investments and negatively impact India's **Ease of Doing Business** ranking, particularly in the "Enforcement of Contracts" category, where India ranked **164th in 2020**.
- **Erosion of Public Confidence**:
  - Delayed justice undermines trust in the judiciary, prompting individuals to resort to illegal settlements or alternative, and often unfair, methods for dispute resolution.
- **Impact on Social Justice**:
  - Marginalized communities, who rely on timely judicial intervention for protection and fairness, are disproportionately affected, further deepening inequalities.
- **Encouragement of Corruption**:
  - Pendency incentivizes corruption as people, frustrated by delays, resort to bribing officials or engaging in extrajudicial settlements to expedite processes.

Way Forward

- **Increase Judicial Strength**: Expedite recruitment to fill existing vacancies in High Courts and subordinate courts. Institutionalize the **All-India Judicial Service (AIJS)** to create a centralized cadre of judges.
- **Appoint Ad-Hoc Judges**: Implement the **Supreme Court's suggestion** under **Article 224A** to appoint ad-hoc judges in High Courts to address criminal appeal pendency. These judges should work in division benches with a sitting judge presiding, and the appointment process must be simplified for efficiency.
- **Improve Judicial Infrastructure**: Establish a **National Judicial Infrastructure Corporation** to modernize court facilities, especially in subordinate courts.
- **Strengthen the Legal Framework**: Repeal outdated laws and implement recommendations of the **Malimath Committee** to reform procedural laws.
- **Promote Technology Integration**: Accelerate digitization through the **e-Courts Mission Mode Project** and integrate **AI** for efficient case management.
- **Promote Alternate Dispute Resolution (ADR)**: Enhance awareness and use of ADR mechanisms like **mediation**, **Lok Adalats**, and **Gram Nyayalayas**.
- **Tackle Government Litigation**: Adopt a **National Litigation Policy** to minimize frivolous litigation by government departments.
- **Fast-Track Criminal Justice Reforms**: Prioritize the establishment of **Fast Track Courts** for serious criminal cases and promote plea bargaining.
- **Decentralize the Judiciary**: Establish **circuit benches** of the Supreme Court and a dedicated bench in southern India.

Judicial pendency is a multifaceted issue requiring systemic reforms. The Supreme Court's recent emphasis on appointing ad-hoc judges for criminal appeals is a critical step forward. However, a comprehensive approach addressing infrastructure, technology, vacancies, and procedural reforms is essential to ensure **speedy justice**, **uphold fundamental rights,** and restore public faith in the judiciary. Only through such efforts can India move toward an **efficient and equitable justice delivery system.**

16. 10 YEARS OF BETI BACHAO BETI PADHAO

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social Justice > Flagship schemes

REFERENCE NEWS:

- Marking 10 years of the Beti Bachao, Beti Padhao movement on **22nd January 2025**, Prime Minister Narendra Modi remarked that it had become a transformative, people-powered initiative and drawn participation from people across all walks of life.
- He highlighted that Beti Bachao, Beti Padhao was instrumental in **overcoming gender biases and empowering girl children.** Modi further noted that **districts with historically low child sex ratios have reported significant improvements** and complimented all stakeholders who have made this movement vibrant at the grassroots level.

BETI BACHAO BETI PADHAO:

- Beti Bachao Beti Padhao (BBBP) is a flagship initiative of the Government of India launched on **January 22, 2015**, by Prime Minister Narendra Modi in **Panipat, Haryana.**
- The scheme was introduced in response to the **declining Child Sex Ratio (CSR)** and to **promote gender equality and the empowerment of girls.**
- The scheme aims to educate citizens against gender bias and improve efficacy of welfare services for girls. It was launched with an **initial funding of Rs. 100 crore.**
- Initially planned for 100 districts, it was expanded to 61 additional districts in 2015-16 and later to **all 640 districts of the country.**
- **Objectives:**

The Beti Bachao Beti Padhao Yojana aims to achieve the following goals:

- Improve the child sex ratio
- Ensure gender equality and women empowerment
- Prevent gender-biased, sex selective elimination
- Ensure survival and protection of the girl child

- Encourage education and participation of the girl child

Overall, these can be classified into two key categories – **quantitative and qualitative.** The **quantitative objective is to address decline in child sex ratio** in the country and the **qualitative objective i**s to **inculcate awareness and change negative mindsets regarding female children.**

- **Ministries involved:**
  - It is a joint initiative of Ministry of Women and Child Development, Ministry of Health and Family Welfare and Ministry of Human Resource Development.

Need for Beti Bachao Beti Padhao Yojana:

- The scheme was launched after the **national census results for 2011** revealed detraction in key gender metrics – Child Sex Ratio (CSR) and Sex Ratio at Birth (SRB).
- CSR is defined as the number of girls per 1,000 boys aged 0-6 years. This ratio showcased a steady decline, **from 945 in 1999 to 927 in 2001, which declined further to 918 girls for every 1,000 boys in 2011.** Detailed evaluation of the decline showed that SRB was the principal factor.
- Dip in these ratios is a significant indicator of gender discrimination and women disempowerment, reflecting both **pre-birth discrimination through gender-biased, sex selective abortion and post-birth discrimination by neglecting health, nutrition, and educational needs of the girl child.**
- Research concluded that the strong **socio-cultural and religious preference for boys** was the root cause of the problem, and this provided impetus for launch of the BBBP initiative.

- **Scheme Details**
  - The scheme is divided into three components – **(1)** advocacy campaigns were launched to address the issue of declining CSR and SBR; **(2)** multi-sectoral interventions were planned and are being implemented in gender-critical districts across the country; and **(3) a financial incentive-linked scheme—Sukanya Samriddhi scheme**—was launched to encourage parents to build a fund for female children.

Sukanya Samriddhi Yojana Scheme (SSY)

SSY is a small deposit-saving scheme targeted at parents of girl children. The scheme provides parents with income tax rebate benefits and an attractive interest rate of 7.6% on

the deposits. It offers parents the option to open a savings account per girl child (under the age of 10 years) and allows parents to make deposits in the account for a period of 15 years. The girls can commence account operations at the age of 10 years and have the option of making withdrawals at the age of 18.

ACHIEVEMENTS OF BETI BACHAO BETI PADHAO (BBBP)

- **Improvement in Sex Ratio at Birth (SRB):**
  - The SRB has improved at the national level, indicating progress in reducing gender-biased sex selection and promoting gender equity.
  - According to the **Economic Survey (2023-24)**, based on data from the **Health Management Information System (HMIS)**, the national SRB improved from **918 girls per 1,000 boys (2014-15)** to **930 (2023-24, provisional)**.
  - The **Sample Registration System (SRS)** data confirms that the SRB rose from **898 (2014-16)** to **907 (2018-20)**.
  - **State-Level Examples (SRS Data, 2018-20):**
    - **Rajasthan:** Improved by **54 points**, from **857 to 911**, due to targeted awareness campaigns and stricter enforcement of the **Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act**.
    - **Haryana:** Improved by **38 points**, from **832 to 870**, following initiatives like the **"Selfie with Daughter" campaign** and the **Kanya Kosh Scheme**, which provided financial support for daughters.
- **Reduction in Gender Gap in Under-Five Child Mortality:**
  - The gender gap in under-five child mortality has narrowed, showing improved survival rates for girls.
  - For instance, in 2014, the under-five mortality rate was **49 per 1,000 live births for girls** and **42 for boys**, with a gender gap of **7 points**. By 2020, the rates decreased to **33 for girls** and **31 for boys**, reducing the gap to **2 points**.(Source: Sample Registration System report; and Women and Men in India, 2023)
- **Increase in Institutional Deliveries:**
  - The proportion of institutional deliveries has risen significantly, improving maternal and neonatal health outcomes.

- **National Progress (NFHS Data):** Institutional deliveries increased from **78.9% in 2015-16 (NFHS-4)** to **88.6% in 2019-21 (NFHS-5)**, reflecting a **9.7 percentage point** improvement.
- **State-Level Examples (NFHS-5 Data):**
  - **Arunachal Pradesh:** Recorded a **27 percentage point increase**, from **52.2% to 79.2%,** due to the development of rural health infrastructure.
  - **Haryana:** Increased by **14.5 percentage points**, from **80.4% to 94.9%**, benefiting from financial incentive schemes for institutional births.

- **Antenatal Check-ups in the First Trimester:**
  - There has been an increase in the number of mothers receiving antenatal care (ANC) in the first trimester, ensuring better maternal and neonatal health.
  - **National Progress (NFHS Data):** ANC in the first trimester rose from **58.6% in 2015-16 (NFHS-4)** to **70% in 2019-21 (NFHS-5)**.
  - **State-Level Examples:**
    - **Bihar:** Saw an **18.3 percentage point increase**, from **34.6% to 52.9%**, reflecting the impact of awareness campaigns and improved access to healthcare. **For instance:** In **Bihar**, the **Mamta Vahan Yojana** initiative provided free transportation for pregnant women to health facilities, significantly boosting antenatal care coverage, as reported in **NFHS-5** data.
    - **Uttar Pradesh:** Improved by **16.6 percentage points**, from **45.9% to 62.5%**, due to targeted maternal healthcare programs.

- **Enrollment of Girls in Secondary Education:**
  - Enrollment of girls in secondary education has increased, though the target of 82% remains unmet.
  - **National Progress (Women and Men in India, 2023):** Gross enrollment in secondary education improved from **75.5% in 2014-15** to **76.9% in 2018-19**, and further to **79.4% in 2021-22**
  - **For instance,** in **Rajasthan**, programs providing bicycles and scholarships for girls helped improve school attendance. However, early marriages and socio-economic

barriers continue to impede progress, as highlighted in **Women and Men in India, 2023**.

- **Nationwide Awareness and Sensitization:**
    - BBBP has successfully established the improvement of the Child Sex Ratio (CSR) as a national agenda, leading to increased awareness and sensitization regarding gender equality.
    - **Public Engagement:** The scheme has resulted in heightened consciousness and discourse around the issue of declining CSR, engaging various stakeholders across the country.
    - **For instance,** campaigns like **"Selfie with Daughter"**, initiated in Haryana, gained nationwide traction, encouraging families to celebrate their daughters and challenge prevailing gender biases.
- **Recognition of Brand Ambassadors:**
    - The appointment of prominent female figures as brand ambassadors has provided role models for young girls and reinforced the campaign's message.

For instance, Athletes such as **Sakshi Malik**, an Olympic medallist in wrestling, and **Avani Lekhara**, a Paralympic champion in shooting, have been named ambassadors, inspiring girls to pursue diverse fields.

CHALLENGES:

- **Overemphasis on Publicity:**
    - A **Parliamentary Standing Committee report** revealed that **80% of the BBBP funds** were spent on advertisements and media campaigns. This left limited resources for on-ground interventions like strengthening health and education infrastructure for girls.
    - For example, during the 2014-15 to 2018-19 period, only **19% of funds** were utilized for district-level implementation.
- **Low Utilization by States:**
    - Several states failed to utilize their allocated funds effectively. Less than **25% of funds** were released to districts during critical years of the program.(Source:

Parliamentary Standing Committee on Empowerment of Women and government expenditure reviews.)

- **Uneven Progress Across States:**
  - **Sex Ratio at Birth (SRB):**
    - Data from the **Sample Registration System (SRS)** (2018-20) shows disparities in SRB improvements:
      - **Improved States:** Rajasthan (+54 points, 857 to 911), Haryana (+38 points, 832 to 870), and Himachal Pradesh (+33 points, 917 to 950).
      - **Declining States:** Odisha (-23 points, 948 to 925) and Karnataka (-19 points, 935 to 916) experienced setbacks.
    - This uneven progress highlights that some regions still struggle with implementing laws like the **Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act**.
  - **Under-Five Child Mortality Gender Gap:**
    - As per **SRS data (2020)**, while states like Himachal Pradesh (-9 points) and Kerala (-8 points) achieved lower mortality rates for girls compared to boys, states like Rajasthan (+6 points) and Chhattisgarh (+8 points) reported higher female child mortality.
- **3. Monitoring and Accountability Challenges**
  - **Lack of Data Transparency:**
    - Key metrics such as district-level data on SRB and other performance indicators are not publicly available, limiting the ability to assess the program's impact effectively.
    - For example, data from the **Health Management Information System (HMIS)**, cited in the **Economic Survey (2023-24)**, remains inaccessible to the public, creating barriers for independent monitoring.
  - **Weak Monitoring Mechanisms:**
    - The absence of robust evaluation frameworks has made it difficult to ensure accountability for fund usage and program outcomes.

- **Persistent Societal and Cultural Challenges:**
    - **Patriarchal Norms and Gender Bias:**
        - Deep-rooted societal norms continue to favour male children, leading to practices like sex-selective abortions despite legal restrictions. States like Bihar (-13 points in SRB) and Uttarakhand (-6 points) still struggle to overcome these biases.
    - **Educational Barriers:**
        - As per **Women and Men in India (2023)**, while the Gross Enrollment Ratio (GER) for girls in secondary education increased from **75.5% in 2014-15** to **79.4% in 2021-22**, it failed to meet the target of **82% by 2018-19**. Challenges such as early marriage, poverty, and lack of infrastructure in rural areas continue to hinder progress.
- **Unauthorized Use of BBBP's Name:**
    - Cases of fraudulent activities under the guise of BBBP have been reported, with fake forms and misinformation being circulated. For example, the **Haryana government** issued warnings against such scams, which misled the public and undermined the program's credibility.

WAY FORWARD

To address the challenges associated with **Beti Bachao Beti Padhao (BBBP)** and ensure its success, the following steps can be implemented:

Optimize Fund Allocation and Utilization

- **Prioritize On-Ground Interventions:** Redirect a larger share of funds from media campaigns to improving healthcare, education, and infrastructure for girls.
- **Increase State-Level Accountability:** Ensure timely release and effective utilization of funds by states through monitoring and audits.
- **Capacity Building for Implementation:** Provide training to local authorities and grassroots workers to enhance the implementation of the scheme.

Strengthen Monitoring and Accountability

- **Robust Data Transparency:** Publicize district-level data on indicators like SRB and other performance metrics to allow independent monitoring.

- **Regular Evaluations:** Set up third-party assessments to evaluate the impact of interventions and identify areas for improvement.
- **Digitization of Reports:** Leverage technology for real-time monitoring of outcomes and fund utilization.

Address Regional and Socio-Cultural Disparities

- **Localized Campaigns:** Develop region-specific strategies to address cultural resistance and patriarchal norms, especially in states with declining SRB.
- **Community Participation:** Involve local leaders, civil society organizations, and women's groups to promote behavioral change and encourage support for girls' education and health.

Focus on Education and Retention

- **Financial Support Schemes:** Expand scholarships, free bicycles, and other incentives to keep girls in secondary and higher education.
- **Infrastructure Development:** Improve school infrastructure in rural areas to make education more accessible for girls.
- **Delayed Marriages:** Implement stronger measures to prevent early marriages and support higher education for girls.

Strengthen Legal Enforcement

- **Implementation of PCPNDT Act:** Ensure stricter monitoring of clinics and stronger penalties for those involved in sex-selective practices.
- **Awareness Programs:** Conduct campaigns to inform people about the legal and ethical implications of sex-selective abortions.

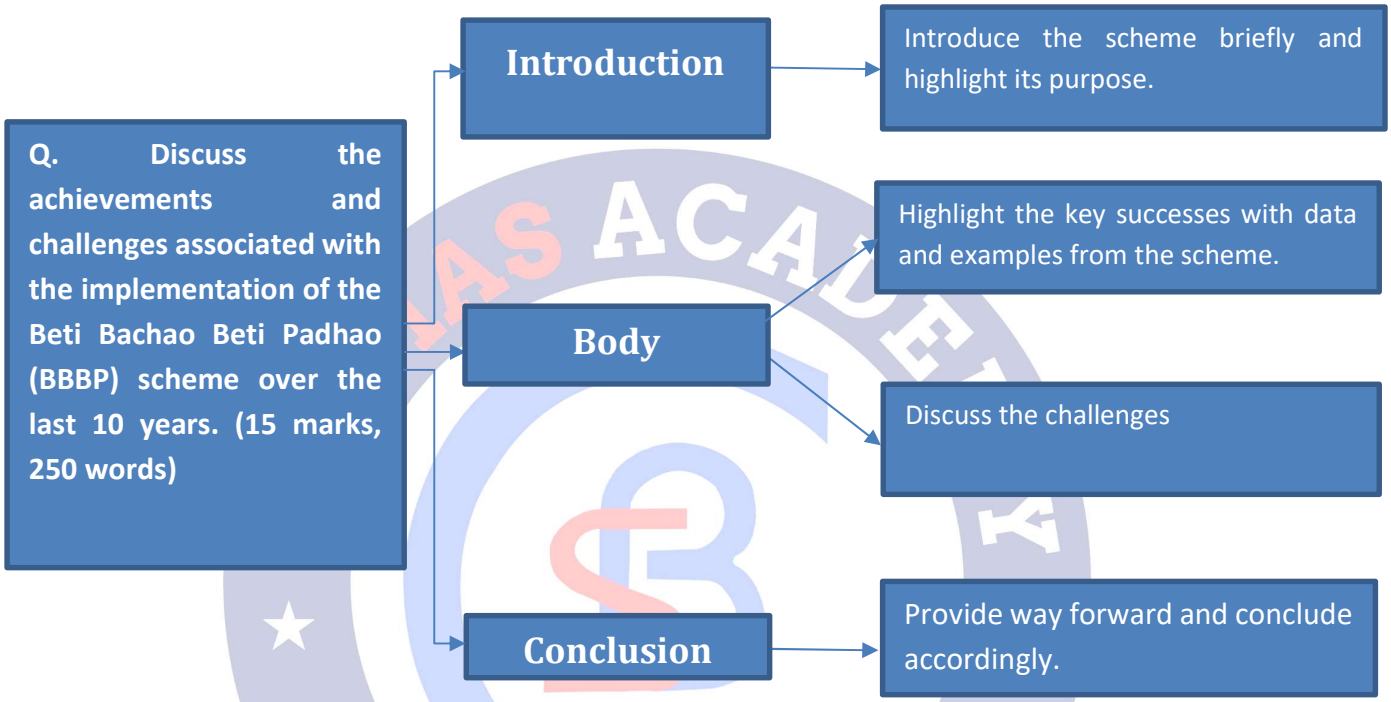
CONCLUSION:

- The Beti Bachao Beti Padhao (BBBP) initiative has made notable progress in improving Sex Ratio at Birth (SRB), increasing institutional deliveries, and raising awareness about gender equality. However, challenges like fund misallocation, regional disparities, and socio-cultural barriers persist. By prioritizing grassroots interventions, strengthening accountability, and addressing regional needs, BBBP can continue to empower girls and create a more gender-equal society.

PRACTICE QUESTION

Q. Discuss the achievements and challenges associated with the implementation of the Beti Bachao Beti Padhao (BBBP) scheme over the last 10 years. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Launched on January 22, 2015, the Beti Bachao Beti Padhao (BBBP) scheme celebrates its 10th anniversary in 2025. Aimed at addressing the declining Child Sex Ratio (CSR) and promoting gender equality, the initiative focuses on improving the Sex Ratio at Birth (SRB), ensuring the survival, education, and participation of the girl child, and eradicating gender biases. The program has emerged as a transformative movement, yet significant challenges remain.

Achievements of BBBP:

1. Improvement in Sex Ratio at Birth (SRB)

- National Progress: According to the Economic Survey (2023-24), the SRB improved from 918 girls per 1,000 boys (2014-15) to 930 (2023-24, provisional).

- State-Level Success (SRS Data, 2018-20):
    - Rajasthan: Improved by 54 points, from 857 to 911, due to awareness campaigns and enforcement of the PCPNDT Act.
    - Haryana: Improved by 38 points, from 832 to 870, bolstered by initiatives like "Selfie with Daughter" and the Kanya Kosh Scheme.

2. Reduction in Gender Gap in Under-Five Child Mortality

- The gender gap in child mortality decreased from 7 points in 2014 to 2 points in 2020 (SRS data).

3. Increase in Institutional Deliveries

- Institutional deliveries increased from 78.9% (2015-16, NFHS-4) to 88.6% (2019-21, NFHS-5), improving maternal and neonatal health.
- State-Level Examples:
    - Arunachal Pradesh: Achieved a 27 percentage point increase, from 52.2% to 79.2%, due to expanded rural health infrastructure.
    - Haryana: Improved by 14.5 percentage points, benefiting from financial incentives.

4. Antenatal Care (ANC) in the First Trimester

- National Progress: ANC in the first trimester rose from 58.6% (NFHS-4) to 70% (NFHS-5).
- State-Level Examples:
    - Bihar: Improved by 18.3 percentage points, from 34.6% to 52.9%, aided by programs like Mamta Vahan Yojana.
    - Uttar Pradesh: Increased by 16.6 percentage points, reflecting enhanced maternal healthcare initiatives.

5. Education of Girls

- The Gross Enrollment Ratio (GER) in secondary education improved from 75.5% in 2014-15 to 79.4% in 2021-22 (Women and Men in India, 2023).
- Example: In Rajasthan, initiatives like scholarships and bicycles for girls helped boost school attendance.

6. Nationwide Awareness and Advocacy

- BBBP has succeeded in making Child Sex Ratio (CSR) a national priority. Campaigns like "Selfie with Daughter" and the appointment of brand ambassadors like Sakshi Malik have raised awareness and challenged societal biases.

Challenges of BBBP:

1. Overemphasis on Publicity

- A Parliamentary Standing Committee report revealed that 80% of BBBP funds were spent on advertisements, leaving limited resources for grassroots interventions.

2. Uneven Progress Across States

- SRB Disparities (SRS, 2018-20): Declining SRB in states like Odisha (-23 points) and Karnataka (-19 points) indicates regional disparities and poor enforcement of gender laws.

3. Low Fund Utilization

- Less than 25% of allocated funds were released to districts during key periods, hindering the program's impact.

4. Cultural and Societal Barriers

- Deep-rooted patriarchal norms continue to favor male children, reflected in high rates of sex-selective abortions and early marriages in states like Bihar (-13 SRB points) and Uttarakhand (-6 points).

5. Monitoring and Accountability Gaps

- The lack of publicly available district-level data, as cited in the Economic Survey (2023-24), has made it difficult to evaluate the program's effectiveness comprehensively.

Way Forward:

- Redirect Funds: Allocate more resources to on-ground interventions like education and healthcare instead of media campaigns.
- State-Specific Strategies: Develop region-specific programs to address disparities in SRB and CSR.
- Strengthen Monitoring: Improve transparency by publishing district-level data and conducting independent evaluations.

- Behavioral Change Campaigns: Address cultural biases through grassroots advocacy and community engagement.
- Focus on Education: Expand financial incentives like scholarships and infrastructure to retain girls in schools.

Over the last decade, Beti Bachao Beti Padhao has achieved significant milestones, such as improving the Sex Ratio at Birth, reducing gender gaps in child mortality, and increasing institutional deliveries. However, challenges like regional disparities, fund misutilization, and societal biases persist. By prioritizing grassroots interventions and strengthening accountability, BBBP can continue to empower girls and create a more inclusive, gender-equal India.

GENERAL STUDIES-III

17. ISRO DEVELOPMENTS OF 2024

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Science and Technology >> Space missions of India

REFERENCE NEWS:

ISRO ended 2024 on a high with the successful launch of its 99th mission - the **Polar Satellite Launch Vehicle or PSLV-C60 -** which has two significant experimental missions - **SpaDex** and **POEM-4**. Even as these experiments continue into the new year, the Indian space agency looks to ride the high wave and has made a big announcement.

Indian space agency chairman S Somanath declared that 2025's first mission will be ISRO's landmark 100th mission.

ISRO- A BRIEF HISTORY:

Indian Space Research Organisation (ISRO) is the space agency of India. The organisation is involved in science, engineering and technology to harvest the benefits of outer space for India and the mankind. The Department of Space has evolved the following programmes with the objective of promoting & developing application of space science and space technology:

- **Launch Vehicle programme** having indigenous capability for launching satellites like PSLV, GSLV etc.
- **INSAT Programme** for telecommunications, broadcasting, meteorology, development of education etc.
- **Remote Sensing Programme** for application of satellite imagery for various developmental purposes like IRNSS.
- **Research and Development** in Space Sciences and Technology for serving the end of applying them for national development.

To spearhead the space research activities, **Indian National Committee for Space Research (INCOSPAR)** was set up in 1962 under the Department of Atomic Energy. Subsequently, **Indian Space Research Organisation (ISRO)** was established in August 1969, in place of INCOSPAR.

- The Government of India constituted the **Space Commission** and established **Department of Space** (DOS) in June 1972 and brought ISRO under DOS in September 1972.

- After the **Krishi Darshan** initiative success, the Satellite Instructional Television Experiment (SITE), hailed as 'the largest sociological experiment in the world' during 1975-76. This experiment benefited around 200,000 people, covering 2400 villages of six states and transmitted **development-oriented programmes** using the American Technology Satellite (ATS-6).
- The first Indian spacecraft **'Aryabhata'** was developed and was launched using a Soviet Launcher. Another major landmark was the development of the first **launch vehicle SLV-3** with a capability to place 40 kg in Low Earth Orbit (LEO (Low Earth Orbit)), which had its first successful flight in 1980.
- In the experimental phase during 80's, **end-to-end capability demonstration** was done in the design, development and in-orbit management of space systems together with the associated ground systems for the users**.**
- **Bhaskara-I & II missions** were pioneering steps in the remote sensing area whereas **'Ariane Passenger Payload Experiment (APPLE)' became the forerunner for future communication satellite system**.
- Development of the complex **Augmented Satellite Launch Vehicle (ASLV),** also demonstrated newer technologies like use of strap-on, bulbous heat shield, closed loop guidance and digital autopilot.
- This paved the way for learning many nuances of launch vehicle design for complex missions, leading the way for realisation of operational launch vehicles such as **PSLV and GSLV.**
- During the operational phase in 90's, major space infrastructure was created under two broad classes: one for the **communication, broadcasting and meteorology through a multi-purpose Indian National Satellite system (INSAT), and the other for Indian Remote Sensing Satellite (IRS) system.**

Till 2024, ISRO has conducted 129 spacecraft missions including Chandrayaan and Mangalyaan, 18 satellites realised by private players or students, 432 Foreign satellite launches by ISRO from 1999, 99 launch missions, 9 re-entry missions and POEMS, 2 launch missions facilitated by ISRO (Prarambh and Agnibaan) and the upcoming dream project of Gaganyaan.

ISRO 2024 ROUND-UP:

Launch Missions

- **Gaganyaan Uncrewed Mission 2**: A critical step in India's **human spaceflight program**, testing crew escape systems and environmental control modules for the upcoming crewed mission. The union cabinet chaired by the Prime Minister Shri Narendra Modi has approved the building of first unit of the **Bharatiya Anatriksh Station** by extending the scope of Gaganyaan program.
- **Aditya-L1 Solar Mission**: Successfully deployed in 2023 to study the Sun's corona, solar winds, and their impact on Earth's climate and satellites was placed in a halo orbit around

the Lagrangian point L1. The primary payload on Aditya L1 precisely estimated the time of a coronal mass ejection.

- **PSLV and GSLV Missions**: Multiple launches, including satellites for Earth observation, communication, and navigation.
    - **XPoSat (X-ray Polarimeter Satellite)** launched by PSLV-C58 is the first dedicated scientific satellite from ISRO to carry out research in space-based polarisation measurements of X-ray emission from celestial sources. The launch put India in the elite category as it became the second nation to send an observatory to study astronomical sources such as black holes, neutron stars etc.
    - **INSAT-3DS Satellite** launched by GSLV F14. In its 16th mission, the GSLV aims at deploying the INSAT-3DS meteorological satellite into the Geosynchronous Transfer Orbit (GTO). It is designed for enhanced meteorological observations and monitoring of land and ocean surfaces for weather forecasting and disaster warning.
    - **SSLV-D3 Mission** placed **EOS-08** precisely into the orbit. This flight completes the SSLV Development Project and enables operational missions by Indian industry and NSIL. The purpose includes surveillance, disaster and environmental monitoring, remote sensing for ocean surface winds, flood detection applications and monitoring UV irradiance in orbit.
    - PSLV-C59 vehicle carried **Proba-3** spacecraft into a highly elliptical orbit as a Dedicated commercial mission of NewSpace India Limited (NSIL). **Proba-3 is an In-Orbit Demonstration (IOD) mission of the European Space Agency.** The mission goal is to demonstrate **precise formation flying**.
    - **SpaDeX mission** is a cost-effective technology demonstrator mission for the demonstration of in-space docking using two small spacecraft launched by PSLV. This technology is essential for India's space ambitions such as Indian on Moon, sample return from the Moon, the building and operation of Bharatiya Antariksh Station (BAS), etc. SpaDeX will use PSLV's 4th stage, POEM-4 (PSLV Orbital Experimental Module-4) to carry 24 payloads from academic institutions and startups.

Space Exploration

- **Chandrayaan-3 and AstroSat Follow-ups**: Continued scientific experiments and data analysis from Chandrayaan-3's successful lunar landing in 2023. Focus on understanding lunar geology and potential resources. AstroSat was involved in studying celestial sources across a wide range of spectrum. NGC 300 and Western veil are some images released by AstroSat.
- **Analog Space Mission**: India's first Mars and Moon analog mission kicked off at Leh. The location was chosen for the region's sandy, rocky soil that resembles Martian and lunar

regolith. Ladakh's extreme temperatures, low oxygen levels will allow researchers to test life support systems.

International Collaboration

- Collaborated with **France** on advanced Earth observation and climate monitoring satellites. Strengthened ties with **NASA** under the **Artemis Accords**, supporting global lunar exploration efforts. Indian Space Research Organisation (ISRO) and **Australian Space Agency (**ASA) have signed an Implementation Agreement (IA) for further strengthening cooperation in space activities between Australia and India.
- **GSAT-N2 Satellite launch**: Communication satellite GSAT-N2 was successfully launched by SpaceX's Falcon-9 rocket. The satellite weighs 4,700kg and will enhance broadband services and in-flight connectivity across the Indian region. The launch marked India's first collaboration with SpaceX.

Space Technology Development

- **Reusable Launch Vehicle (RLV)**: Successful tests of the RLV, paving the way for cost-efficient and sustainable space missions. RLV LEX-03 Reusable Launch Vehicle Landing experiment for Pushpak Vehicle was conducted by ISRO. The RLV will touch Mach 5, re enter the atmosphere and land on water.
- **Private Sector Participation**: Strengthened ties with private companies under India's **space privatization policy**, boosting innovation and entrepreneurship in space technology. The missions like AzaadiSAT, INSPIREsat, PSLV-C51/Amazonia-1, Kalamsat are some examples

Space Education and Outreach

- ISRO conducted nationwide awareness programs, inspiring students and researchers through initiatives like **Yuvika (Young Scientist Program)**. India celebrated its first **National Space Day** on August 23, 2024 after ISRO achieved a historic milestone when Chandrayaan-3 mission completed a soft landing on the Moon on the day in 2023. The landing made India the fourth country to accomplish the feat and the first to land on the lunar South Pole.

UPCOMING MISSIONS OF ISRO:

2025 will be an exciting year as ISRO will launch four GSLV rockets, three PSLV launches as well as an SSLV launch.

- The 100th mission will on-board the Geosynchronous Satellite Launch Vehicle or **GSLV Mk-II** rocket to add to the **Indian satellite navigation system** being set up and expanded over time by ISRO. The mission will be titled the GSLV-F15/NVS-02 Mission. The payload will be the IRNSS-1K satellite, part of India's navigation satellite constellation.
- Docking is a crucial technology for India to master for **Chandrayaan-4** as well as its forthcoming orbital **Bharatiya Antariksh Station (BAS),** expected to be ready by 2035, and for its goal to send an Indian astronaut to the moon.

- Gaganyaan, India's first human space flight programme will be launched on a Human rated LVM3 vehicle. The first two unmanned missions will carry Vyommitra the female looking humanoid robot on board in 2025. G3, the manned mission afterwards will carry 3 Indian astronauts in 2026.
- **NASA-ISRO SAR (NISAR)** is a Low Earth Orbit (LEO) observatory being jointly developed by NASA and ISRO. NISAR will map the entire globe in 12 days and provide spatially and temporally consistent data for understanding changes in Earth's ecosystems, ice mass, vegetation biomass, sea level rise, ground water and natural hazards including earthquakes, tsunamis, volcanoes and landslides.
- **PSLV N-1** is the first ever privately-built version of the Polar Satellite Launch Vehicle (PSLV). Built in collaboration of HAL and L&T, the order is placed by New Space India Limited (NSIL), Isro's commercial arm. The vehicle is slated to be launched in the first quarter itself.
- Isro will also launch an earth observation satellite, **EOS-05** in 2025. It will provide geospatial imagery which can be used in the monitoring of natural hazards and disasters.
- Apart from that, Isro also plans to launch two satellites, IDRSS-1 and IDRSS-2, of **Indian Data Relay Satellite System (IDRSS**). These satellites will facilitate real-time communication between low earth orbit spacecraft and ground stations, which would be crucial for missions like Chandrayaan-4, Gaganyan and Bharatiya Antariksha Station.

HOW ISRO CAN IMPROVE ITS EFFICIENCY THROUGH OPTIMAL USE OF FUNDS AND HUMAN RESOURCES?

- **Strengthening Public-Private Partnerships (PPP): SpaceX (USA)** leveraged private investment and partnerships with NASA to reduce launch costs through innovations like reusable rockets. Encourage private sector participation under India's **Space Activities Bill**. Collaborate with startups like **Pixxel** and **Skyroot Aerospace** for satellite development and launch vehicle innovation.
- **Investing in Reusable Technology: Reusable Launch Vehicles (RLVs)** like SpaceX's Falcon 9 rockets are reusable, significantly reducing launch costs. Conducted prototype tests of its **RLV-TD (Reusable Launch Vehicle - Technology Demonstrator)**. Accelerate the development of RLVs to enhance cost efficiency. Allocate funds specifically for reusable rocket research and testing facilities.
- **Expanding Commercial Launch Services: Arianespace (Europe)** focuses on satellite launches for international clients, generating substantial revenue. PSLV has established a reputation for reliability, carrying payloads for over 30 countries. Increase focus on **Antrix Corporation** and **NewSpace India Limited (NSIL)** for commercial launches.

- **Enhancing Human Resource Efficiency**: NASA leverages partnerships with universities and private entities to train specialized talent and conduct collaborative research. Partner with universities to create specialized training programs in satellite technology, AI, and space exploration. Expand internships and fellowships under programs like **Yuvika (Young Scientist Program)**.
- **Expanding International Collaboration: ESA-NASA Collaboration j**oint missions like the James Webb Telescope showcased effective resource pooling and scientific breakthroughs.
- **Focus on Cost-Effective Missions: Chandrayaan and Mangalyaan** ISRO's low-cost missions have set global benchmarks on frugal technology.
- **Leveraging Big Data and AI: ESA's AI-Driven Space Operations** uses AI for satellite data processing, reducing costs and increasing efficiency.
- **Streamlining Project Management: Agile Development at SpaceX** enables rapid iterations and adaptations in mission planning.
- **Expanding Revenue Streams: Space Tourism by Blue Origin and Virgin Galactic.** Develop a roadmap for space tourism, leveraging RLVs. Explore satellite-based internet services to generate long-term revenue.

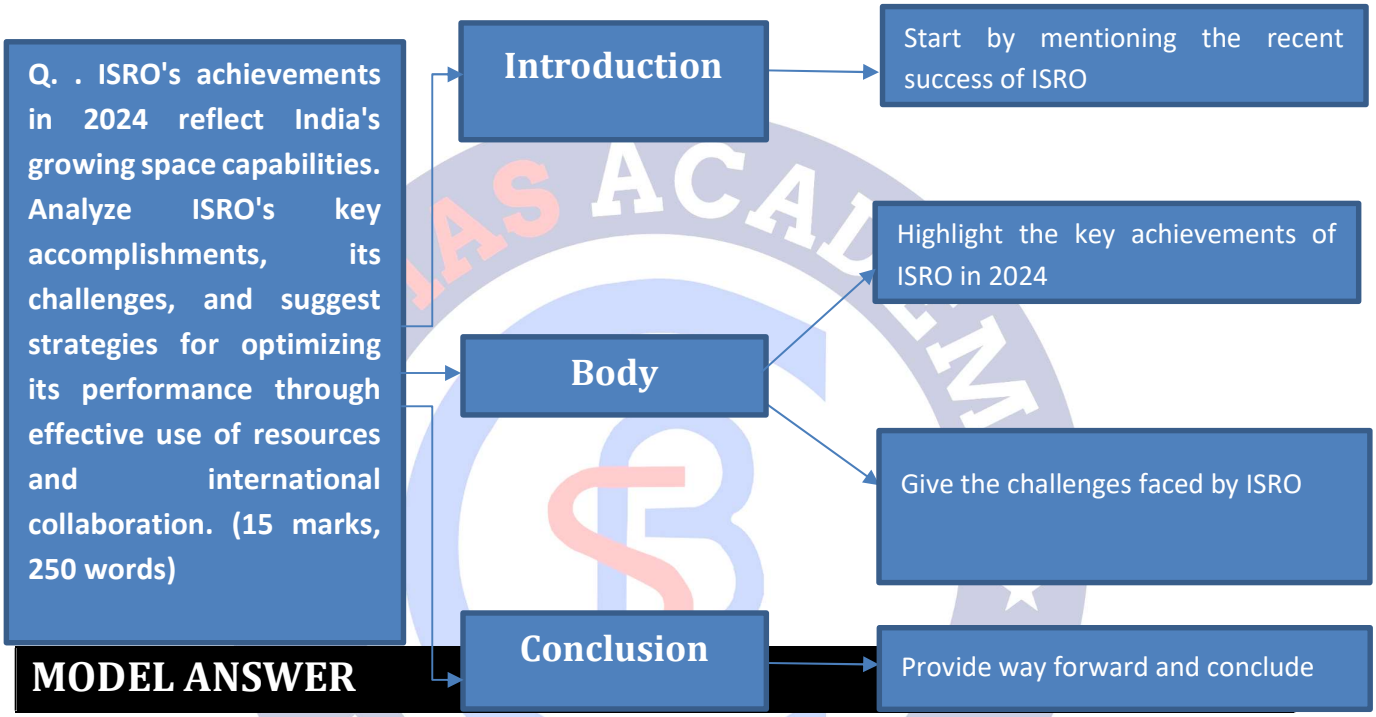
PRESENT STATUS OF INDIA'S SPACE ECONOMY: As per the report of Novaspace, a European consultancy,

- India's space sector has directly contributed about $24 billion (₹20,000 crore) to India's Gross Domestic Product over the last decade.
- It has directly supported **96,000 jobs** in the public and private sector.
- For every dollar produced by the space sector, there was a **multiplier effect of $2.54** to the Indian economy and India's space force was 2.5 times "more productive" than the country's broader industrial workforce.
- India's space sector has benefitted from decades of consistent investment with $13 billion invested in the last decade it is the **8th largest space economy** (in terms of funding) in the world.
- The Indian space sector was diversifying and now had 700 companies including 200 start-ups and had seen revenues grow to $6.3 billion in 2023, which was about **1.5% of the global space market.**
- Satellite communications contributed 54% to the space economy, followed by navigation (26%) and launches (11%). The main industries supported by the space sector were telecom (25%), information technology (10%) and administrative services (7%), the report highlighted.

PRACTICE QUESTION

Q. ISRO's achievements in 2024 reflect India's growing space capabilities. Analyze ISRO's key accomplishments, its challenges, and suggest strategies for optimizing its performance through effective use of resources and international collaboration. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The **Indian Space Research Organisation (ISRO)**, known for its cost-effective and innovative space missions, achieved significant milestones in 2024. From advancing human spaceflight programs through Gaganyaan mission to strengthening international collaborations with SpaceX and the year end with SpaDex docking experiment, ISRO demonstrated its ability to balance scientific exploration with societal applications.

KEY ACCOMPLISHMENTS IN 2024

1. **Launch Missions**:
    - **Gaganyaan Uncrewed Mission 2**: Tested crew escape systems and environmental controls for India's first human spaceflight.
    - **PSLV and GSLV Launches**: Key launches included the SSLV-D3 for disaster monitoring and XPoSat for studying celestial X-ray emissions.

- **SpaDeX Mission**: Demonstrated in-space docking technology, crucial for future missions like **Bharatiya Antariksh Station (BAS)** and **Chandrayaan-4**.

2. **Space Exploration**: Continued scientific experiments from **Chandrayaan-3** and **AstroSat**, focusing on lunar geology and celestial phenomena. Initiated the **Analog Space Mission** in Ladakh to simulate Mars and Moon conditions.

3. **International Collaboration**: Partnered with **France** and **NASA** under the Artemis Accords for advanced Earth observation and lunar exploration. Launched the **GSAT-N2** satellite via SpaceX, marking a milestone in international satellite deployment.

4. **Technological Advancements**: Conducted reusable launch vehicle (RLV) tests for cost-efficient space missions. Enhanced private sector participation under India's **space privatization policy**.

5. **Education and Outreach**: Celebrated the first **National Space Day** on August 23, marking the anniversary of **Chandrayaan-3's lunar landing**. Expanded programs like **Yuvika** to inspire young scientists.

CHALLENGES FACED BY ISRO

1. **Resource Constraints**: Limited funding for high-cost missions like **Gaganyaan** and the proposed **Bharatiya Antariksh Station**. Dependence on outdated infrastructure for testing advanced technologies.

2. **Competition in the Global Space Market**: Growing competition from private players like SpaceX and Blue Origin. Challenges in capturing the commercial satellite launch market.

3. **Technological Gaps**: Slow progress in developing reusable launch vehicles compared to global benchmarks. Underutilization of AI and big data for satellite monitoring and project management.

4. **Human Resource Challenges**: Brain drain due to better opportunities abroad. Limited collaborations with academic institutions for talent development.

5. **Limited International Visibility**: Insufficient participation in high-profile global missions like the James Webb Telescope or major lunar projects.

STRATEGIES FOR OPTIMIZING ISRO'S PERFORMANCE

1. **Enhancing Public-Private Partnerships (PPP)**: SpaceX leveraged NASA partnerships for reusable rockets. Collaborate with Indian startups like **Pixxel** and **Skyroot Aerospace** for satellite and launch vehicle innovation.

2. **Accelerating Reusable Launch Vehicle Development**: SpaceX's Falcon 9 significantly reduced launch costs. Prioritize R&D for **RLV-TD** and allocate dedicated funds for reusable rocket technology.

3. **Expanding Commercial Launch Services**: Arianespace generates substantial revenue through international satellite launches. Scale operations of **Antrix Corporation** and **NewSpace India Limited (NSIL)** for global clients.

4. **Focusing on Cost-Effective Missions**: Chandrayaan and Mangalyaan set benchmarks in frugal innovation. Maintain cost discipline while enhancing mission capabilities through advanced AI and data analytics.

5. **Strengthening Human Resource Development**: NASA partners with universities for training and research. Expand internship programs like **Yuvika** and create academic partnerships for skill development.

6. **Leveraging International Collaboration**: ESA and NASA jointly developed the James Webb Telescope. Increase participation in global missions and strengthen ties with France, the U.S., and emerging space nations.

7. **Exploring New Revenue Streams**: Space tourism initiatives by Virgin Galactic and Blue Origin. Develop a roadmap for space tourism and satellite-based internet services using RLVs.

ISRO's achievements in 2024 highlight its capability to execute world-class missions within limited budgets. To sustain and expand its global leadership, ISRO must address challenges through strategic resource allocation, technology innovation, and enhanced global partnerships. With a focused approach, ISRO can continue to propel India's space ambitions to greater heights.

18. RUPEE DEPRECIATION AGAINST USD

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Basic Economics >> Exchange Rate >>> Currency Depreciation

REFERENCE NEWS:

In the last week of December, 2024, the rupee breached the 85 mark against the U.S. dollar, touching an all-time low of 85.81. The currency depreciated about 3% in 2024, continuing its long-term trend of gradually but consistently losing value against the dollar.

RUPEE DEPRECIATION:

The **exchange rate** is the rate at which one currency can be exchanged for another. It's the price of one country's currency in terms of another country's currency.

Rupee depreciation refers to the fall in the value of the Indian rupee (INR) against foreign currencies, particularly the US dollar (USD). It implies that more rupees are needed to buy one unit of a foreign currency, affecting trade, inflation, and economic stability.

REASONS FOR THE CONSISTENT FALL OF THE RUPEE:

Global Influences

- **Foreign Investor Exit**: Foreign investors have been withdrawing investments from Indian markets. Central banks globally are recalibrating monetary policies to adjust to changing inflation levels post-pandemic. Capital outflows from India increase demand for foreign currencies like the U.S. dollar, depreciating the rupee.
- **Strength of the U.S. Dollar**: The U.S. Federal Reserve's tighter monetary policies compared to the Reserve Bank of India (RBI) have strengthened the dollar. The stronger dollar automatically weakens the rupee in the forex market.
- **High Inflation Globally:** Post-pandemic inflation led to **monetary tightening** in advanced economies, diverting investments away from emerging markets like India.
- **Geopolitical Risks**: Conflicts like the Russia-Ukraine war increase demand for safe-haven currencies like the USD.
- **Capital Flight:** Foreign Portfolio Investors (FPIs) withdrawing investments from Indian markets cause depreciation. During the COVID-19 pandemic, FPIs pulled out funds, leading to a decline in the rupee's value.

Domestic Economic Dynamics

- **India's Import Dependency**: India's high demand for imports like crude oil and gold. Increased demand for dollars to pay for imports weakens the rupee as the supply of rupees rises in the forex market.
- **Export Performance**: India's inability to significantly boost exports. A lack of robust export growth fails to generate sufficient demand for the rupee in global markets.
- **Inflation Differentials**: Higher inflation in India compared to the U.S. **Lower purchasing power** of the rupee makes it weaker against the dollar.

Monetary Policy and RBI Interventions

- **Loose Monetary Policy**: The RBI has historically maintained a looser monetary policy than the U.S. Federal Reserve. This increases the supply of rupees, contributing to depreciation.
- **RBI's Dollar Reserve Management**: To prop up the rupee, the RBI uses its dollar reserves to increase the supply of dollars in the forex market. Artificial support to the rupee prevents sharp volatility. However, it depletes India's foreign exchange reserves, which have fallen to an eight-month low of $640 billion from over $700 billion.
- **Gradual Depreciation Policy**: The RBI allows for **gradual depreciation** of the rupee to avoid economic disruption, maintaining stability but accepting a weaker currency over time.

INSTANCES OF SIGNIFICANT RUPEE DEPRECIATION:

- **1991 Balance of Payments Crisis**: India faced a severe balance of payments crisis with depleting forex reserves. The rupee was devalued by 18% and then by 9% to secure an IMF bailout. The rupee fell from ₹17.90/USD in 1990 to ₹32.43/USD in 1991.

- **2008 Global Financial Crisis**: Capital outflows and reduced global demand weakened emerging market currencies. The rupee depreciated from ₹39/USD in January 2008 to ₹51/USD by March 2009.

- **2013 Taper Tantrum**: The US Federal Reserve announced tapering of its quantitative easing program. The rupee depreciated sharply, reaching an all-time low of ₹68.85/USD in August 2013.

- **COVID-19 Pandemic (2020)**: FPI outflows and reduced global trade activity. The rupee fell to ₹76.91/USD in April 2020.

- **2022 Post-Pandemic Inflation and Geopolitical Tensions**: Fed rate hikes, high inflation, and the Russia-Ukraine war. The rupee reached a historic low of ₹83.02/USD in October 2022.

HOW A CURRENCY DEPRECIATES?

- **Basic Principle**: Similar to any commodity, the value of a currency is determined by its **demand** relative to its **supply**. If the demand for a currency decreases or its supply increases relative to another currency, it loses value, causing depreciation.
- **Forex Market Dynamics**: Currencies are traded in pairs (e.g., USD/INR). If traders sell more of one currency (increasing its supply) while buying another (increasing its demand), the former depreciates.
- **Demand-Supply Imbalance:** If the supply of a currency rises (e.g., due to loose monetary policies), its value decreases. If demand for a currency drops (e.g., reduced foreign investment or exports), depreciation occurs.
- **Inflation Differences:** Countries with higher inflation rates see their currency depreciate because goods and services become more expensive, reducing their competitiveness in global markets. Persistent higher inflation in India compared to the U.S. makes the rupee weaker relative to the dollar.
- **Trade Deficits:** A **trade deficit** occurs when a country imports more than it exports, leading to a higher demand for foreign currency (to pay for imports) and reduced demand for the domestic currency. India's reliance on high-value imports like crude oil and gold increases the demand for USD, weakening the rupee.
- **Global Events:** Geopolitical conflicts, pandemics, or financial crises can increase demand for safe-haven currencies like the USD, leading to depreciation of other currencies. The Russia-Ukraine war caused capital flight from emerging markets to advanced economies, weakening currencies like the rupee.
- **Speculative Activity:** Traders in forex markets betting on a currency's future performance can cause sharp fluctuations. Negative sentiment about an economy can lead to speculative selling, depreciating the currency.
- **Export Competitiveness:** If a country's exports are uncompetitive globally, it reduces the demand for its currency. India's inability to significantly boost exports limits demand for the rupee in global trade.

IMPACTS OF CONTINUOUS RUPEE DEPRECIATION ON THE INDIAN ECONOMY:

- **Inflationary Pressures**: Depreciation increases the cost of imports like crude oil, electronic goods, and machinery. Higher import costs lead to **imported inflation**, increasing prices for goods and services. Consumer inflation rises, eroding purchasing power.

- **Trade Deficit Widening**: India imports more than it exports, especially high-value goods like crude oil, gold, and electronics. A weaker rupee increases the import bill, leading to a higher **current account deficit (CAD)**. Sustained CAD impacts forex reserves and investor confidence.
- **Impact on Foreign Debt**: A significant portion of India's external debt is denominated in U.S. dollars. A weaker rupee increases the repayment burden of external debt. Government and corporate borrowers face higher interest and principal repayment costs.
- **Pressure on Forex Reserves**: The RBI intervenes in the forex market to stabilize the rupee by selling dollars from its reserves. Reduced forex reserves limit India's ability to manage future exchange rate volatility.
- **Capital Outflows**: Depreciation often leads to foreign investors withdrawing their investments from Indian markets. Outflows from equities and bonds weaken the rupee further, creating a vicious cycle.
- **Import-Dependent Sectors:** Industries relying on imported raw materials, such as electronics, automotive, and pharmaceuticals, face higher production costs. Pharma companies importing active pharmaceutical ingredients (APIs) see a rise in input costs.
- **Export-Oriented Sectors:** Depreciation can benefit exporters by making Indian goods cheaper in global markets. IT and textiles industries see improved competitiveness due to a weaker rupee.
- **Tourism and Education**: **Outbound Tourism** costlier foreign travel discourages Indians from traveling abroad. Airfare, accommodation, and expenses in foreign currencies become more expensive. **Overseas Education** students studying abroad face higher costs for tuition and living expenses due to unfavourable exchange rates. Payments in USD for education loans increase due to a weaker rupee.
- **Impact on Investment Climate**: Persistent depreciation signals economic instability. Diminishes investor confidence, making India less attractive for Foreign Direct Investment (FDI). High volatility in exchange rates impacts long-term investment decisions.
- **Impact on Oil and Energy Sector**: India imports over 80% of its crude oil requirements. Higher oil prices lead to a ballooning import bill, affecting sectors like transportation and power generation. Depreciation directly raises electricity costs for industries using imported coal or oil-based generation.
- **Government's Fiscal Stress**: Higher subsidy burdens and external debt servicing. Increased costs for oil and fertilizer subsidies strain fiscal budgets. Rising interest payments on external debt limit fiscal flexibility.

MEASURES TO AVOID UNSUSTAINABLE DEPRECIATION OF THE RUPEE:

Measures Adopted by India

- **Monetary Policy Adjustments:** The **Reserve Bank of India (RBI)** increases policy rates to attract foreign investments and reduce capital outflows.
    - In 2022, the RBI raised the repo rate to counteract rupee depreciation caused by foreign investor exits.
- **Forex Market Interventions:** The RBI sells U.S. dollars from its reserves to increase the dollar supply and stabilize the rupee.
    - India's forex reserves fell from $700 billion in September 2022 to $640 billion by December 2022 due to such interventions.
- **Promoting Exports and Curbing Non-Essential Imports:** Incentivizing export sectors like IT and pharmaceuticals to generate foreign exchange. Curtailing imports of gold and non-essential goods to reduce dollar demand.
    - Export subsidies and policies under the **Make in India** initiative. Import duties on gold were raised to limit inflows.
- **Encouraging Remittances: Incentives for Non-Resident Indians (NRIs)** by increasing interest rates on NRI deposits to attract dollar inflows.
    - In 2013, during the taper tantrum, the RBI introduced higher rates for NRI accounts.
- **Currency Swap Agreements: Bilateral Currency Swaps** as agreements with other countries to trade in local currencies instead of relying on the U.S. dollar.
    - India signed currency swap agreements with **Japan** and **Sri Lanka** to reduce dollar dependency.

Measures Adopted by Other Countries

- **Interventions in the Forex Market:** The People's Bank of China (PBOC) uses extensive forex reserves to stabilize the yuan. PBOC intervenes during trade wars or economic slowdowns to prevent rapid yuan depreciation.
- **Interest Rate Adjustments:** The U.S. Federal Reserve raises or lowers interest rates to manage the dollar's strength. Aggressive rate hikes in 2022 strengthened the dollar but impacted emerging market currencies.
- **Capital Controls: Malaysia** introduced capital controls during the 1997 Asian financial crisis to restrict outflows and stabilize the ringgit. **Brazil** imposed taxes on foreign investments in fixed-income securities to reduce speculative capital flows.
- **Diversifying Foreign Exchange Reserves: Russia** accumulated gold reserves and shifted away from dollar holdings to reduce dependency. Increased euro and yuan holdings after U.S. sanctions.

- **Adopting Alternative Payment Mechanisms: Turkey** promotes trade in local currencies with key trading partners like Russia and China to reduce reliance on the dollar.
- **Stimulus for Export Competitiveness: Japan** uses fiscal and monetary policies to keep the yen weaker, boosting export-driven industries like automobiles and electronics.

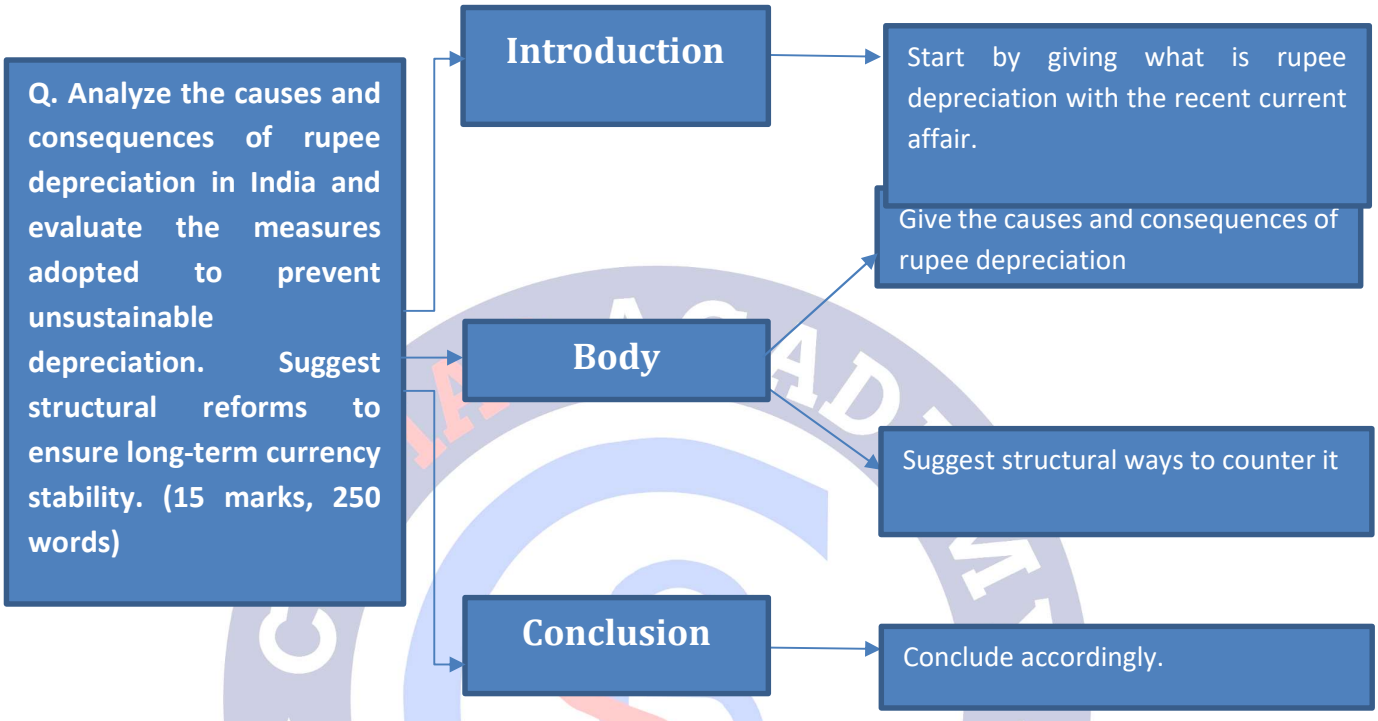
STRUCTURAL MEASURES FOR LONG-TERM STABILITY:

- **Reducing Import Dependency:** Encourage domestic manufacturing under initiatives like **Make in India** to reduce reliance on imported goods such as crude oil and electronics.
- **Promoting Foreign Direct Investment (FDI):** Attract stable long-term investments in infrastructure, manufacturing, and services sectors.
- **Strengthening Export Competitiveness:** Focus on high-value exports like technology, pharmaceuticals, and renewable energy products.
- **Building Adequate Forex Reserves:** Maintain sufficient foreign exchange reserves to handle external shocks.
- **Global Currency Diversification:** Shift a portion of trade and reserves to currencies like the euro, yen, or yuan to reduce dollar dominance. Promote trade within regional groups like BRICS, ASEAN, and BIMSTEC to settle transactions in local currencies.

PRACTICE QUESTION

Q. Analyze the causes and consequences of rupee depreciation in India and evaluate the measures adopted to prevent unsustainable depreciation. Suggest structural reforms to ensure long-term currency stability. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Rupee depreciation refers to the decline in the value of the Indian rupee (INR) against foreign currencies, particularly the US dollar (USD). This means more rupees are required to purchase one unit of foreign currency. In December 2024, the rupee touched an all-time low of ₹85.81/USD, continuing its gradual depreciation trend, raising concerns about economic stability.

CAUSES OF RUPEE DEPRECIATION

1. Global Influences:

- **Foreign Investor Exit**: Central banks globally recalibrating monetary policies have led to capital outflows from emerging markets like India.
- **Strengthening of the US Dollar**: The US Federal Reserve's tighter monetary policy has increased the dollar's value.
- **Geopolitical Risks**: Events like the Russia-Ukraine war have increased demand for safe-haven currencies like the USD.

2. Domestic Economic Dynamics:

- **High Import Dependency**: India's reliance on crude oil and gold increases dollar demand.
- **Inflation Differential**: Persistent higher inflation in India compared to the US reduces the rupee's competitiveness.
- **Weak Export Performance**: A lack of high-value exports limits foreign exchange inflows.

3. Monetary Policy and Forex Management:

- **Loose Monetary Policy**: RBI's historically lower interest rates compared to the US have contributed to rupee oversupply.
- **Forex Reserve Depletion**: RBI's interventions to stabilize the rupee have reduced reserves to $640 billion in December 2024 from $700 billion in September.

CONSEQUENCES OF RUPEE DEPRECIATION

1. Inflationary Pressures: Higher costs for imports like crude oil and electronics fuel inflation, reducing consumer purchasing power.

2. Trade Deficit Widening: Increased import bills due to higher dollar requirements worsen the current account deficit.

3. Impact on External Debt: A significant portion of India's external debt, denominated in USD, becomes costlier to repay.

4. Reduced Investment Attractiveness: Persistent currency volatility diminishes investor confidence, reducing Foreign Direct Investment (FDI) inflows.

5. Sectoral Impacts: Import-reliant industries like pharmaceuticals and automotive face higher costs. Export-oriented sectors like IT and textiles benefit from increased competitiveness in global markets.

MEASURES ADOPTED TO PREVENT UNSUSTAINABLE DEPRECIATION

1. By India:

- **Monetary Policy Adjustments**: RBI raised repo rates to attract foreign investments and curb outflows.
- **Forex Interventions**: RBI sold dollars to stabilize the rupee.

- **Promoting Exports**: Incentives under the **Make in India** initiative aimed at boosting export competitiveness.
- **Encouraging Remittances**: Higher interest rates on Non-Resident Indian (NRI) deposits.

STRUCTURAL REFORMS FOR LONG-TERM STABILITY

1. **Reducing Import Dependency**: Invest in renewable energy to reduce crude oil imports. Promote domestic manufacturing of electronics and high-value goods.
2. **Boosting Exports**: Focus on sectors like IT, pharmaceuticals, and renewable energy. Enhance trade agreements to access new markets.
3. **Strengthening Forex Reserves**: Build adequate reserves to manage external shocks.
4. **Encouraging Stable FDI**: Simplify investment processes and improve the ease of doing business.
5. **Promoting Currency Diversification**: Settle trade in local currencies through regional groupings like BRICS and BIMSTEC.

While rupee depreciation has benefits for exporters, its broader economic consequences, including inflation and fiscal stress, pose significant challenges. India's immediate measures have mitigated sharp volatility, but structural reforms focusing on export promotion, import substitution, and forex stability are critical to ensuring a resilient rupee and sustainable economic growth.

19. LEFT WING EXTREMISM

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Internal Security >> Left wing extremism

REFERENCE NEWS:

On January 6th in **Bijapur** of Chhattisgarh, suspected Maoists blew up a police vehicle killing 9 police personnels who were returning following an encounter in the **Abujhmad region**. A similar blew up killing 20 people in **Dantewada** happened on April 2023. Between the two attacks, security forces have pushed hard against the Maoists in their core area, killing 217 Naxal fighters last year alone. Monday's attack in the **forests of Kutru** is an example of the **Maoists' classic guerilla warfare tactics** and marks the first major retaliation in over one-and-a-half years.

LEFT WING EXTREMISM:

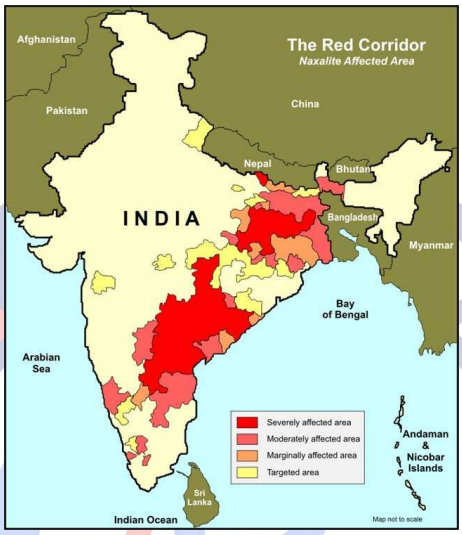
Left-Wing Extremism (LWE) in India, often associated with the **Maoist or Naxalite movement**, represents an ideological struggle aimed at overthrowing the government to establish a communist state.

Naxalite influence spans over **90 districts across 11 states**, with Chhattisgarh, Jharkhand, and Odisha being the worst affected. Poverty rates in LWE-affected areas are **40-50% higher** than the national average. Only **32% of villages** in LWE-affected regions have access to motorable roads leading to massive infrastructure deficit.

- **Naxalbari Movement (1967):** Originated in the village of Naxalbari, West Bengal, led by Charu Majumdar, Kanu Sanyal, and Jangal Santhal. Triggered by land disputes and the exploitation of peasants by landlords. Armed rebellion began with the killing of a landlord's men by tribals in May 1967.
- **Formation of CPI (Maoist):** In 2004, two major factions, the **People's War Group (PWG)** and the **Maoist Communist Centre of India (MCCI)**, merged to form the **Communist Party of India (Maoist)**. The aim was to establish a "People's Government" through an armed revolution and oppose perceived government oppression and corporate exploitation in resource-rich areas.
- **Expansion (1980s–2000s):** Spread to **tribal areas in Andhra Pradesh, Chhattisgarh, Jharkhand, Odisha, Bihar, Maharashtra**, and **West Bengal**, collectively known as the **Red Corridor**. Use of forested terrain for guerrilla warfare. Mobilized marginalized

communities by highlighting issues like land rights, displacement, and corporate exploitation.

- **2009-2024:** Incidence of Naxal violence have dropped by 77% between 2009-2021. CPI-M declared as a terrorist organisation. The bell curve of insurgency shows the drop in events post 2010. But sporadic instances of attacks have been reported in Malkangiri violence, Gadchiroli, Sukma, 2023 Dantewada and 2010 Chintalnar massacre.



CAUSES OF LEFT-WING EXTREMISM IN INDIA:

Economic Causes

- **Land Inequality**: Unequal land distribution and poor implementation of land reforms have alienated rural and tribal communities. Feudal land ownership structures remain, especially in tribal belts. Tribals and landless farmers lack secure land titles, making them vulnerable to exploitation.
    - The **Naxalbari uprising (1967)** began due to disputes over land redistribution in West Bengal. States like Bihar and Jharkhand have large disparities in land ownership.
- **Resource Exploitation**: Extractive industries like mining displace tribal populations without adequate rehabilitation. Loss of livelihoods and alienation from traditional resources like forests.
    - The **Kalinga Nagar incident (2006)** in Odisha, where tribals protested against land acquisition for a steel plant, highlighted this issue.
- **Poverty and Underdevelopment**: Persistent poverty and lack of infrastructure in tribal and rural areas provide fertile ground for Maoist recruitment. Marginalized communities are drawn to Maoist ideologies that promise social justice.

- 9 of the 10 poorest districts in India are affected by LWE (e.g., Malkangiri in Odisha, Sukma in Chhattisgarh).

Political Causes

- **Weak Democratic Processes**: Alienation from mainstream political systems due to lack of representation. Tribals and Dalits feel excluded from decision-making processes, reducing their faith in democracy.
  - Poor representation of tribals in local governance structures in states like Chhattisgarh and Jharkhand.
- **Delayed Implementation of Pro-Poor Laws:** Poor implementation of laws like the **Forest Rights Act (2006)** and **Panchayats (Extension to Scheduled Areas) Act (PESA)** led to denial of land and forest rights to tribals exacerbates their grievances.
  - A 2019 report found that **over 40% of claims under the Forest Rights Act** were rejected in LWE-affected areas without proper verification.
- **Historical Neglect**: Historical indifference to tribal and rural development. Tribals in regions like Bastar (Chhattisgarh) remain isolated, with limited political influence.
  - The Naxalite movement thrives in areas where government presence is minimal or absent.

Governance Causes

- **Ineffective Administration**: Absence of government institutions and officials in remote, LWE-affected areas. Lack of basic services like education, healthcare, and roads alienates local populations.
  - The **Red Corridor** regions (e.g., Gadchiroli in Maharashtra, Dantewada in Chhattisgarh) lack sufficient public infrastructure.
- **Corruption and Exploitation**: Rampant corruption in local administration prevents welfare schemes from reaching the needy. Maoists exploit the failure of governance to portray themselves as protectors of the poor.
  - Diversion of tribal welfare funds in states like Odisha and Jharkhand.
- **Militarized Response**: Over-reliance on security forces without addressing root causes. Alienates local populations further and provides justification for Maoist propaganda.
  - **Operation Green Hunt** (2009) faced criticism for human rights violations.

Social Causes

- **Tribal Marginalization**: Displacement and cultural erosion due to modernization and development projects. Tribals lose their identity and traditional way of life, making them susceptible to Maoist ideologies.

- Displacement of tribals due to **coal mining in Singrauli (Madhya Pradesh)** and **aluminium projects in Koraput (Odisha)**.

- **Social Inequality**: Caste-based discrimination and denial of social justice. Dalits and lower castes see Maoist movements as avenues for equality and empowerment.
    - The Naxalite movement has drawn support from Dalit communities in Andhra Pradesh and Telangana.
- **Education Deficit**: Poor access to quality education in tribal and backward regions. Lack of awareness and opportunities perpetuates the cycle of poverty and extremism.
    - Literacy rates in LWE-affected districts like **Dantewada (42%)** are significantly below the national average.

FACTORS SUSTAINING LEFT-WING EXTREMISM (LWE) IN INDIA EVEN IN 2025:

Socio-Economic Factors

- **Persistent Poverty and Underdevelopment**: Among India's poorest districts with **43% poverty rate** and limited access to roads, healthcare, and schools. Affected areas like **Dantewada** and **Koraput** lag behind the national average in literacy and income levels.
- **Land and Forest Rights Issues**: Over **40% of claims** under the Forest Rights Act (2006) in LWE-affected areas were rejected in recent years, leading to further alienation.
- **Unemployment**: LWE-affected districts have unemployment rates **25-30% higher** than the national average.

Governance Failures

- **Ineffective Administration**: Maoists levy "taxes" on villagers and businesses in areas like **Gadchiroli (Maharashtra)** and **Latehar (Jharkhand)** where government presence is minimal.
- **Corruption and Mismanagement**: Corruption in the implementation of welfare schemes prevents benefits from reaching the intended beneficiaries. Disillusioned populations view Maoists as protectors against exploitation. Misuse of funds under the **MGNREGA** scheme in Jharkhand has left many without jobs despite budget allocations.
- **Inadequate Rehabilitation Policies**: Insufficient support for surrendered Maoists and displaced communities. Many surrendering Maoists return to the movement due to lack of viable livelihood alternatives. Chhattisgarh has seen a **25% relapse rate** among surrendered Maoists in recent years.
- **Abujhmad sprawl-a strong hold of Maoists:** The difficult terrain, the absence of road infrastructure and state administration, and the presence of armed rebels have ensured that 90% of this area – bigger than the state of Goa – remains unsurveyed by the government. These jungles, including parts of the Indravati National Park in Bijapur

district, are used both as a haven and a transit corridor by Maoists to travel between MH, AP, TLS and Odisha via Chhattisgarh's Sukma district.

Ideological Factors

- **Maoist Ideology**: Maoist leaders exploit socio-economic grievances to promote their revolutionary ideology. Sustains loyalty among cadres and motivates youth to join the movement. **People's Government**, Maoists maintain schools and healthcare in remote villages, filling gaps left by the state.
- Maoists are known to maintain a robust network of **jan militia** – mainly local villagers who provide logistical support out of fear or for ideological reasons. They are also a great intelligence source on the movement of security forces and can be utilised for quick action.
- **Social Inequality and Caste Oppression**: Caste discrimination and lack of social justice fuel support for Maoist ideologies. In **Telangana and Andhra Pradesh**, Dalit groups have historically supported Naxalism due to caste-based oppression.

Strategic and Operational Factors

- **Geographic Advantage**: Forested and hilly terrain provides a natural refuge for Maoists. Difficult terrain complicates anti-insurgency operations. Dense forests in **Bastar (Chhattisgarh)** and **Malkangiri (Odisha)** are used as Maoist strongholds.
- **Guerrilla Warfare Tactics**: Use of ambushes, landmines, and surprise attacks against security forces. Keeps the security forces on the defensive.**2021 Sukma-Bijapur Attack**, Maoists ambushed security personnel, killing 22 and injuring many more.
- **Failure to adhere to some general thumb rules:** This can lead forces walking into ambush. Like choose to return by the same route the forces took for an operation in Dantewada in 2010, resulted in Chintalnar massacre killing 76 soldiers. Investigations revealed the forces had failed to carry out a road opening exercise — where security personnel first check the route for Maoists or IEDs — for the convoy's movement.

External and Contemporary Factors

- **Lack of Unified Political Will**: Poor coordination between states and the central government in tackling LWE. Inconsistent policies and delayed responses weaken anti-LWE strategies. States like **Bihar** and **Jharkhand** often disagree on cross-border counter-insurgency operations.
- **Spread of Misinformation**: Maoists use social media and propaganda to sustain their ideology. Attracts urban sympathizers and provides moral support for their cause. Maoist literature and videos have been found during raids in urban areas like Hyderabad and Nagpur**.**

- **Limited Success of Development Policies**: Development projects fail to address deep-seated inequalities. Alienates tribals who perceive these projects as benefiting elites or corporations. **Integrated Action Plan (IAP)**, though launched in 2010, the program's impact remains limited due to corruption and inefficiency.

GOVERNMENT MEASURES TO TACKLE LEFT WING EXTREMISM:

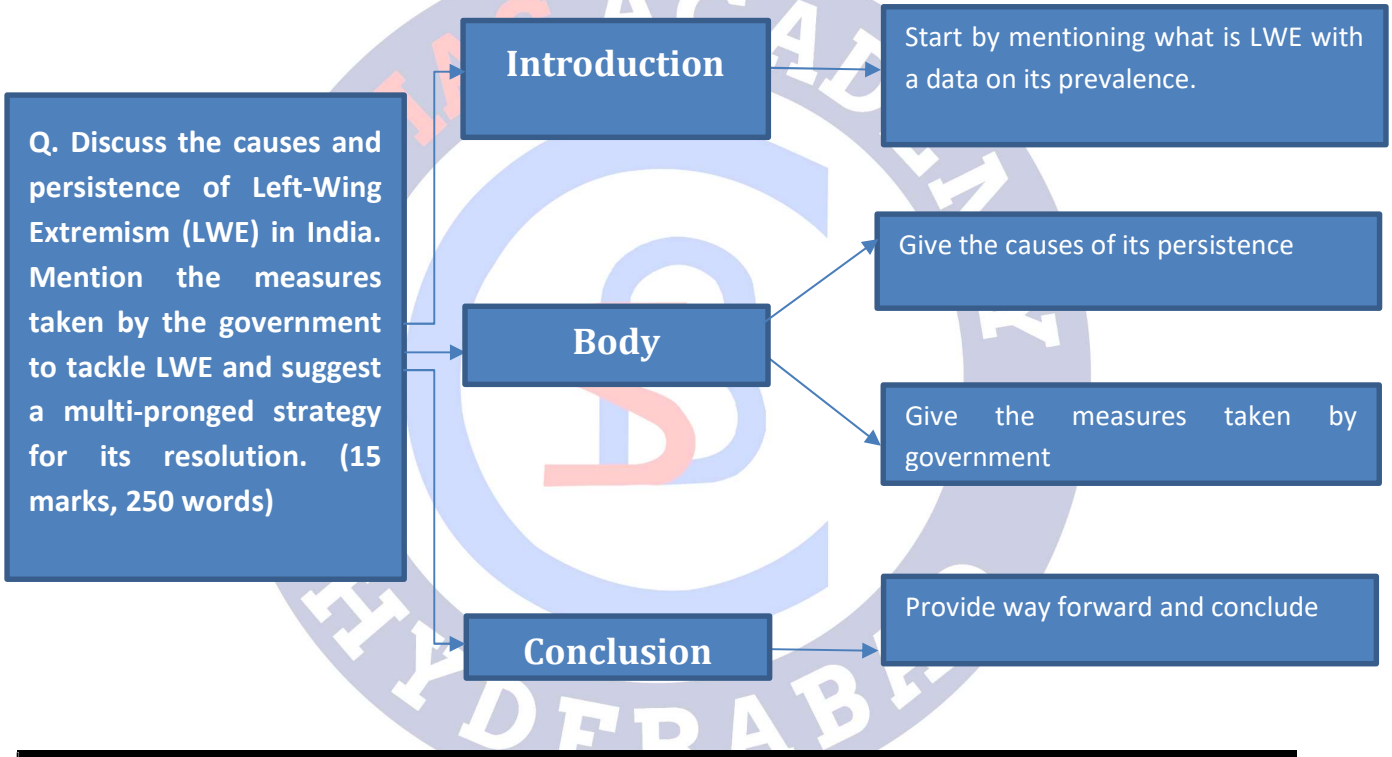
- **Special Forces**: Deployment of specialized units like the **CRPF's COBRA (Commando Battalion for Resolute Action)** and the **Greyhounds** in Andhra Pradesh and Telangana. Use of advanced surveillance technologies like drones, thermal imaging, and GPS-enabled devices for counter-insurgency. Successful neutralization of Maoist leaders in operations like the **Gadchiroli encounter (2019)**, where 40 Maoists were killed.
- **Unified Command Structure**: Central and state forces share real-time intelligence through multi-agency coordination. The establishment of **Joint Command Centres** in LWE-affected areas. Reduced Maoist attacks by over 25% between 2019 and 2024.
- **Police Modernization Scheme**: Strengthening police forces in LWE-affected states with better training and equipment. Security Related Expenditure Fund was setup. Police stations were fortified.
- **Road Connectivity**: Construction of over **12,000 km of roads** in remote areas to improve troop mobility and reduce Maoist influence through PM Gram Sadak Yojana, MGNREGA
- **Surrender and Rehabilitation Policy**: Financial assistance, vocational training, and reintegration programs for surrendered Maoists. **Chhattisgarh's surrender policy** has seen over 1,500 Maoists reintegrated into society since 2018.
- **Aspirational Districts Programme**: Focuses on socio-economic development in **30 most LWE-affected districts**. Targets health, education, skill development, and infrastructure.
- **Integrated Action Plan (IAP) Launched (2010)**: Provides funds for basic infrastructure like schools, roads, and health centres in LWE-affected areas. Skill development schemes like ROSHNI, CIAT schools were setup.
- **Employment Generation**: Employment under the Mahatma Gandhi National Rural Employment Guarantee Act is prioritized in LWE districts.
- **Strengthening Local Governance**: Implementation of the **Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA) e**mpowers tribal communities to manage local resources. Forests Rights Act, District Mineral Fund under MMDR Act, 5th and 6th schedule under the constitution strengthened governance.
- **e-Governance Initiatives**: Use of digital platforms to ensure transparency in welfare schemes. Direct Benefit Transfers (DBT) have reduced leakages in tribal welfare programs. Use of USOF (Universal Service Obligation Fund) was promoted

Left-wing extremism is catered using SAMADHAN Strategy for smart leadership, training the youth, use of actionable intelligence, harnessing technology. There is a need of a multi-pronged strategy involving development strategy based on Andhra Model in tackling the extremism.

PRACTICE QUESTION

Q. Discuss the causes and persistence of Left-Wing Extremism (LWE) in India. Mention the measures taken by the government to tackle LWE and suggest a multi-pronged strategy for its resolution. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Left-Wing Extremism (LWE), often referred to as Naxalism, emerged in 1967 with the Naxalbari movement in West Bengal represents an armed insurgency driven by **ideological opposition to the state**, seeking to establish a communist society. Despite a 77% reduction in incidents of violence from 2009 to 2021, LWE remains a significant internal security threat, particularly in the Red Corridor regions like Chhattisgarh, Jharkhand, and Odisha.

CAUSES OF PERSISTENCE OF LEFT-WING EXTREMISM

Economic Factors:

- **Land Inequality**: Unequal land distribution and failure of land reforms have alienated rural communities. Naxalbari uprising (1967) due to disputes over land redistribution.

- **Resource Exploitation**: Mining and industrial projects displace tribals without adequate rehabilitation. Kalinga Nagar protests (2006) in Odisha over land acquisition for a steel plant.
- **Persistent Poverty**: LWE-affected districts like Malkangiri (Odisha) have poverty rates exceeding 40%.

Political Factors:

- **Weak Democratic Processes**: Lack of representation alienates tribals and Dalits.Poor implementation of laws like the **Forest Rights Act (2006)** has denied land rights to many.
- **Historical Neglect**: Tribals in regions like Bastar (Chhattisgarh) face isolation and inadequate political influence.

Governance Factors:

- **Ineffective Administration**: Absence of government institutions and services in remote areas.90% of Abujhmad (Chhattisgarh) remains unsurveyed and lacks governance presence.
- **Corruption**: Leakages in welfare schemes alienate vulnerable populations. Misuse of MGNREGA funds in Jharkhand.

Social Factors:

- **Tribal Marginalization**: Displacement due to modernization and mining projects. Coal mining in Singrauli (Madhya Pradesh) displaced many tribals.
- **Social Inequality**: Caste-based oppression fuels discontent, particularly among Dalits.

Strategic and Operational Factors:

- **Geographic Advantage**: Maoists exploit forested and hilly terrain for guerrilla warfare. Bastar (Chhattisgarh) serves as a Maoist stronghold.
- **Ideological Factors**: Maoist propaganda emphasizes social justice and governance failures.

MEASURES TAKEN BY THE GOVERNMENT

- **Special Forces**: Deployment of units like COBRA and Greyhounds for counter-insurgency operations.
- **Police Modernization**: Strengthened police infrastructure in LWE-affected regions.
- **Integrated Action Plan (IAP)**: Funded basic infrastructure like roads and schools in LWE districts.
- **Aspirational Districts Programme**: Focuses on socio-economic development in the 30 most LWE-affected districts.
- **Employment Schemes**: Prioritized under MGNREGA and skill development programs like ROSHNI.

- **Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA)**: Empowers tribal communities in resource management.
- **Digital Governance**: Direct Benefit Transfers (DBT) reduced leakages in welfare schemes.
- **Surrender and Rehabilitation**: Financial assistance and vocational training for surrendered Maoists. Chhattisgarh reintegrated over 1,500 Maoists since 2018.

WAY FORWARD

1. **Inclusive Development**: Implement land and forest rights effectively. Prioritize infrastructure development in tribal areas.
2. **Strengthen Governance**: Ensure the presence of government institutions in remote areas. Empower local governance through PESA and digital platforms.
3. **Enhanced Security Measures**: Expand intelligence-sharing networks and deploy technology like drones. Strengthen state police forces in LWE areas.
4. **Community-Led Solutions**: Promote community participation in decision-making. Establish public grievance redressal mechanisms.
5. **Dialogue and Reintegration**: Engage moderate Maoist factions in peace talks. Offer skill-based rehabilitation to surrendered cadres.

Left-Wing Extremism in India is a manifestation of long-standing socio-economic disparities and governance failures. While significant progress has been made through security operations and development initiatives, a multi-pronged approach combining inclusive development, good governance, and effective counter-insurgency strategies is essential to eradicate LWE and ensure sustainable peace in affected regions.

20. FOREST FIRES

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Disaster Management >> Wildfires

REFERENCE NEWS:

Raging wildfires have left a trail of destruction in California, US, killing at least 10 people and damaging more than 10,000 structures. At least 1,80,000 people have been evacuated as fast-moving flames blazed through the Palisades, Eaton Hill and Hollywood Hills neighbourhoods

FOREST FIRES AROUND THE GLOBE:

Forest fires, also known as wildfires, are uncontrolled blazes that burn forests, grasslands, or other vegetation.

There are currently three wildfires torching southern California. The majority (85%) of all forest fires across the United States are started by humans, either deliberately or accidentally, according to the US Forest Service.

The main culprit so far is the **Santa Ana wind extreme, dry winds** that are common in LA in **colder winter months.** The California Department of Forestry warned strong Santa Ana winds and low humidity are whipping up "extreme wildfire risks. These **north-easterly winds** blow from the interior of Southern California towards the coast, picking up speed as they squeeze through mountain ranges that border the urban area around the coast. They blow in the opposite direction to the normal onshore flow that carries moist air from the Pacific Ocean into the area. The lack of humidity in the air parches vegetation, making it more flammable once a fire is started.

The winds create an "**atmospheric blow-dryer" effect** that will "dry things out even further". The longer the extreme wind persists, the drier the vegetation will become."

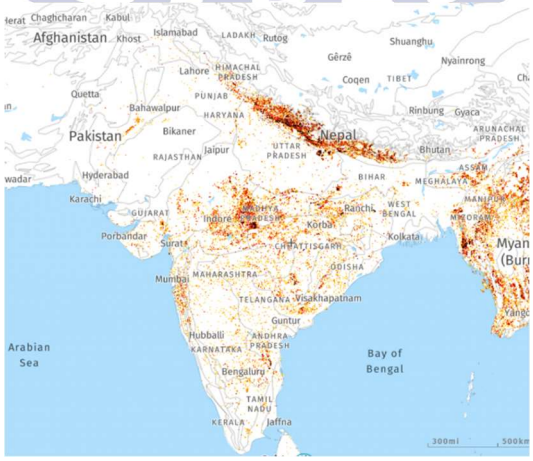
The fire season has become "year-round in the state of California" despite the state not "traditionally" seeing fires at this time of year - apparently alluding to the impact of climate change. Scientists will need time to assess the role of climate change in these fires, which could range from drying out the land to actually decreasing wind speeds. Climate change is increasing the hot, dry weather in the US that parches. Southern California has experienced a particularly hot summer, followed by almost no rain during what should be the wet season, vegetation, thereby creating the fuel for wildfires.

- **Australia: Bushfires** or Black Summer Fires (2019–2020). Burnt over **18 million hectares**. Killed at least **3 billion animals**. Released **400 million tons of CO_2**, significantly affecting global carbon levels.
- **Russia's Siberian Wildfires** (2021) burnt over **18 million hectares**. Caused significant pollution, with smoke reaching the North Pole for the first time.
- **United States:** California Wildfires (2020). Burnt over **4 million acres**, the worst in the state's history. Caused **31 deaths** and destroyed thousands of homes. Economic losses of over **$19 billion**.
- **Amazon Rainforest** Fires (2019): Over **906,000 hectares** burnt. Significant loss of biodiversity in the "lungs of the Earth." Fires mostly human-induced due to deforestation and agricultural practices.
- **Canada's** Alberta Wildfires (2023). Burned **5.3 million hectares** by mid-year. Led to mass evacuations and air quality concerns in the U.S. and Canada.
- **Europe's Mediterranean Fires** in Greece and Turkey (2021) burnt tens of thousands of hectares of land. Evacuations and significant damage to tourism and agriculture sectors.

FOREST FIRES IN INDIA:

A forest fire is an uncontrolled fire that destroys large parts of the forest. **November to June** is considered to **be forest fire season** in India. The top three states with the most fire incidents in the 2023-24 season are **Uttarakhand, Odisha, and Chhattisgarh. North eastern states of Assam, Manipur** etc are also prone to forest fires**.** Severe fires occur in many forest types **particularly dry deciduous forest**, while evergreen, semi-evergreen and montane temperate forests are comparatively less prone.

More than 36% of the country's forest cover has been estimated to be prone to frequent forest fires. Nearly 4 % of the country's forest cover is extremely prone to fire, whereas 6% of forest cover is found to be very highly fire prone (ISFR 2019).



CAUSES OF FOREST FIRES IN INDIA:

Natural Causes of Forest Fires

- **Dry Seasons**: Prolonged dry spells and heat waves during summer increase the susceptibility of forests to fires. The **Uttarakhand forest fires (2020)** were exacerbated by high temperatures and dry conditions.
- **Wind**: Strong winds can rapidly spread fires over large areas. Fires in Himachal Pradesh often spread quickly due to high-altitude winds.
- **Lightning Strikes:** Lightning can ignite dry vegetation, especially in remote forested areas. In **Northeast India**, lightning is a common cause of fires in forested regions.
- **Natural Combustion** of Accumulated Dry Leaves and Grass: Organic material in forests, such as dry leaves and grass, can spontaneously combust under extreme heat. Spontaneous combustion has been observed in the **Western Ghats** during peak summer.
- **Biotic Factors:** Forests with highly inflammable resinous trees (like chir pine) are prone to natural fires. **Chir pine forests** in Himachal Pradesh are frequently affected by fires.
- **Lack of soil moisture-** The dryness in the soil triggers fire in forests. The recent Uttarakhand wildfires have been caused due to this.

Man-Made Causes of Forest Fires

- **Slash-and-Burn Agriculture (Jhum Cultivation)**: Tribals in Northeast India clear forested land for agriculture by burning vegetation. Often leads to uncontrolled fires spreading to nearby forests. Jhum cultivation in **Nagaland and Mizoram** has caused extensive fires in the region.
- **Deforestation and unscientific afforestation drives:** This may result in loss of treeline which have been naturally fire prone thus acting as a fire barrier stopping the spread of fires. Unscientific afforestation can also contribute to forest fire spread.
- **Poaching Activities**: Poachers set fires to divert animals or clear undergrowth for easier hunting. Fires in the **Bandipur National Park (Karnataka)** were linked to poaching activities.
- **Grazing and Land Clearance**: Villagers burn dry grass to stimulate new grass growth for cattle grazing. Fires in **Madhya Pradesh's Kanha National Park** have been traced to such practices.
- **Logging and Illegal Activities**: Illegal loggers use fire to clear areas for timber collection or to hide their tracks. Deforestation fires in **Jharkhand and Odisha** have resulted from illegal timber operations.

- **Tourism and Negligence**: Campfires, discarded cigarettes, and unattended burning materials by tourists can ignite fires. Fires in **Himachal Pradesh's hill stations** have often been linked to careless tourist activities.
- **Infrastructure Development**: Construction of roads, railways, and power lines can trigger fires due to sparks or negligence. Sparks from power lines were responsible for fires in **Chhattisgarh forests**.
- **Arson**: Deliberate fires by individuals due to conflicts over land, revenge, or other motives. Fires in Uttarakhand forests are occasionally linked to deliberate acts by locals.

IMPACT OF FOREST FIRES IN INDIA:

Environmental Impact

- **Loss of Biodiversity:** Forest fires destroy habitats, causing irreparable damage to flora and fauna, including endangered species.
  - The **Bandipur National Park fires (2019)** in Karnataka destroyed vast stretches of tiger habitat, affecting local biodiversity. The **Similipal Reserve fires (2021)** in Odisha caused severe damage to medicinal plant species and wildlife.
- **Contribution to Climate Change:** Fires release significant amounts of carbon dioxide (CO_2) and other greenhouse gases, worsening global warming.
  - The Uttarakhand fires (2016) released **0.2 million tons of CO_2** into the atmosphere. India's annual forest fire emissions contribute to **6-8% of its total CO_2 emissions**.
- **Soil Degradation:** High-intensity fires deplete soil nutrients, making it unsuitable for vegetation growth and increasing the risk of erosion.
  - Fires in the **Western Ghats** lead to soil degradation, reducing the fertility of forested lands.
- **Disruption of Hydrological Cycles:** Fires destroy vegetation that regulates water cycles, reducing groundwater recharge and increasing surface runoff.
  - Forest fires in the **Himalayan foothills** have affected water availability in downstream agricultural areas.

Economic Impact

- **Destruction of Forest Resources:** Fires cause economic losses by destroying valuable timber, bamboo, and non-timber forest products.
  - The Uttarakhand fires (2020) caused losses worth over **₹1,000 crore**, destroying timber and medicinal plants.
- **Cost of Firefighting and Recovery:** Managing and extinguishing forest fires require significant resources, including manpower and equipment.

- The government spends approximately **₹1,100 crore annually** on forest fire management and prevention.

- **Impact on Livelihoods:** Forest-dependent communities lose access to resources like fuelwood, fodder, and medicinal plants.
    - The Simlipal fires (2021) disrupted the livelihoods of local tribal communities reliant on forest produce.
- **Impact on Infrastructure**: Can burn houses, electricity lines, and other critical infrastructure like in Californian fires which destroyed over 10000 structures.

Health Impact

- **Air Pollution:** Forest fires release fine particulate matter (PM2.5) and other pollutants, causing respiratory and cardiovascular problems.
    - Fires in **Himachal Pradesh (2022)** led to a significant rise in PM2.5 levels, impacting nearby towns and cities.
- **Smoke-Related Illnesses:** Prolonged exposure to smoke causes health issues like asthma, bronchitis, and eye irritation among affected populations.
    - Villagers in Chhattisgarh reported increased respiratory problems during the **2021 forest fires**.

Social Impact

- **Displacement of Communities:** Large-scale fires force evacuations, leaving communities homeless and disrupting lives.
    - Fires in Madhya Pradesh's Kanha National Park caused temporary displacement of tribal families living near the forest.
- **Loss of Cultural Heritage:** Tribals and forest-dependent communities often lose sacred groves and traditional knowledge associated with forests.
    - Forest fires in Odisha's **Simlipal Reserve** impacted traditional practices and sacred sites of the local tribes.

Institutional and Governance Impact

- **Increased Pressure on Authorities:** Frequent fires strain the capacity of forest departments and firefighting agencies.
    - The Uttarakhand Forest Department faced criticism during the **2020 fires** for lack of resources and delayed response.
- **Impacts on Tourism:** Fires in national parks and reserves lead to reduced tourist inflow, affecting local economies.

- The **Bandipur fires (2019)** led to a temporary shutdown of the national park, reducing tourism revenue.

MEASURES TO CONTROL AND PREVENT FOREST FIRES:

Prevention Measures

- **Firebreaks:** Clear strips of land devoid of vegetation to prevent fire spread. Tribals in central India create firebreaks using manual clearing methods. **California** uses controlled firebreaks around critical infrastructure to limit fire spread.
- **Controlled or Prescribed Burns**: Intentionally setting small fires under controlled conditions to reduce fuel load. **Australia** uses prescribed burns extensively during its off-season to manage bushfire risks. Forest departments in Uttarakhand and Himachal Pradesh have begun small-scale controlled burns.
- **Afforestation with Fire-Resistant Species**: Planting fire-resistant species like sal or neem reduces flammability. Karnataka promotes planting **fire-resistant eucalyptus** in forested regions**.**
- **Regulation of Human Activities**: Restrict activities like slash-and-burn agriculture and tourism during fire-prone seasons. Ban on agricultural burning in **Nagaland and Mizoram** to curb forest fire risks.

Detection and Monitoring

- **Satellite-Based Monitoring**: Use satellite imagery for real-time monitoring of forest fires. **NASA's FIRMS (Fire Information for Resource Management System)** tracks active fires globally. **Forest Fire Alert System 3.0** by ISRO provides real-time data to Indian forest departments.
- **Drones and UAVs**: Drones equipped with thermal cameras can detect early-stage fires. Maharashtra forest department uses drones in **Tadoba-Andhari Tiger Reserve**.
- **Community-Based Monitoring**: Engage local communities to report and monitor fires. Tribals in Odisha's **Simlipal Reserve** monitor forest conditions during summer.

Suppression and Control

- **Firefighting Crews**: Trained personnel equipped with specialized tools. **Canada** deploys aerial firefighting teams to douse remote fires. COBRA units trained in wildfire suppression are deployed in Chhattisgarh and Jharkhand.
- **Aerial Firefighting**: Use of water bombers or helicopters to extinguish fires. **California** employs supertankers for large-scale fire suppression. During the **2021 Uttarakhand fires**, helicopters were deployed for water drops.

- **Fire Retardants**: Spraying fire-resistant chemicals in high-risk zones. **Australia** sprays fire retardants in bushfire-prone areas.

Governance and Policy Measures

- **Forest Fire Management Plans**: Formulate region-specific fire management policies. Himachal Pradesh has a state-specific forest fire plan incorporating risk assessment.
- **Strengthening Legislation**: Enforce penalties for fire negligence and deliberate arson. The Indian Forest Act (1927) provides punitive measures for intentional fires.
- **Financial Mechanisms**: Allocate dedicated funds for fire prevention. **Compensatory Afforestation Fund Management and Planning Authority (CAMPA)** finances fire mitigation projects.

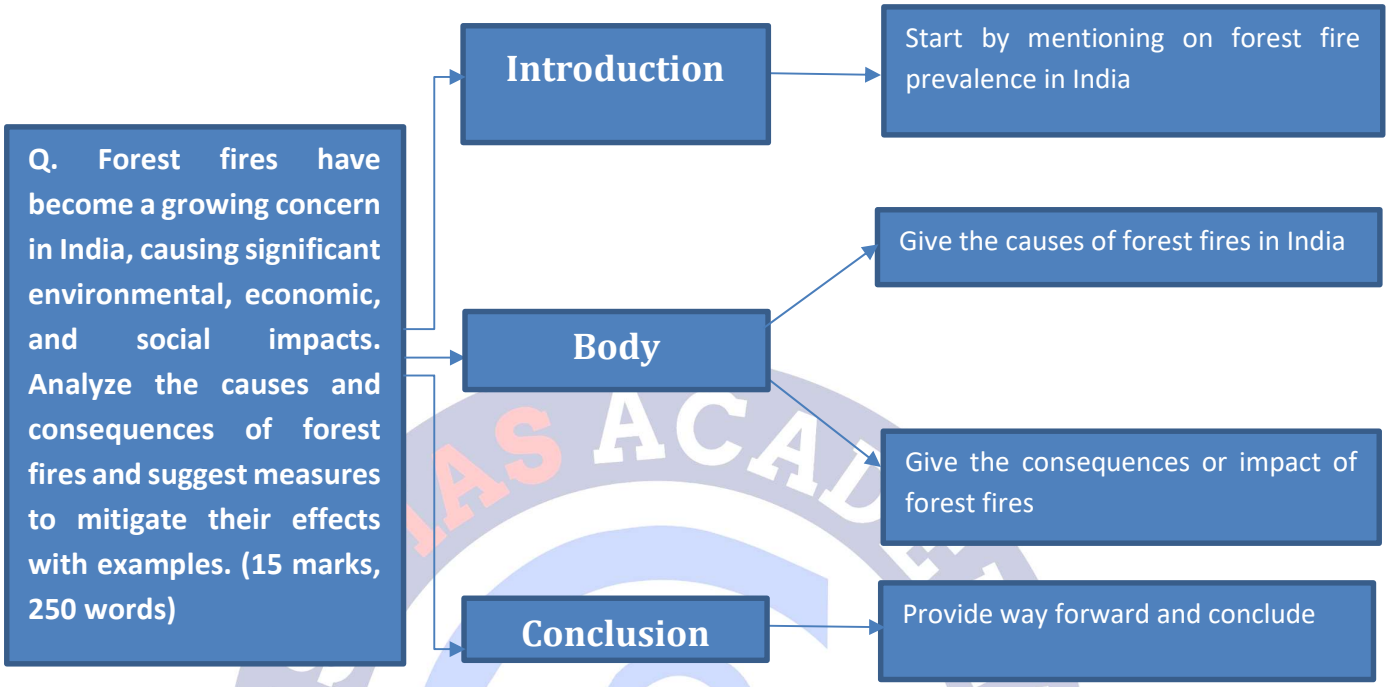
Traditional Methods

- **Seasonal Controlled Grazing**: Allow livestock to graze in fire-prone areas to reduce dry grass and fuel load. Tribals in Rajasthan practice grazing to minimize fire hazards in dry grasslands.
- **Community-Controlled Burns**: Tribals in central India intentionally burn small patches under supervision to prevent large-scale fires.
- **Watchtowers**: Villagers use elevated platforms to monitor and report early fires. Bamboo watchtowers in Jharkhand and Odisha forests.
- **Water Storage Ponds**: Traditional water storage systems are used as firefighting resources. **Bawdi (stepwells)** in Rajasthan serve as water sources during fires.

PRACTICE QUESTION

Q. Forest fires have become a growing concern in India, causing significant environmental, economic, and social impacts. Analyze the causes and consequences of forest fires and suggest measures to mitigate their effects with examples. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Forest fires, also known as wildfires, are uncontrolled blazes that destroy vast stretches of forests and biodiversity. India witnesses forest fires annually, particularly between November and June, with states like Uttarakhand, Odisha, and Chhattisgarh being the most affected. According to the **ISFR 2019**, 36% of India's forest cover is prone to fires, with 4% being extremely fire-prone.

CAUSES OF FOREST FIRES

- **Climatic Conditions**: Prolonged dry spells and heat waves make forests vulnerable. **Uttarakhand forest fires (2020)** were worsened by high temperatures and dry soil.
- **Lightning Strikes**: Common in Northeast India, causing ignition in remote forests.
- **Resinous Trees**: Forests with chir pine trees in Himachal Pradesh are naturally prone to fires.
- **Slash-and-Burn Agriculture**: Jhum cultivation in **Nagaland and Mizoram** leads to uncontrolled fires.

- **Tourism and Negligence**: Discarded cigarettes and campfires in hill stations like Himachal Pradesh often trigger fires.
- **Deforestation and Logging**: Fires are deliberately set to clear land or hide illegal logging activities, as seen in Jharkhand and Odisha.

IMPACTS OF FOREST FIRES

a. Environmental Impact:

- **Loss of Biodiversity**: The **Bandipur National Park fires (2019)** destroyed tiger habitats and medicinal plants.
- **Climate Change**: Fires release CO_2, worsening global warming. **Uttarakhand fires (2016)** emitted 0.2 million tons of CO_2.
- **Soil Degradation**: Nutrient depletion reduces fertility, as seen in the **Western Ghats**.

b. Economic Impact:

- **Destruction of Resources**: The **Uttarakhand fires (2020)** caused ₹1,000 crore in losses.
- **Firefighting Costs**: India spends over ₹1,100 crore annually on fire management.

c. Social Impact:

- **Displacement**: Fires in Madhya Pradesh's Kanha National Park displaced tribal families.
- **Health Issues**: Smoke-related illnesses, such as asthma and bronchitis, rose during the **2021 Chhattisgarh fires**.

MEASURES TO MITIGATE FOREST FIRES

a. Prevention:

- **Firebreaks**: Clear strips of land devoid of vegetation to prevent fire spread. Tribals in central India manually create firebreaks.
- **Controlled Burns**: Australia uses prescribed burns to reduce fuel loads during the off-season.
- **Afforestation**: Planting fire-resistant species like sal and neem, as practiced in Karnataka.

b. Detection and Monitoring:

- **Satellite-Based Systems**: ISRO's **Forest Fire Alert System 3.0** monitors fires in real-time.

- **Drones**: Used in Maharashtra's Tadoba-Andhari Tiger Reserve to detect early fires.
- **Community Firefighters**: Trained locals tackle fires in Odisha's Similipal Reserve.
- **Aerial Firefighting**: Helicopters deployed in the **2021 Uttarakhand fires** helped control the spread.

d. Governance and Policy:

- **Legislation**: Strengthen the **Indian Forest Act (1927)** to penalize negligence and arson.
- **Financial Support**: Utilize CAMPA funds for fire prevention and management.

e. Traditional Practices:

- **Controlled Grazing**: Tribals in Rajasthan use grazing to reduce dry grass.
- **Community Watchtowers**: Bamboo towers in Odisha help monitor fires early.

Forest fires are a significant challenge, driven by both natural and human-induced causes. While India has made progress with initiatives like satellite monitoring and community engagement, the increasing frequency and intensity of fires call for a **multi-pronged approach**. Strengthening governance, leveraging modern technologies, and integrating traditional practices are essential to prevent and mitigate the impact of forest fires, ensuring ecological balance and sustainable development.

21. PM SVAMITVA SCHEME

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development >> Land Reforms

REFERENCE NEWS:

Terming the property cards distributed under the Centre's SVAMITVA scheme a "**guarantee of economic security",** Prime Minister Narendra Modi Saturday said these documents, once issued in all the villages of the country, will unlock economic activity worth over Rs 100 lakh crore.

The Prime Minister was addressing an event to distribute over 65 lakh property cards to property owners in over 50,000 villages across 230 districts through video conferencing.

PM SVAMITVA SCHEME:

SVAMITVA, a **Central Sector** scheme of the **Ministry of Panchayati Raj** provides a '**Record of Rights**' to village household owners with the issuance of legal ownership cards (Property cards/Title deeds) to the property owners by mapping land parcels using drone technology.

- The acronym SVAMITVA stands for **Survey of Villages and Mapping with Improvised Technology in Village Areas**.
- The plan is to survey **all rural properties** using drones and **prepare GIS -based maps** for each village.
- The scheme was launched by PM Modi on National Panchayati Raj Day, on April 24, 2020.
- It aims at creation of **accurate land records** for **rural planning** and reducing **property-related disputes**.
- To bring **financial stability** to the citizens in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.
- Determination of property tax, which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer.
- Creation of survey infrastructure and GIS maps that can be leveraged by any department for their use.
- To support in the preparation of a better-quality **Gram Panchayat Development Plan (GPDP)** by making use of GIS maps.

- Scheme has a **consensus-based approach** to property documentation and this collaborative method will significantly reduce village disputes and strengthened community harmony.
- SVAMITVA is not just about property rights; it's about making our **villages self-reliant** and our rural citizens Atmanirbhar.

SIGNIFICANCE OF SVAMITVA SCHEME:

- **Modern Solution to Land-Related Issues**: The SVAMITVA scheme addresses several persistent issues in rural land governance:
    - **Lack of Accurate Land Records**: It creates digital property maps through drone surveys, ensuring clarity of ownership.
    - **Legal Disputes**: The availability of clear land titles reduces conflicts and litigations, which historically plagued rural India.
    - **Economic Empowerment**: By issuing property cards, it unlocks access to credit and financial services for rural households.
- **Support for Decentralized Governance**: By providing gram panchayats with updated property maps, the scheme strengthens decentralized decision-making and resource allocation.
- **Economic Significance through Unlocking Financial Potential of Land**
    - **Collateral for Credit**: The issuance of property cards enables rural households to use their land as collateral for loans. Over **lakhs of villagers** have accessed loans to start small businesses or invest in agriculture. Many of these **beneficiaries are small and medium farmer families, reducing reliance on informal credit systems.** Rural abadi land worth ₹132 lakh crore has been surveyed, indicating the scale of economic empowerment.
    - **Increased Liquidity and Market Value of Land**: Clear land titles make rural properties more tradable and economically valuable, encouraging investment and entrepreneurship in rural areas.
    - **Tax Revenue**: The scheme facilitates property tax collection by gram panchayats, enhancing their financial resources. States like Haryana have fully implemented property tax collection under the scheme, supporting local development projects.

- **Boosting Infrastructure Development**: Accurate land records allow for better planning of infrastructure, such as roads, schools, and health centres, enhancing the economic potential of rural areas.

- **Social Significance**

    - **Reduction in Land Disputes**: By providing clear and authoritative property titles, the scheme reduces disputes that have historically burdened rural households. In states like Uttar Pradesh, drone surveys and GIS mapping have led to a **decline in litigation**, saving families time and resources.

    - **Empowerment of Marginalized Groups**: States have included **women as co-owners** of property cards, empowering them economically and socially. Joint ownership provisions have been implemented in states like Maharashtra, ensuring women's access to financial benefits.

    - **Social Equity**: The scheme benefits all rural residents, including small farmers and marginalized groups, ensuring broader social inclusion.

- **Improved Governance at the Grassroots:** Property maps and records are available at the gram panchayat level, facilitating better governance and decision-making at the local level. Accurate maps have enabled **encroachment removal** and better management of common village resources in Rajasthan.

- **Political Significance**

    - **Empowering Panchayati Raj Institutions (PRIs)**: By providing gram panchayats with accurate land records, the scheme enhances their capacity for governance, taxation, and planning. In Haryana, gram panchayats have successfully leveraged SVAMITVA data for issuing construction permits and land tax collection.

    - **Addressing a Historical Policy Gap**: The scheme addresses decades of incomplete land reforms, which failed to provide secure ownership for rural households. **Post-independence land reforms**, such as the abolition of zamindari, largely neglected mapping inhabited rural lands. The SVAMITVA scheme fills this gap.

- **Global Recognition and Leadership**: The government's plan to showcase the scheme on global platforms highlights India's leadership in innovative land governance. The upcoming **International Workshop on Land Governance (2025)** will share India's best practices with **40 countries from Africa, Latin America, and Southeast Asia**.

- **Political Stability and Rural Development:** Secure property rights reduce rural distress, indirectly contributing to political stability by fostering trust in governance. The scheme's implementation in conflict-prone areas, like parts of **Uttar Pradesh**, underscores its role in fostering peace and development.

- **Case Studies and Examples**

    - **Haryana**: The state achieved **100% saturation** in the implementation of SVAMITVA, leading to improved revenue collection and reduced disputes.

    - **Uttar Pradesh**: Over **60 lakh property cards** have been distributed, leading to a significant reduction in litigation over rural land ownership.

    - **Tripura**: Full implementation of the scheme has empowered small farmers, who now use property cards to access formal credit systems.

CHALLENGES OF SVAMITVA SCHEME:

- **Inter-State Variability**: Differences in administrative efficiency, land laws, and technical readiness among states create disparities in implementation. While Haryana achieved full saturation, progress in states like Bihar and Jharkhand has been slower due to limited institutional capacity.
- **Legal and Social Challenges**: Resolving disputes over ownership during the objection process is time-consuming, particularly in areas with entrenched land conflicts or informal ownership patterns.
    - In Rajasthan, many properties had overlapping claims, delaying the issuance of property cards.
- **Technical and Infrastructure Issues**: Adverse weather conditions, inaccessible terrains, and lack of technical expertise can delay drone surveys.
    - In hilly regions like Uttarakhand, conducting accurate drone surveys required additional resources and planning.
- **Inclusion Concerns**: Marginalized groups, including women, Dalits, and tribal communities, may face barriers to ownership recognition due to historical discrimination and informal practices.
    - In tribal-dominated regions of Madhya Pradesh, property disputes have arisen due to traditional community landholding systems.
- **Data Integration Challenges**: Integration of SVAMITVA data with existing land records is complex, requiring coordination across multiple departments.
    - In Maharashtra, mismatches between SVAMITVA data and pre-existing land records led to discrepancies during implementation.

- **Dependency on Technology**: Dependence on advanced technology like CORS and GIS requires significant investment and expertise, which is lacking in some states.
    - States with weaker technological infrastructure, like Chhattisgarh, have faced delays in setting up the required infrastructure.

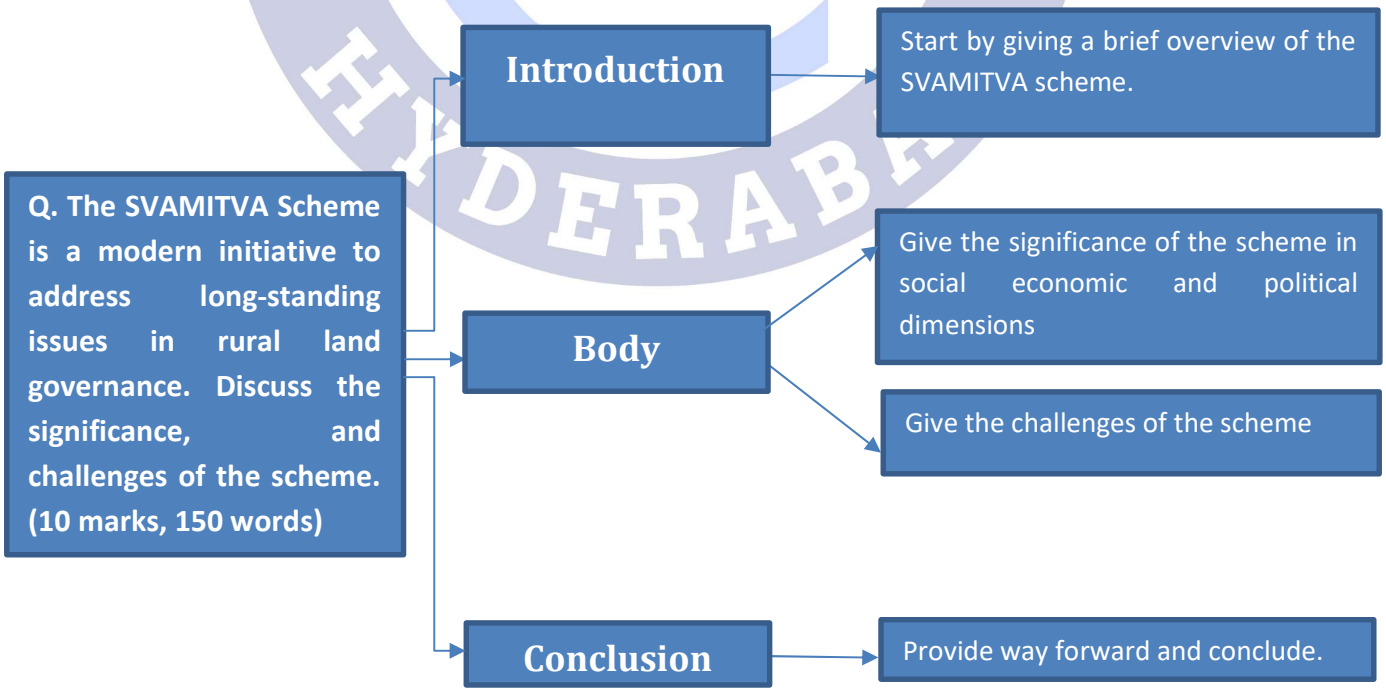
WAY FORWARD:

- **Enhance Awareness**: Conduct extensive awareness campaigns to educate beneficiaries about the scheme's benefits.
- **Strengthen State Capacities**: Provide technical and financial support to lagging states.
- **Focus on Inclusivity**: Ensure marginalized groups have equitable access to property rights.
- **Improve Dispute Resolution Mechanisms**: Expedite conflict resolution processes to build trust among stakeholders.
- **Leverage Global Expertise**: Use international collaborations to adopt best practices and improve implementation.

PRACTICE QUESTION

Q. The SVAMITVA Scheme is a modern initiative to address long-standing issues in rural land governance. Discuss the significance, and challenges of the scheme. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The SVAMITVA (Survey of Villages and Mapping with Improvised Technology in Village Areas) Scheme, launched by the Ministry of Panchayati Raj in 2020, aims to provide legal ownership records to rural households by mapping land parcels using advanced technologies like drones and GIS.

LONG STANDING ISSUES IN RURAL LAND GOVERNANCE:

- **Zamindari Abolition**: Post-independence reforms abolished feudal systems but failed to ensure equitable land distribution. Land continued to concentrate in the hands of a few.
- **Land Ceiling Legislation**: While laws capped the maximum landholding size, loopholes and weak enforcement allowed large landowners to retain excess land.
- **Outdated Records**: Many records date back to colonial times and do not reflect current ownership or usage patterns.
- **Litigation Overload**: Land disputes constitute a significant portion of pending cases in Indian courts.
- **Marginalized Communities**: Women, Dalits, Adivasis, and other vulnerable groups often face systemic exclusion from land ownership.
- **Cultural and Social Barriers**: Patriarchal norms limit women's inheritance and ownership rights, despite legal provisions.
- **No Formal Titles**: Many rural properties are transferred through informal means without legal documentation, leading to insecure ownership.
- **Informal Lending**: Absence of formal property titles prevents land from being used as collateral, increasing dependence on high-interest informal loans.
- **Degradation of Commons**: Grazing lands, forests, and water bodies are poorly managed, often due to encroachments or lack of clear ownership.

SIGNIFICANCE OF THE SCHEME

1. **Economic Impact**: Unlocks the financial potential of land by enabling its use as collateral for credit. Rural land worth ₹132 lakh crore has been surveyed, enabling access to loans and financial resources for lakhs of villagers. States like Haryana have leveraged property tax collection for local development.

2. **Social Impact**: Reduces land disputes, saving families from prolonged litigation. Empowers women and marginalized groups through joint ownership of property cards. Improves governance through accurate property records, as seen in Rajasthan's removal of encroachments.

3. **Political Impact**: Strengthens Panchayati Raj Institutions (PRIs) by equipping them with reliable data. Addresses historical gaps in land reforms, such as neglected mapping of inhabited rural areas.

CHALLENGES IN IMPLEMENTATION

1. **Inter-State Variability**: Uneven progress due to differences in administrative and technical capacities. Haryana achieved 100% saturation, while Bihar and Jharkhand lag behind.

2. **Social and Legal Barriers**: Resolving disputes during documentation is time-consuming, especially in conflict-prone regions like Rajasthan.

3. **Technical and Infrastructure Issues**: Challenges in drone surveys in hilly terrains like Uttarakhand and areas with poor infrastructure.

4. **Inclusion Concerns**: Women, Dalits, and tribal communities face barriers due to historical discrimination and informal practices. Disputes in tribal-dominated regions of Madhya Pradesh over traditional landholding systems.

5. **Dependency on Technology**: Advanced technologies like CORS and GIS require significant investment and expertise. States like Chhattisgarh face delays due to weaker technological infrastructure.

6. **Data Integration**: Integrating SVAMITVA data with existing land records remains a complex task, as seen in Maharashtra's discrepancies.

WAY FORWARD

1. **Awareness Campaigns**: Educate rural populations about the scheme's benefits and procedures.

2. **Strengthen State Capacities**: Provide financial and technical assistance to lagging states for drone surveys and infrastructure development.

3. **Enhance Inclusivity**: Ensure equitable property rights for women, Dalits, and tribal communities.

4. **Improve Dispute Resolution**: Streamline processes to resolve ownership disputes efficiently.
5. **Leverage Global Expertise**: Collaborate with international bodies to adopt best practices and technologies.

The SVAMITVA scheme is a transformative initiative addressing long-standing issues in rural land governance, including disputes, lack of financial empowerment, and poor local planning. With targeted reforms and global collaboration, it can serve as a model for innovative land governance, fostering inclusive growth and rural prosperity in India.

22. FOREIGN INVESTMENT IN INDIA

iMPACT ANALYSIS

SYLLABUS:

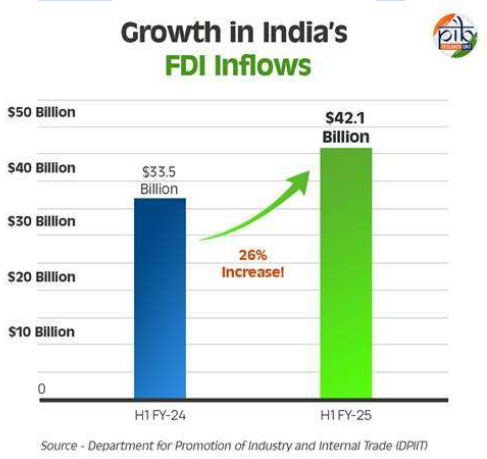
GS 3 > Indian Economy >> External Sector

REFERENCE NEWS:

Union minister Ashwini Vaishnaw, led the largest ever Indian delegation of five Union ministers and several leaders from states including three chief ministers, said trust and talent are the biggest factors attracting the world to India. As the five-day World Economic Forum Annual Meeting ended on 24th January, Indian leaders said they could see trust for India in eyes of all global leaders and that was reflected in investment commitments totalling over Rs 20 lakh crore with Maharashtra grabbing the biggest pie of almost 80%.

FOREIGN INVESTMENT:

Foreign investment plays a pivotal role in India's economic growth by providing capital, technology, and access to global markets. It consists of two major components: **Foreign Direct Investment (FDI)** and **Foreign Portfolio Investment (FPI)**. These investments help bridge the gap between domestic savings and investment requirements, enabling India to achieve its developmental goals.



FDI has played a transformative role in India's development by providing substantial **non-debt financial resources**, fostering technology transfers, and creating employment opportunities.

India has achieved a remarkable milestone in its economic journey, with gross foreign direct investment (FDI) inflows reaching an impressive **$1 trillion since April 2000**. This landmark achievement was bolstered by a nearly **26% rise in FDI to $42.1 billion** during the first half of the current fiscal year.

- **Foreign Direct Investment (FDI)**: FDI involves **long-term investments** where a foreign entity acquires ownership or control over a business in India. It is associated with managerial control and the transfer of technology.
  - **Manufacturing**: Companies like **Apple** and **Samsung** have set up manufacturing facilities in India under the "Make in India" initiative.
  - **E-Commerce**: **Amazon** and **Walmart (Flipkart)** are prominent players.
  - **Automobiles**: Foreign companies like **Hyundai**, **Suzuki**, and **Tesla** are major investors.
- **Foreign Portfolio Investment (FPI)**: FPI refers to short-term investments by foreign investors in India's financial assets, such as equities, bonds, and mutual funds. These investments are made through stock exchanges. FPIs are highly liquid and influenced by global market conditions, making them volatile compared to FDI.
  - Global investors buying shares of Indian companies like **TCS**, **Infosys**, or government bonds.

CONSTITUENTS OF FOREIGN INVESTMENT

- **Equity Investments:** Direct equity investments by foreign companies into Indian businesses in the form of FDI and equity investments by foreign institutional investors (FIIs) in Indian stock markets as FPI.
- **Debt Instruments:** Investments in Indian government securities and corporate bonds by foreign investors. India issued **sovereign green bonds** to attract global investments in sustainable projects.
- **Venture Capital and Private Equity:** Foreign investors providing growth capital to Indian startups. Investments by **Sequoia Capital** and **SoftBank** in companies like **Paytm**, **Ola**, and **Zomato**.
- **External Commercial Borrowings (ECBs):** Indian companies borrowing from foreign financial institutions at competitive interest rates. Reliance Industries raised funds through ECBs for its expansion projects.
- **NRI Investments:** Investments by Non-Resident Indians (NRIs) in real estate, bank deposits, and startups.

KEY DRIVERS OF FOREIGN INVESTMENT IN INDIA:

- **Competitiveness and Innovation**: India's ranking in the World Competitive Index 2024 jumped three positions to 40th. India was named as the 48th most innovative country among the top 50 nations, securing the 40th position out of 132 economies in the Global Innovation Index 2023, a significant improvement from its 81st position in 2015. These rankings highlight the country's progress in enhancing its **innovation ecosystem and competitive edge.**
- **Global Investment Standing**: India was the **third largest recipient of greenfield projects** with 1,008 greenfield project announcements, as per the World Investment Report 2023. The number of international project finance deals in India also increased by 64%, making it the recipient of the second largest number of international project finance deals.

- **Large and Growing Consumer Market**: India has a population of over **1.43 billion**, making it one of the **largest consumer markets** globally. The rising middle class and **increasing disposable incomes** further enhance consumer demand.
    - **Unilever**, a global FMCG giant, derives over **30% of its revenues** from emerging markets like India. Its Indian subsidiary, Hindustan Unilever Ltd. (HUL), is one of the largest FMCG companies in the country.
- **Investor-friendly FDI Policies**: India has progressively liberalized its FDI policies, allowing up to **100% FDI** in several sectors, including e-commerce, renewable energy, and single-brand retail.
    - **Amazon** invested over **$6.5 billion** in India to expand its e-commerce operations. Similarly, **IKEA** entered the Indian market with 100% FDI under single-brand retail norms.
- **Reforms to Ease Doing Business**: Comprehensive reforms like **Goods and Services Tax (GST)** and **Insolvency and Bankruptcy Code (IBC)** have streamlined regulatory processes,

improving the ease of doing business. Further, to simplify tax compliance for startups and foreign investors, the Income Tax Act, 1961 has been amended in 2024 to abolish angel tax and to reduce income tax rate chargeable on income of a foreign company.

- **Strategic Geographic Location**: India's location between East and West Asia, coupled with a vast coastline, positions it as a global supply chain hub.
    - **Apple** shifted some of its manufacturing operations to India, partnering with suppliers like Foxconn and Wistron, as part of its strategy to diversify supply chains.
- **Expanding Digital Economy**: India's digital economy is growing rapidly, driven by internet penetration and government initiatives like **Digital India**. **Google** committed **$10 billion** to its Google for India Digitization Fund, focusing on connectivity and digital infrastructure. India has over **800 million internet users**, making it the second-largest online market globally.
- **Infrastructure Development**: Mega projects like **Gati Shakti**, **Smart Cities Mission**, and modernized ports attract infrastructure-focused foreign investments. India is projected to spend **$1.4 trillion on infrastructure** under the National Infrastructure Pipeline (NIP) by 2025.
- **Young and Skilled Workforce**: India has the world's largest youth population, with **66% of its population under the age of 35**, and produces millions of skilled professionals annually. India produces over **1.5 million engineers annually**, providing a competitive edge in sectors like IT and manufacturing.

CHALLENGES OF INDIA IN ATTRACTING FOREIGN INVESTMENT:

- **Policy Uncertainty and Frequent Regulatory Changes**: Inconsistent policies and frequent regulatory changes create uncertainty for foreign investors. Investors face difficulties in long-term planning, reducing India's appeal as a stable investment destination.
    - In 2020, India restricted FDI from neighbouring countries (especially China) under the **automatic route**, citing national security concerns. While justified, this abrupt policy change impacted existing and potential investments from Chinese firms like **Xiaomi** and **Oppo**.
- **Bureaucratic Red Tape**: Despite improvements in the ease of doing business rankings, complex administrative procedures and delays continue to deter investors. Land acquisition and environmental clearances for industrial projects remain cumbersome and time-consuming.
- **Infrastructure Deficiencies**: Inadequate infrastructure in logistics, transportation, and utilities increases operational costs for businesses. Despite its potential as a manufacturing hub, India struggles with high logistics costs (14% of GDP) compared to

countries like China (8%). India ranked **47th** in the 2022 Logistics Performance Index, reflecting the need for infrastructure improvement.

- **Taxation and Compliance Issues**: Although India has reformed its tax system with measures like GST, complex tax compliance procedures remain a concern. Retrospective tax demands, such as the high-profile cases involving **Vodafone** and **Cairn Energy**, caused apprehension among foreign investors.
- **Land Acquisition and Labor Laws**: Difficulty in acquiring land and rigid labour laws pose significant hurdles to setting up industries in India. India's labour market flexibility is ranked low, despite reforms like the **2020 labour codes** which aim to simplify labour regulations.
- **Lack of Uniformity in State-Level Policies**: India's federal structure often results in inconsistent policies across states, complicating operations for businesses. States like Gujarat and Maharashtra are investor-friendly, but others lag due to bureaucratic inefficiencies and lack of incentives.
- **Judicial Delays and Contract Enforcement**: Prolonged legal disputes and delayed enforcement of contracts discourage investments. Arbitration cases like **Vodafone vs. India** and delays in infrastructure-related litigation affect investor confidence. India ranks **163rd** in enforcing contracts as per the **World Bank Ease of Doing Business Report (2020)**, with cases taking over four years to resolve on average.
- **Geopolitical Risks and Trade Barriers**: Global tensions, coupled with protectionist policies, create challenges for foreign investors.
- **High Cost of Capital**: High interest rates and limited access to affordable credit deter foreign companies, especially in capital-intensive sectors. Foreign companies often prefer economies like Vietnam or Thailand due to lower financing costs. India's corporate borrowing rates are among the highest in Asia, reducing its competitiveness.
- **Competition from Other Emerging Markets**: Countries like Vietnam, Indonesia, and Bangladesh are becoming preferred destinations for foreign investors due to lower costs and simplified regulations.
- **Environmental and Social Concerns**: Large-scale industrial projects often face opposition due to environmental and social concerns.

WAY FORWARD TO ADDRESS CHALLENGES:

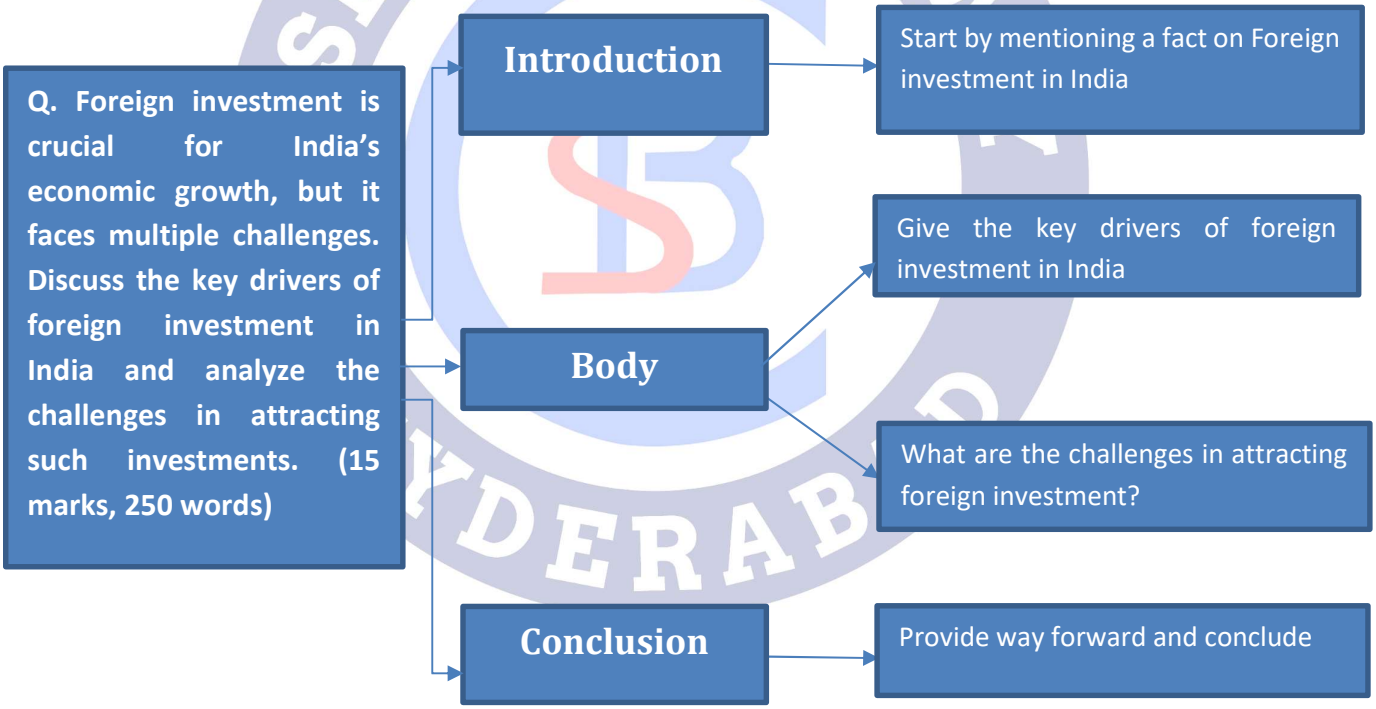
- **Streamlining Policies**: Ensure consistent and transparent policies to build investor confidence.
- **Infrastructure Upgrades**: Accelerate projects like **Gati Shakti** and **National Infrastructure Pipeline (NIP)**.

- **Judicial Reforms**: Establish fast-track courts for dispute resolution and contract enforcement.
- **Competitive Taxation**: Maintain a business-friendly tax regime and avoid retrospective taxation.
- **Promoting Ease of Doing Business**: Simplify land acquisition, labour laws, and compliance procedures.

PRACTICE QUESTION

Q. Foreign investment is crucial for India's economic growth, but it faces multiple challenges. Discuss the key drivers of foreign investment in India and analyze the challenges in attracting such investments. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Foreign investment serves as a cornerstone for India's economic growth, providing capital, technology, and access to global markets. India has emerged as a preferred investment destination, achieving a remarkable milestone in its economic journey, with gross foreign direct investment (FDI) inflows reaching an impressive **$1 trillion since April 2000**.

KEY DRIVERS OF FOREIGN INVESTMENT IN INDIA

1. **Large Consumer Market**: Over **1.4 billion**, with a growing middle class and rising disposable incomes.
    - **Unilever** derives over **30% of its revenues** from markets like India. Hindustan Unilever Ltd. (HUL) is a leader in FMCG in India.
2. **Investor-Friendly Policies**: Liberalized FDI policies allow **100% FDI** in sectors like e-commerce and renewable energy.
    - **Amazon** invested over **$6.5 billion** to expand its Indian operations.
3. **Strategic Location**: Positioned between East and West Asia, India is ideal for global supply chains.
    - **Apple** shifted manufacturing to India, partnering with Foxconn and Wistron.
4. **Digital Economy Growth**: Over **800 million internet users**, making it the second-largest online market globally.
    - **Google** committed **$10 billion** to its Google for India Digitization Fund.
5. **Infrastructure Development**: Initiatives like **Gati Shakti** and the **National Infrastructure Pipeline (NIP)** worth **$1.4 trillion** by 2025.
    - **Brookfield Asset Management** invested over **$7 billion** in Indian infrastructure.
6. **Young Workforce**: Largest youth population globally, with **66% under 35 years**.
    - India produces over **1.5 million engineers annually**.
7. **Renewable Energy Focus**: Achieving **500 GW of non-fossil fuel capacity by 2030**.
    - **TotalEnergies** partnered with **Adani Green Energy** for solar projects.

CHALLENGES IN ATTRACTING FOREIGN INVESTMENT

1. **Policy Uncertainty**: Frequent regulatory changes deter long-term planning. Restrictions on FDI from neighbouring countries like China in 2020 disrupted existing investments.
2. **Bureaucratic Red Tape**: Complex administrative procedures and delays persist. Land acquisition delays caused South Korea's **Posco** to withdraw from a $12 billion project in Odisha.

3. **Infrastructure Deficiencies**: High logistics costs (**14% of GDP**) compared to China's **8%**. India ranked **47th** in the 2022 Logistics Performance Index.
4. **Taxation and Compliance Issues**: Cases like **Vodafone** and **Cairn Energy** highlighted retrospective tax issues, which deter investor confidence.
5. **Judicial Delays**: India ranks **163rd** in enforcing contracts, with cases taking over four years on average. Delays in arbitration cases like **Vodafone vs. India**.
6. **Competition from Emerging Markets**: Countries like Vietnam and Indonesia offer lower costs and better ease of doing business. Vietnam attracted **$27.72 billion in FDI in 2022**, challenging India's position.
7. **Environmental and Social Concerns**: Industrial projects face opposition due to environmental protests. Closure of the **Sterlite Copper Plant** in Tamil Nadu.

WAY FORWARD

1. **Policy Stability**: Ensure consistent and transparent regulations to build investor trust.
2. **Infrastructure Boost**: Accelerate projects like **Gati Shakti** and modernize ports to reduce logistics costs.
3. **Judicial Reforms**: Establish fast-track courts for contract enforcement and dispute resolution.
4. **Competitive Tax Regime**: Avoid retrospective taxation and simplify compliance.
5. **Sector-Specific Incentives**: Promote high-growth sectors like renewable energy, digital technology, and manufacturing.
6. **Ease of Doing Business**: Simplify land acquisition and labor laws to attract industrial investments.

India's vast market, young workforce, and reform-driven policies make it a favourable destination for foreign investment. However, addressing challenges like policy uncertainty, infrastructure gaps, and judicial delays is crucial. A focused approach can help India unlock its true potential as a global investment hub.

23. MAN-ANIMAL CONFLICT

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment and Ecology >> Habitat destruction

REFERENCE NEWS:

A member of the Rapid Response Team was attacked by the man-eating tiger during an operation to capture it at Pancharakolly, near Mananthavady in Wayanad on January 26, 2025 morning. The operation followed the tragic incident on 24th January, when the same tiger mauled a tribal woman to death while she was harvesting coffee cherries at the Priyadarshini Estate at Pancharakolly.

MAN-ANIMAL CONFLICT:

Human-animal conflict denotes adverse encounters between humans and wild animals, resulting in detrimental outcomes for both human communities and their resources, as well as wildlife and their habitats. This conflict arises from the **competition between humans and wildlife for natural resources**, impacting human food security and the overall well-being of both humans and animals.

CAUSES OF HUMAN-WILDLIFE CONFLICT:

- **Habitat Fragmentation and Encroachment**: Expansion of agricultural land and urban areas into forests has led to the fragmentation of wildlife habitats. Infrastructure projects like roads, railways, and dams dissect natural habitats.
    - India lost **2.5 million hectares of forest cover** between 2001 and 2020 (Global Forest Watch). In Odisha and Assam, elephants raid farmlands due to habitat encroachment, leading to **100+ human deaths annually**.
- **Increase in Wildlife Population**: Conservation efforts have led to a rise in populations of certain species like tigers, leopards, and elephants, increasing their interactions with humans.
    - India is home to around **30,000 elephants**, accounting for 60% of the Asian elephant population. The **tiger population reached 3,167 in 2022**, up from 1,411 in 2006.

- **Agricultural Expansion**: Cropland near forested areas attracts wildlife like elephants, wild boars, and nilgai, which raid crops.
    - The **Ministry of Environment, Forest and Climate Change (MoEFCC)** estimates crop losses from wildlife at over **₹200 crores annually**. Nilgai damages up to **30% of crops annually** in states like Uttar Pradesh and Bihar. In Jharkhand, **wild elephants destroyed paddy fields in 2022**, causing losses worth **₹7 crore**. Nilgai has been declared vermin in Bihar to mitigate its impact on agriculture
- **Resource Competition**: Water scarcity and depletion of natural food sources drive animals toward human settlements.
    - **25% of India's forest area** is degraded due to overexploitation (Forest Survey of India). Climate change-induced droughts and wildfires have exacerbated the scarcity of water in forest ecosystems. In Maharashtra, tigers from the Tadoba Andhari Reserve venture into villages due to water shortages in summer. Elephants migrate to agricultural fields in search of food during lean seasons in states like West Bengal.
- **Climate Change**: Altered weather patterns and resource availability force wildlife to move closer to human habitats.
    - India experienced **1.5 times more droughts** in the last decade compared to the previous one (IMD data). Frequent floods in Kaziranga National Park force animals to move to nearby villages. In Rajasthan's Sariska Tiger Reserve, water scarcity often drives tigers into villages. In Assam, during the annual Brahmaputra floods, animals like rhinos and deer move out of Kaziranga National Park, increasing human-wildlife encounters
- **Population Growth and Urbanization**: Increasing human populations have led to settlements encroaching on forested areas. India's population density is **464 people per km²** (World Bank, 2021), leading to greater proximity to forests and wildlife habitats. Urban sprawl near forests in Mumbai and Bengaluru has increased leopard sightings in residential areas.
    - In 2022, leopards attacked **20 people** in Mumbai's Aarey Colony, adjacent to Sanjay Gandhi National Park. Bengaluru witnesses frequent human-snake encounters due to expanding urban areas into forests.
- **Poor Land-Use Planning and Corridor Disruption:** Development projects like highways, railways, and dams disrupt wildlife corridors, isolating animal populations and forcing

them into human settlements. India currently has more than 700 protected areas. However, 70% of elephant ranges, 40% of lion ranges and 35% of tiger ranges are outside protected areas (WWF).

- India has identified **88 elephant corridors**, but **over 40% of them are obstructed** by human activities (Wildlife Trust of India). Linear infrastructure projects in India have caused a **64% increase in wildlife road kills** since 2015. The **NH-44 highway in Assam** cuts through Kaziranga National Park, resulting in frequent wildlife-vehicle collisions, especially during floods. The **Assam-Arunachal Pradesh railway project** frequently leads to elephant deaths due to train collisions. The Ken-Betwa River Linking Project threatens to disrupt tiger habitats in Panna Tiger Reserve.

- **Poor Waste Management:** Open garbage dumps near human settlements attract scavengers like monkeys, stray dogs, and even leopards, escalating conflicts. Urban areas generate over **62 million tonnes of waste annually**, with 70% of it left untreated (MoEFCC). Leopards and bears often scavenge garbage in areas like Himachal Pradesh and Maharashtra.

  - In Shimla, monkeys regularly invade homes to scavenge food, causing injuries and property damage. Leopards are frequently spotted near garbage dumps in Mumbai suburbs, increasing the risk of attacks.

- **Cultural and Religious Factors**: In rural India, certain species like monkeys and peafowl are considered sacred and are not harmed, leading to overpopulation and more conflicts.

  - The population of rhesus macaques in India has increased by **50% in two decades** due to feeding by humans. In Himachal Pradesh, macaques damage crops and homes, causing losses worth **₹2,200 crores annually**. Peafowl raiding crops in Rajasthan is a major concern for farmers.

IMPACTS OF RISING HUMAN-WILDLIFE CONFLICT IN INDIA:

- **Loss of Human Lives:** HWC leads to injuries and fatalities, creating fear and resentment among local communities. According to the Ministry of Environment, Forest and Climate Change (MoEFCC), **500 humans 100 elephants die annually** due to human-elephant conflicts, and **80 people** are killed by tigers each year. Between 2015 and 2020, India recorded **2,361 human deaths caused by wild elephants**.
- **Economic Losses Due to Crop and Property Damage:** Wild animals frequently raid crops and destroy property, leading to significant economic losses for farmers.

- The Wildlife Institute of India estimates that **₹200-300 crore worth of crops** are destroyed annually due to wildlife incursions. In Bihar, crop losses caused by nilgai and wild boars are estimated at **₹1,000 crores annually**.

- **Retaliatory Killing of Wildlife:** Rising anger and frustration among local communities lead to the retaliatory killing of animals, including endangered species.
  - Between 2014 and 2021, India reported **494 elephant deaths** due to electrocution and poisoning. Over **56 tigers** were killed in retaliatory attacks in the same period (National Tiger Conservation Authority).
- **Disruption of Ecosystems and Loss of Biodiversity:** The killing of key species disrupts ecosystems, **affecting predator-prey dynamics and ecological balance**.
  - Elephants and tigers, as keystone species, play a critical role in maintaining forest ecosystems. Their decline impacts biodiversity significantly. Fragmentation of wildlife corridors impacts the genetic diversity of species, as seen in the **Western Ghats tiger populations**.
- **Human Displacement and Loss of Livelihoods:** Frequent wildlife incursions force communities to abandon farmlands or relocate, disrupting livelihoods and leading to socio-economic challenges.
  - According to the Wildlife Trust of India, over **15,000 families** are displaced annually due to HWC near protected areas. Farmers near Kaziranga National Park lose **30-40% of their income** due to elephant raids.
- **Mental Stress and Fear Among Local Communities:** Living in conflict-prone areas causes psychological stress and insecurity among local populations.
  - Studies conducted in Karnataka and Uttarakhand reveal that **80% of farmers** near forests suffer from anxiety due to crop losses and potential animal attacks. Women in rural areas face safety issues while collecting firewood or water due to the risk of leopard and tiger encounters. In Kerala, recurring wild boar attacks have led to protests demanding their inclusion as "vermin."
- **Increased Pressure on Wildlife Populations:** Fear of human retaliation and shrinking habitats force wildlife to avoid natural migration routes, leading to stress, reduced reproduction rates, and genetic isolation.
  - Elephants in fragmented habitats like the Northern Western Ghats face **30% higher stress levels**, as per Wildlife Institute of India research. Tigers in smaller reserves like Ranthambhore are at risk of inbreeding due to habitat fragmentation. The lion population in Gir National Park is affected by habitat congestion and the risk of inbreeding.
- **Decline in Tourism and Conservation Funding:** Frequent conflicts in or near protected areas deter tourists, impacting local economies and conservation funding. Wildlife

tourism contributes **₹247 billion annually** to India's economy (World Travel & Tourism Council, 2022).

- Areas like Manas National Park (Assam) have seen a decline in tourists due to the risks posed by wildlife conflicts. The closure of parts of Bandhavgarh National Park during tiger conflicts led to a decline in tourist visits.

- **Conflict Between Stakeholders:** Tensions arise between local communities, forest departments, and conservationists due to disagreements over conflict management. Compensation delays and inadequate responses to conflicts exacerbate mistrust between villagers and government authorities.
    - Communities around protected areas like Rajaji National Park (Uttarakhand) often protest the lack of effective measures to control wildlife incursions.
- **Economic Costs for Conservation Programs:** Rising conflicts strain government budgets due to increased spending on mitigation measures like compensation, fencing, and wildlife monitoring.
    - India spends over **₹100 crores annually** on compensation for human-wildlife conflict. The cost of constructing elephant corridors and fencing projects runs into **₹1,500 crores** nationwide. The Tamil Nadu government spent **₹300 crores** on electric fencing to reduce human-elephant conflicts in 2021. Odisha allocated **₹40 crores** in 2022 for compensation payments and conflict mitigation programs.

WAY FORWARD:

- **Co-adaptation:** Refers to the idea of people and animals modifying their own behaviour to navigate the presence of one another. In India, people have historically co-adapted with wildlife through various mechanisms, be it cultural, behavioural or societal.
- **Sociocultural Acceptance**: Lions are culturally revered, and abandoned livestock (due to legal and traditional practices) forms a significant part of their diet. Surveys reveal that even people in high-conflict villages display tolerance towards lions, contrary to the hypothesis that more conflicts reduce tolerance.
- **Listing as disasters under SDRF:** In **UP** man-animal conflict is kept under listed disasters. Amid repeated deaths from animal attacks and rising anger over them, Kerala on declared man-animal conflict as a state-specific disaster, becoming the first state in the country to do so.
- **Bio-fencing: Uttarakhand** carried out bio-fencing by growing plants to prevent encroachment
- **Casting seed balls:** Odisha did this to enrich food stock for wild elephants
- **Community-Based Conservation:** Encourage community participation in wildlife conservation by creating incentives and fostering ownership.

- Van Gujjars (forest-dwelling tribes) in Uttarakhand actively contribute to tiger conservation efforts.

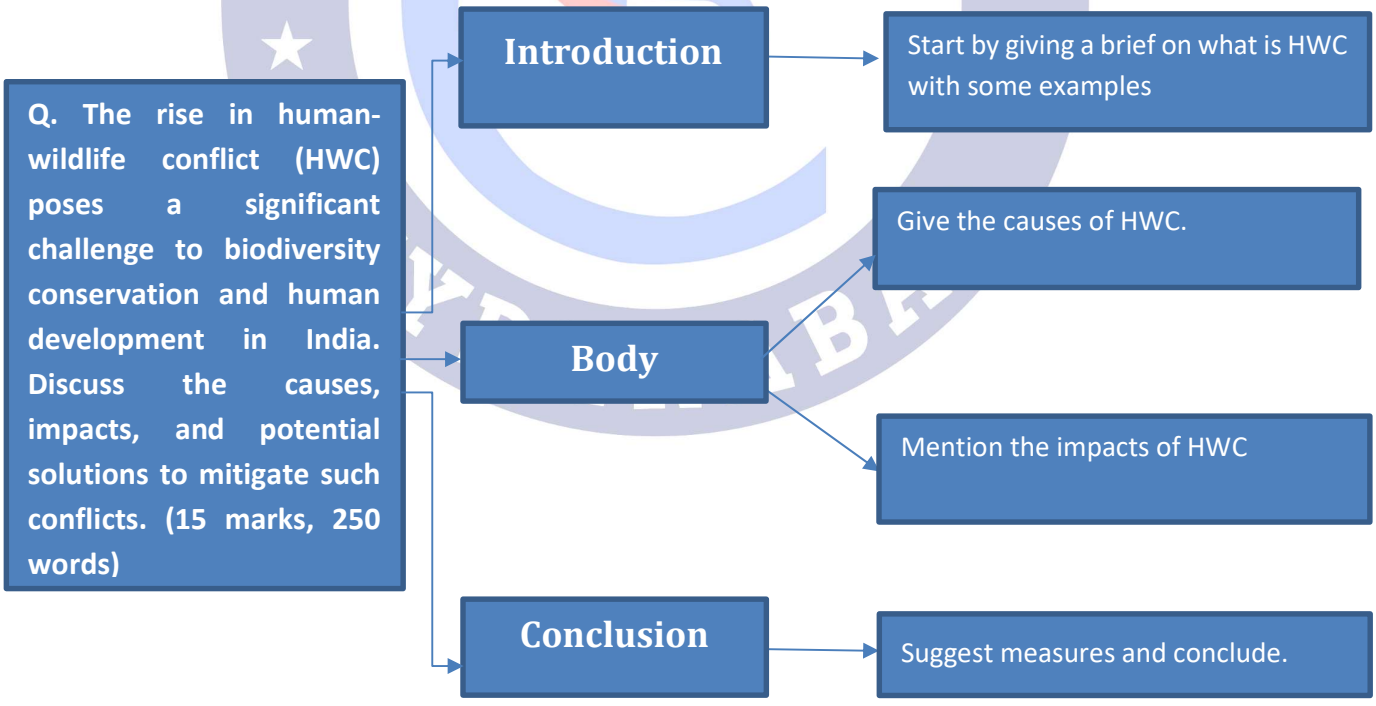
- **Eco-Tourism Initiatives**: Promote regulated tourism that benefits locals, such as the revenue-sharing model in Periyar Tiger Reserve, Kerala.
    - **Kenya's Maasai Mara Model**: Revenue from eco-tourism is shared with local communities, reducing retaliatory killings of wildlife.
- **Strengthen Livestock and Crop Protection:** Construct predator-proof enclosures to safeguard cattle. Provide livestock insurance schemes to mitigate economic losses.
- **Use of Deterrents:** Implement barriers like solar-powered fences, chili-dung fences, and bio-repellents to prevent crop-raiding by elephants and wild boars.
    - **Beehive Fencing in Africa**: Installing beehives around farms has been successful in deterring elephants.
- **Enhanced Compensation Schemes:** Revise compensation rates to align with market values and reduce delays in disbursal. Introduce online portals for transparent and fast-tracked claims processing. Include losses caused by lesser-known species (e.g., wild boars, nilgai) in compensation schemes.
    - The NTCA (National Tiger Conservation Authority) recommends increasing the ex-gratia amount for human deaths caused by tiger attacks.
- **Use of Technology for Conflict Mitigation:** Equip animals with GPS collars to track their movements and prevent conflicts in advance.
    - Lions in Gir Forest are monitored using radio collars. AI-based virtual wall and human-animal conflict mitigation system, sounding alert systems are enabled in forest bordering villages of Maharashtra.
- **Early Warning Systems:** Use drones, motion sensors, and SMS alerts to warn villagers of approaching wildlife.
    - Snow Leopard Conflict Resolution in Himachal Pradesh: GPS-collared snow leopards help track movements and prevent retaliatory killings.
- **Relocation and Translocation of Wildlife:** Relocate wildlife from conflict-prone areas to safer habitats while ensuring their well-being.
    - Elephant translocation programs in Karnataka and Tamil Nadu have reduced conflicts in agricultural zones. The Supreme Court-mandated relocation of Asiatic lions from Gir to Madhya Pradesh is a key strategy to reduce habitat pressure.
- **Legal and Policy Frameworks:** Enforce the Wildlife Protection Act, 1972, to prevent illegal encroachments and retaliatory killings. Periodically review and revise national conservation policies to adapt to emerging challenges.
    - The National Board for Wildlife (NBWL) emphasizes creating a "National Human-Wildlife Conflict Mitigation Strategy" to unify conflict management efforts.

- **Conflict Hotspot Identification:** Identify conflict-prone areas and prioritize interventions using scientific studies.
    - Amreli and Gir Somnath districts in Gujarat were identified as lion conflict hotspots through surveys. The Elephant Task Force (2010) suggested mapping elephant corridors and declaring conflict hotspots as ecologically sensitive zones.
- **Long-Term Measures for Sustainable Coexistence:** Provide alternative livelihoods (e.g., beekeeping, handicrafts) to reduce dependence on forest resources.
- **Conservation-Based Economy:** Promote wildlife tourism as a means of economic upliftment while maintaining strict regulations.
    - Periyar Tiger Reserve, Kerala: Local communities earn livelihoods through eco-tourism, reducing reliance on forest exploitation.

PRACTICE QUESTION

Q. The rise in human-wildlife conflict (HWC) poses a significant challenge to biodiversity conservation and human development in India. Discuss the causes, impacts, and potential solutions to mitigate such conflicts. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Human-wildlife conflict (HWC) refers to adverse interactions between humans and wildlife, often leading to loss of life, economic damage, and biodiversity threats. In India, with its high population density (464 people/km²) and rich biodiversity, HWC has become increasingly frequent, as highlighted by the recent tiger attack in Wayanad, Kerala (January 2025).

CAUSES OF HUMAN-WILDLIFE CONFLICT

1. **Habitat Fragmentation**: Expansion of urban and agricultural areas disrupts wildlife habitats. India lost **2.5 million hectares of forest cover between 2001-2020** (Global Forest Watch).
    - The **NH-44 highway in Assam** cuts through Kaziranga National Park, causing frequent wildlife-vehicle collisions.
2. **Population Growth and Urbanization**: Proximity to forests increases encounters.
    - Leopard attacks in **Mumbai's Aarey Colony** due to urban sprawl.
3. **Resource Competition**: Water scarcity and food shortages force wildlife into human settlements.
    - Tigers in Tadoba Andhari Reserve entering villages during summer.
4. **Conservation Success**: Rising populations of tigers (3,167 in 2022) and elephants (30,000) increase interactions.
    - Increased lion conflicts in Gujarat due to their expanding range.
5. **Climate Change**: Altered weather patterns lead to resource scarcity.
    - Annual Brahmaputra floods force animals out of **Kaziranga National Park**.
6. **Cultural and Religious Factors**: Sacred species like monkeys and peafowl are left unchecked, leading to overpopulation.
    - Rhesus macaques causing **₹2,200 crores in crop damage annually** in Himachal Pradesh.

IMPACTS OF HUMAN-WILDLIFE CONFLICT

1. **Loss of Human Lives**: **500 deaths annually** due to elephants; **80 deaths** from tigers (MoEFCC, 2020). The tiger attack in Wayanad killed a tribal woman and injured a forest official.
2. **Economic Losses**: Annual crop damage exceeds **₹200 crores**. Wild boar and nilgai damage crops worth **₹1,000 crores** in Bihar.
3. **Retaliatory Killings**: Rising frustration leads to the killing of endangered species. **494 elephant deaths (2014-2021)** due to poisoning or electrocution.
4. **Ecosystem Disruption**: Killing keystone species affects biodiversity. Tigers in fragmented habitats, like Ranthambhore, face inbreeding risks.
5. **Human Displacement**: Over **15,000 families** displaced annually due to wildlife incursions. Farmers near Kaziranga lose **30-40% of income** due to elephant raids.

SOLUTIONS TO MITIGATE HUMAN-WILDLIFE CONFLICT

1. **Habitat Conservation**: Protect wildlife corridors and restore degraded habitats.
    - Securing **elephant corridors** in Assam and Odisha.
2. **Community-Based Conservation**: Engage locals in eco-tourism and incentivize conservation efforts.
    - **Van Gujjars** in Uttarakhand contribute to tiger conservation.
3. **Enhanced Compensation Schemes**: Revise rates to match market values and ensure timely disbursal.
    - **Kerala's listing of HWC as a disaster** under SDRF.
4. **Use of Technology**: Monitor wildlife movements with GPS collars and early warning systems.
    - Radio-collared lions in **Gir Forest**.
5. **Bio-Fencing and Alternative Solutions**: Use chili-dung fences, solar-powered barriers, and seed balls to prevent crop raids.
    - Odisha's seed balls for enriching food stock for elephants.

6. **Policy Interventions**: Strengthen the Wildlife Protection Act (1972) and enforce the **National Wildlife Action Plan (2017-2031)**.
    - Supreme Court-mandated relocation of Gir lions to Madhya Pradesh.

Human-wildlife conflict reflects the complex challenge of balancing biodiversity conservation with human development. By integrating technology, community participation, and effective policies, India can move toward sustainable coexistence. As Mahatma Gandhi said, "The greatness of a nation and its moral progress can be judged by the way its animals are treated." This ethos must guide our conflict mitigation efforts.

24. WATER USE EFFICIENCY OF INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment >> Water Conservation

REFERENCE NEWS:

The Bureau of Water Use Efficiency (BWUE) under the National Water Mission (NWM), Ministry of Jal Shakti, in collaboration with the Indian Plumbing Association (IPA), organized a one-day workshop titled "**Water Use Efficiency: Strategies for a Sustainable Future",** with a focus on the domestic water sector.

WATER RESOURCES IN INDIA:

Water is a crucial resource for India's **agriculture, industries, and domestic needs**. With **18% of the world's population but only 4% of global freshwater resources**, India faces **serious water challenges**, including scarcity, over-extraction, and pollution.

- **Surface Water Resources:** Surface water includes **rivers, lakes, reservoirs, and wetlands**. These provide water for irrigation, drinking, hydropower, and industry. India has **14 major river basins** and **91 medium river basins**. The total surface water availability is estimated at **1,869 billion cubic meters (BCM)** per year.
    - **Ganga River Basin** supports **40% of India's population** but faces severe pollution.
- **Reservoirs and Dams:** To store and manage surface water, India has constructed numerous **dams and reservoirs**. **Bhakra Nangal Dam (Punjab & Himachal Pradesh)** – Largest in India, used for irrigation and power generation.
- **Groundwater Resources:** Groundwater is a **critical source** for drinking water and irrigation in India. **It accounts for 60% of India's total irrigation needs and 85% of rural drinking water**. India is **the largest consumer of groundwater globally**, extracting **250 billion cubic meters annually**. **90% of rural drinking water** and **50% of urban water supply** depend on groundwater.
- **Rainwater:** India receives **80% of its rainfall during the monsoon (June-September)**. However, **rainfall distribution is uneven**, leading to floods in some areas and droughts in others.
- **Lakes & Wetlands:** India has over **757,000 wetlands**, providing ecological balance and groundwater recharge.

- **Glaciers & Snowmelt Water:** Glaciers in the **Himalayas** serve as the source of major Indian rivers (Ganga, Yamuna, Indus, Brahmaputra).

WATER USE EFFICIENCY IN INDIA:

India uses **2-3 times more water** than China and the US to produce the same amount of food and industrial goods, indicating **low water use efficiency** (FAO Report).

- **Agriculture (Largest Consumer, Lowest Efficiency): Agriculture accounts for ~80% of India's total water use** but has **poor efficiency** due to traditional irrigation practices.
- **Irrigation Inefficiency**: **60% of water used in agriculture is wasted** due to flood irrigation (ICAR). **Water productivity (1 kg of grain per cubic meter of water)** in India is **far lower** than in developed countries.
- **Groundwater Overuse**: India extracts 250 billion cubic meters of groundwater annually, more than China and the USA combined (World Bank).
- **Regional Impact**: **Punjab, Haryana, and Maharashtra** grow **high-water crops despite water scarcity**. **Rajasthan and Gujarat** face acute water shortages but have **poor irrigation efficiency**.
- **Industrial Water Use (10-12% of Total Water Use):** Industries rely on water for cooling, manufacturing, and cleaning but often waste large amounts. **Water Productivity in Indian industries is 4-8 times lower** than in developed nations (NITI Aayog). **Thermal Power Plants** consume **87% of industrial water use**. **70% of industrial wastewater is discharged untreated into rivers** (Central Pollution Control Board).
- **Manufacturing Industries**: Water-intensive sectors like **Textiles, paper, leather, steel, and chemicals**. **Cement and iron industries in Chhattisgarh and Odisha** are major consumers.
- **Water Pollution**: 70% of industrial wastewater is discharged untreated into rivers and lakes. The **Ganga River pollution** due to textile and tannery industries in Kanpur. **Tata Steel in Jamshedpur** has adopted water recycling to reduce industrial water use. **Delhi's Yamuna River** is heavily polluted by industrial effluents from Haryana and UP.
- **Domestic Water Use (~8-10% of Total Water Use**): Drinking, sanitation, cooking, cleaning, and other household needs**. Per Capita Water Availability** in 1951 was **5,177 cubic meters per year** and in 2025 is expected to decline below **1,000 cubic meters** (water-stressed level).

- **Rural vs. Urban**: 21 major Indian cities (including Delhi, Chennai, and Bengaluru) are predicted to **run out of groundwater by 2030** (NITI Aayog). Only **35% of wastewater is treated**; the rest pollutes rivers and lakes.
    - **Chennai Water Crisis (2019)** – The city ran out of groundwater, leading to water rationing and heavy reliance on tanker supplies.

CHALLENGES OF INDIA BEING A WATER-SCARCE COUNTRY:

India is **fast approaching a water crisis**, with demand expected to exceed supply by 2050. With per capita water availability dropping below **1,000 cubic meters per year**, India is moving toward a **water-scarce status** (NITI Aayog). **21 major Indian cities, including Delhi, Chennai, and Bengaluru, will run out of groundwater by 2030** (NITI Aayog Report).

- **Declining Per Capita Water Availability: 2030** projected demand is **1.5 times higher than available supply** (NITI Aayog). Increased **competition for water** among agriculture, industries, and households. Rural areas face **droughts**, while urban centres struggle with **water rationing**.
- **Over-Exploitation of Groundwater:** India extracts 250 billion cubic meters of groundwater annually, more than the USA and China combined. 90% of rural drinking water and 60% of urban water supply depend on groundwater. Punjab, Haryana, Rajasthan, Tamil Nadu are facing critical groundwater depletion. **Land subsidence (sinking land)** in over-extracted regions like Noida and parts of Haryana.
    - **Latur (Maharashtra) Water Crisis (2016)**: Overuse of groundwater led to severe shortages, requiring water trains. **Delhi's groundwater table** is falling by **1 meter per year**.
- **Inefficient Water Use in Agriculture:** 60% of irrigation water is wasted due to traditional flood irrigation. **Water-intensive crops like paddy and sugarcane** deplete water in dry states. India's **water productivity (1 kg of grain per cubic meter of water)** is **one-third** of China's.
    - **Groundwater depletion**, increased farmer distress, and regional conflicts over water. **Cauvery Water Dispute (Karnataka vs. Tamil Nadu)** over irrigation needs.
- **Unequal Water Distribution Across Regions: North India (Indo-Gangetic Plain)** has abundant water, while **Western and Southern India face acute shortages**. Seasonal **drought-flood cycles** lead to **crop failures** and **displacement**. **Conflicts over water-sharing agreements** (Krishna-Godavari dispute).
- **Water Pollution and Contamination:** 70% of India's surface water is polluted due to industrial waste and untreated sewage. **Urban India generates 62 billion litres of sewage daily**, but only **35% is treated**. **Ganga and Yamuna Rivers** rank among the **most polluted** in the world. **Waterborne diseases (cholera, dysentery)** affect 37 million Indians annually.

Contaminated drinking water leads to severe health crises (Arsenic poisoning in Bihar & West Bengal).

- **Climate Change and Erratic Monsoons:** 80% of India's rainfall comes in just 4 months (June-Sept), causing extremes of floods and droughts. **India experienced 1.5 times more droughts in the last decade** compared to previous years (IMD). **Agricultural uncertainty**, water shortages, and migration. Farmers moving from drought-prone Vidarbha to cities for labour.
- **Interstate & International Water Conflicts:** Water shortages lead to political disputes between states and neighbouring countries. **India-Pakistan Indus Water Treaty (1960)** – Water-sharing agreement under strain. **China's Dams on Brahmaputra** raise concerns about future water availability in Northeast India. Disrupts agriculture, industry, and drinking water supply.
- **Economic and Social Impact of Water Scarcity:** India could lose **6% of GDP by 2050** due to water shortages (World Bank). **Women & Water Crisis** as seen in Rajasthan leading women to walk **5-10 km daily** to fetch water.
    - **Madhya Pradesh's Bundelkhand Region** sees mass migration due to failed monsoons.

PRACTICAL SOLUTIONS AND STRATEGIES FOR WATER USE EFFICIENCY IN INDIA:

Water use efficiency (WUE) is **critical** for India, where **demand is expected to exceed supply by 2050**.

- **Drip and Sprinkler Irrigation (Micro-Irrigation):** Drip irrigation delivers water directly to the plant's roots, reducing evaporation. Sprinkler irrigation distributes water evenly over crops, reducing wastage. **Saves 30-60% water** compared to traditional flood irrigation. **Improves crop yield by 20-40%**.
    - **Gujarat & Tamil Nadu**: Highest adoption of **micro-irrigation** under **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)**.
    - **Maharashtra's Jalyukt Shivar Abhiyan**: Over **11 lakh hectares** covered under micro-irrigation.
    - **Israel's Drip Irrigation Model**: Increased crop yield by **50% while reducing water use by 60%**.
- **Laser Land Levelling:** A technique that **levels fields using lasers**, ensuring **uniform water distribution**. Saves 25-30% irrigation water. Reduces runoff losses and improves yield.
    - **Punjab & Haryana**: Adopted laser land levelling to improve **water productivity** in paddy fields.
    - **China's Yellow River Basin**: Reduced water losses by **20% using land levelling techniques**.

- **Crop Diversification & Agro-Ecology:** Encouraging farmers to grow **low-water crops** (millets, pulses) instead of **water-intensive crops** (paddy, sugarcane). **Millets need 70% less water** than rice and provide higher nutrition.
    - **Punjab's 'Paani Bachao, Paisa Kamao' Scheme**: Farmers were incentivized to switch from **paddy to maize**.
    - **Karnataka's Millets Mission**: Increased millet cultivation to save water.
    - **Australia's Dryland Farming Model**: Encourages low-water crops to combat drought.
- **Zero Liquid Discharge (ZLD): Recycling and treating** all wastewater to **reuse** within the industry. **Reduces industrial freshwater use by 60-80%**. **Prevents pollution of rivers and groundwater**.
    - **Tamil Nadu**: Made **ZLD mandatory for textile and leather industries** to prevent water pollution.
    - **Gujarat**: Industrial zones in **Ankleshwar & Vapi** recycle wastewater.
    - **China's Pearl River Delta**: Enforced **100% wastewater recycling** in industries.
- **Industrial Water Audits & Recycling:** Monitoring **water consumption, leakage detection, and wastewater reuse** in industries. **Reduces industrial water use by 30-50%**. **Improves operational efficiency**.
    - **Maharashtra's MIDC (Maharashtra Industrial Development Corporation)**: Conducted water audits in **40+ industrial zones**.
    - **Delhi Metro**: Uses **recycled water for train cleaning and cooling**.
    - **Singapore's NEWater Model**: Treats sewage into **potable water** for industrial and domestic use.
- **Smart Water Meters & Leak Detection: Real-time monitoring** of household water consumption, detecting leaks and overuse. **Reduces household water wastage by 30-50%**. **Encourages behavioural change**.
    - **Bengaluru**: Installed **smart water meters in apartments** to track usage.
    - **UK's Thames Water Smart Meters** reduced urban water wastage by **20%**.
- **Rainwater Harvesting (RWH):** Collecting and storing **rainwater for household and agricultural use**. **Reduces groundwater dependency** by 30-40%.
    - **Chennai**: **First Indian city to make RWH mandatory** for all buildings.
    - **Rajasthan's Johads**: Traditional water harvesting structures revived.
    - **Germany's RWH Law**: Rainwater must be used for flushing and gardening.
- **Water Pricing & Efficient Allocation:** Charging **realistic water prices** to prevent overuse. **Discourages wastage and promotes efficiency** through water trading mechanism**.**
    - **Uttar Pradesh's Water Tariff Reform**: Farmers pay less for **micro-irrigation users**.

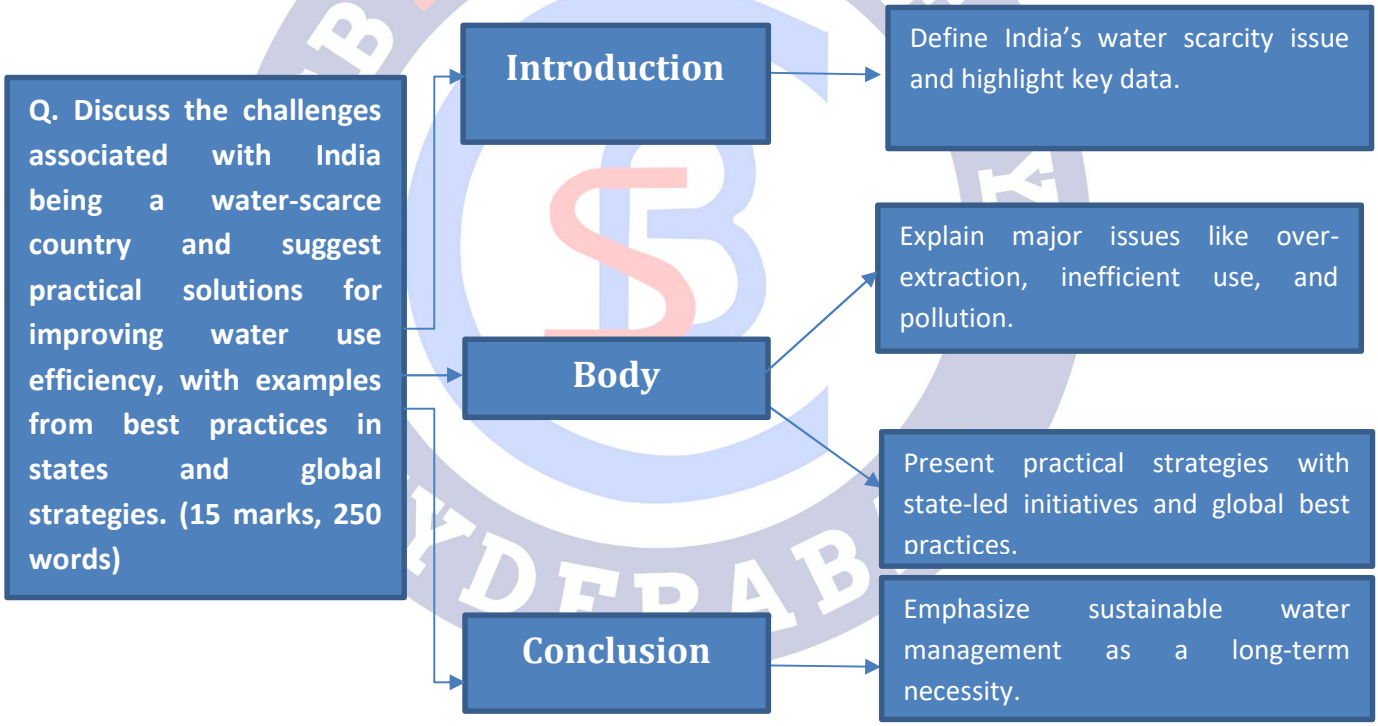
- **Israel's Progressive Water Pricing**: Higher rates for high usage discourage wastage.

- **Interlinking of Rivers Project: Diverting surplus river water to deficit areas** to balance regional water supply. **Ensures equitable distribution of water resources**.
  - **Ken-Betwa River Link (Madhya Pradesh & UP)**: First interlinking project in India.
  - **China's South-North Water Transfer Project**: Transfers 45 BCM of water annually.

PRACTICE QUESTION

Q. Discuss the challenges associated with India being a water-scarce country and suggest practical solutions for improving water use efficiency, with examples from best practices in states and global strategies. (15 marks, 250 words)

APPROACH



MODEL ANSWER

With **18% of the global population but only 4% of freshwater resources**, India faces a **severe water crisis**. With demand expected to exceed supply by **2050**, improving **water use efficiency (WUE)** is critical for sustainable growth.

CHALLENGES OF INDIA BEING A WATER-SCARCE COUNTRY

1. Over-Exploitation of Groundwater: India extracts 250 billion cubic meters of groundwater annually, more than China and the USA combined (World Bank). **90% of rural drinking water** and **60% of urban water supply** depend on groundwater.

- **Latur (Maharashtra) Water Crisis (2016)** – Groundwater overuse led to acute shortages, requiring water trains.

2. Inefficient Water Use in Agriculture (80% of Total Use): 60% of irrigation water is wasted due to flood irrigation (ICAR). **Water-intensive crops like paddy and sugarcane** deplete resources.

- **Punjab & Haryana**: Grow high-water crops despite low rainfall.

3. Water Pollution & Industrial Waste: 70% of India's surface water is polluted (Central Pollution Control Board). **Ganga and Yamuna Rivers** rank among the world's most polluted.

- **Kanpur Tanneries** polluting the Ganga.

4. Unequal Water Distribution & Climate Change: North India has surplus water, while **Western & Southern states face scarcity**. **80% of India's rainfall occurs in just 4 months (June-Sept)**, leading to **droughts & floods**.

- **Brahmaputra floods (Assam)** vs. **Marathwada droughts (Maharashtra)**.

PRACTICAL SOLUTIONS FOR WATER USE EFFICIENCY

1. Drip & Sprinkler Irrigation (Micro-Irrigation): Saves 30-60% water, **increases yield by 20-40%**.

- **Maharashtra's Jalyukt Shivar Abhiyan** – Covered **11 lakh hectares**.
- **Israel's Drip Irrigation Model**: Increased yield by **50%, reduced water use by 60%**.

2. Zero Liquid Discharge (ZLD) in Industries: **Reduces industrial freshwater use by 60-80%**.

- **Tamil Nadu** – **ZLD mandatory for textile & leather industries**.
- **Gujarat** – Industrial zones in **Ankleshwar & Vapi** recycle wastewater.
- **China's Pearl River Delta** – **100% wastewater recycling** in industries.

3. Rainwater Harvesting (RWH): **Reduces groundwater dependency by 30-40%**.

- **Chennai** – First Indian city to make **RWH mandatory**.
- **Rajasthan's Johads** – Traditional rainwater storage revived.

- **Germany's RWH Law** – Rainwater **must be used for flushing and gardening**.

4. Smart Water Meters & Leak Detection: **Reduces household water wastage by 30-50%**.

- **Bengaluru** – Installed **smart water meters** in apartments.
- **UK's Thames Water Smart Meters** – Reduced wastage by **20%**.

5. Water Pricing & Efficient Allocation: **Discourages wastage, improves conservation**.

- **Uttar Pradesh's Water Tariff Reform** – **Lower rates for micro-irrigation users**.
- **Israel's Progressive Water Pricing** – **Higher rates for high consumption**.

India's water crisis requires immediate action. Efficient irrigation, industrial wastewater recycling, rainwater harvesting, and inter-basin transfers can significantly improve water security. By adopting best practices from Indian states and global strategies, India can achieve sustainable water management.

25. LOGISTICS SECTOR

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Industry and infrastructure > Infrastructure & Investment models

REFERENCE NEWS:

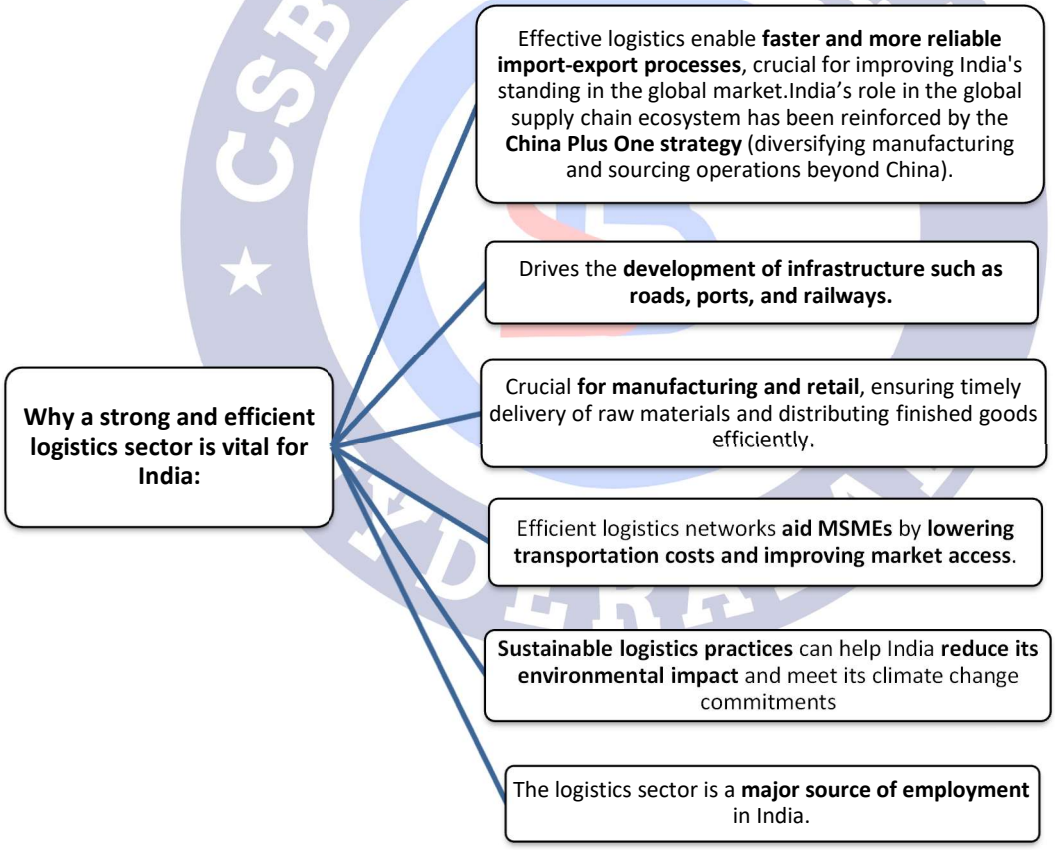
- The logistics sector witnessed significant strides in 2024, aligning with the objectives of the National Logistics Policy (NLP) introduced in 2022. Following India's rise to the 38th position among 139 countries in the **World Bank Logistics Performance Index (LPI) 2023**, efforts were concentrated on reducing logistics costs, which currently range between 10-14%.
- The **Economic Survey 2023-24** highlights the Centre's initiatives, including the launch of the NLP and the **PM Gati Shakti National Master Plan** (2021), aimed at enhancing efficiency and lowering costs. These measures were supported by digital advancements such as the **Unified Logistics Interface Platform (ULIP)** and the **Logistics Data Bank**, which have been instrumental in streamlining operations and improving transparency across the sector.

WHAT IS LOGISTICS?

- Logistics encompasses **planning, coordinating, storing, and moving resources**—people, raw materials, inventory, equipment, etc.—from one location to another, from the production points to consumption, distribution, or other production points.

LOGISTICS SECTOR IN INDIA:

- India's logistics market is estimated to be **USD 435.43 billion in 2023 and is expected to reach USD 650.52 billion by 2028**, growing at a Compound Annual Growth Rate (CAGR) of 8.36%.
- India improved its ranking in **the World Bank's Logistics Performance Index**, **climbing six places to rank 38** out of 139 countries in 2023.
- A National Council of Applied Economic Research (NCAER) report (December 2023) highlighted a **decline in logistics costs by 0.8-0.9 percentage points of GDP** between FY14 and FY22.
- **Capital expenditure on infrastructure** increased by **11.1%,** signaling further growth opportunities.
- As per the **Economic Survey 2023-24**, the Goods and Services Tax (GST) has significantly reduced logistics costs by cutting truck waiting times at state borders, **lowering travel time by 30%,** and increasing average truck coverage from **225 km to 300-325 km daily.**



CHALLENGES ASSOCIATED WITH INDIA'S LOGISTICS SECTOR:

- **Heavily dependent on roads:**

- India's logistics sector predominantly depends on road transport, holding a **65% share compared to a global average of 25%.** Railways and waterways make up roughly 35%.
- Road transportation is **more expensive**, costing Rs. 2.2 per tonne per kilometre, in contrast to Rs. 1.4 for rail and Rs. 0.7 for waterways.

- **Port Sector Challenges:**
  - Indian ports experience **prolonged ship turnaround times**, averaging **about 62 hours in 2020-21**, significantly higher than Japan's approximate 8 hours.
  - India's port inefficiencies arise from **congested berths, slow cargo handling, and lengthy customs processes,** impacting logistics. Coastal shipping is further limited by inadequate port facilities and depth, restricting large vessel operations.
- **High fuel prices**:
  - High fuel prices significantly burden the logistics sector, as they lead to **increased transportation costs** and additional freight surcharges, ultimately impacting the sector's profitability.
- **Regulatory and Bureaucratic Hurdles:**
  - The introduction of digital platforms like the e-way bill system has streamlined some administrative procedures and reduced paperwork. However, the sector still grapples **with complex and varied regulations across states, leading to delays and increased compliance costs.**
- **Fragmented Market Structure:**
  - India's logistics market remains highly fragmented **with numerous small players**, leading to service quality inconsistencies and inefficiencies.
- **Warehousing Challenges:**
  - The state of warehousing in India's logistics sector is problematic due to **inadequate facilities and limited location choices**. Also, a significant portion of the **larger storage facilities is owned by the government** and primarily used **for storing food grains.**
- **Technological Gaps:**
  - Despite advancements in AI, IoT, and automation, and the growing utilization of robotics and drone technology, a significant part of the sector still relies on traditional methods.
- **Structural issues with infrastructure development:**
  - **Land acquisition, litigation issues, alienation of local communities, environmental clearances** etc are some major hurdles that delays infrastructure development in the country.

- **Huge capital expenditure requirements:**
  - The creation of a robust infrastructure for an efficient logistic ecosystem requires **huge capital expenditure** with **relatively longer gestation periods**.
- **Slow pace of infrastructure creation in India:**
  - For ex: Only 30-35 km of roads are constructed in India per day as compared to 45km in China
- **Skilled Manpower Shortage:**
  - The sector faces a shortage of trained and skilled manpower, which affects service quality and limits the adoption of advanced technologies.
- **Environmental Concerns:**
  - Sustainable logistics practices are in nascent stages in India, and the sector faces challenges in reducing its **carbon footprint and adopting greener practices.**
- **Supply Chain Disruptions:**
  - Global events, like the **COVID-19 pandemic**, have highlighted vulnerabilities in the supply chain network, underscoring the need for **more resilient and flexible logistics systems.**

GOVERNMENT INITIATIVES:

- **National Logistics Policy (NLP):**
  - The National Logistics Policy was **launched in September 2022.**
  - National Logistics Policy is an overarching **interdisciplinary, cross-sectoral, multi-jurisdictional and comprehensive policy framework** for the logistics sector. The policy complements the **PM GatiShakti National Master Plan**.
  - **Vision:**
    - The **vision of the policy** is to develop a **technologically enabled, integrated, cost-efficient, resilient, sustainable and trusted logistics ecosystem** in the country for accelerated and inclusive growth.
  - **Targets:**
    - **Reduce the cost of logistics** from **14-18 percent of GDP** to global best practices of **8 percent by 2030.**
    - **Improve** the country's **Logistics Performance Index (LPI) ranking** to be among **top 25 countries by 2030.**
    - Create **data-driven decision support systems (DSS)** to enable an efficient logistics ecosystem.
    - To ensure that **logistical issues are minimised**, exports grow manifold, and small industries and the people working in them benefit significantly.
  - **Key building blocks of the policy:**
    - **Unified Logistics Interface Platform (ULIP):** to integrate various logistics-related digital services into a single portal, aiming to enhance efficiency, transparency, and reduce logistics costs and time.
    -

Ease of Logistics Services (E-Logs)

The Comprehensive Logistics Action Plan

- **Logistics Data Bank (LDB):** an application developed to track and trace EXIM (export-import) cargo, providing greater predictability, transparency, and reliability in the logistics sector, thereby reducing costs and minimizing supply chain wastages.
- **Sagarmala**
- **Bharatmala**
- **Dedicated Freight Corridors**
- **e-way bills**
- **FASTag**
- **Paperless EXIM trade process through e-sanchit**
- **Faceless assessment for customs**

WAY FORWARD

- **Cost optimization:**
  - To enhance competitiveness and profitability, cost optimization in India's logistics sector is essential.
  - For instance, **modernizing infrastructure such as roads, railways, ports, and terminals** boosts logistics efficiency and leads to cost reduction.
- **Adopting advanced technologies:**
  - Utilizing **automation, digitalization, and data analytics** can transform logistics by streamlining operations, reducing costs, and optimizing supply chain management.
  - Also, technologies like **barcode scanning, RFID, and real-time tracking** enhance tracking abilities and operational efficiency, leading to cost savings.
- **Role of MSMEs:**
  - Supporting MSMEs is key for the logistics sector's growth and competitiveness.
  - For instance, fostering **collaboration between MSMEs and larger logistics firms** can lead to knowledge exchange and capacity enhancement, strengthening the overall logistics ecosystem.
- **Promote federalism:**
  - In taking the National Logistics Policy and Gati Shakti master plan forward, it is important to **make the states of India full stakeholders since most development activity** takes place at the level of states.
- **Ensure civil society participation:**
  - Engaging civil society as a key participant in India's infrastructure development can **enhance public trust and involvement**, vital for a strong logistics sector. A **feedback mechanism to gather and address public views** is essential for this engagement.

- **Eliminate the structural deficiencies in railways:**
  - The rail sector suffers from **many structural deficiencies** which have to be **eliminated fast** if the **logistics cost has to be halved to global benchmarks**.
  - The **average speed of a freight train** has **stagnated at 25 kmph for decades**, it has to be urgently doubled to 50 kmph at least.
- **Promote inland waterways:**
  - The country should promote eco-friendly and cost-effective inland waterways freight movement. For example, India can learn from **river ports of China**.
- **Promote air logistics.**

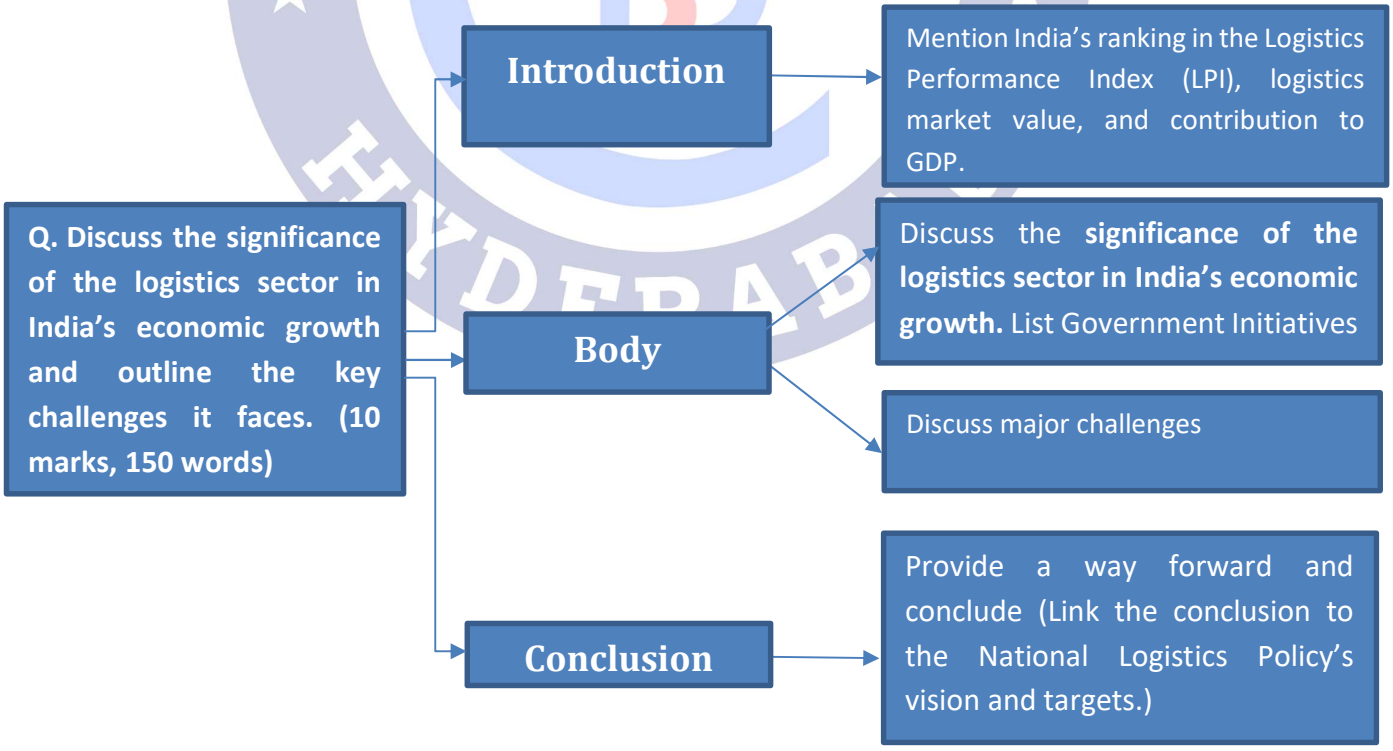
CONCLUSION:

- The logistics sector in India is on the brink of significant expansion. By **aligning with international standards, adopting cutting-edge technologies, enhancing skills, and implementing effective strategies**, it can maximize its potential, become a global frontrunner, and substantially contribute to India's economic progress.

PRACTICE QUESTION

Q. Discuss the significance of the logistics sector in India's economic growth and outline the key challenges it faces. (10 marks, 150 words)

APPROACH



MODEL ANSWER

India's logistics sector, ranked **38th among 139 countries** in the 2023 **World Bank Logistics Performance Index (LPI)**, is a critical driver of economic growth. With a market value of **USD 435.43 billion in 2023** and an expected growth to **USD 650.52 billion by 2028**, it contributes significantly to GDP, supporting supply chains and trade competitiveness.

Significance of India's Logistics Sector:

- **Economic Contribution**:
  - The logistics sector is a critical driver of economic growth in India, enabling efficient trade and supply chain operations.
  - Valued at **USD 435.43 billion in 2023**, it is projected to grow at a **CAGR of 8.36%**, reaching **USD 650.52 billion by 2028**.
- **Trade and Supply Chain Integration**:
  - Supports both domestic and global trade through improved supply chain efficiency.
  - Strengthened by initiatives like **China Plus One**, enhancing India's role in global supply chains.
- **Employment Generation**:
  - Generates direct and indirect employment, especially for unskilled and semi-skilled workers.
  - Supports MSMEs, which rely on cost-effective logistics for their operations.
- **Improved Infrastructure**:
  - Government initiatives like **PM Gati Shakti**, **Bharatmala**, and **Sagarmala** enhance multi-modal connectivity.
  - Increased **capital expenditure (11.1%)** on infrastructure signals growth potential.
- **Efficiency Gains through Digitalization**:
  - Platforms like **Unified Logistics Interface Platform (ULIP)** and **Logistics Data Bank** improve transparency, reduce costs, and optimize supply chains.

- GST has reduced truck waiting times at state borders, cutting travel time by **30%** and increasing average truck coverage from **225 km to 300-325 km/day**.

Challenges in India's Logistics Sector:

- **Dependence on Road Transport**:
  - Road transport accounts for **65%** of logistics, compared to the global average of **25%**.
  - Higher cost (**Rs. 2.2/tonne/km**) compared to rail (**Rs. 1.4**) and waterways (**Rs. 0.7**).
- **Port Inefficiencies**:
  - Long ship turnaround times (**62 hours**) compared to **8 hours in Japan**.
  - Congested berths and inadequate facilities hinder coastal shipping.
- **Fragmented Market**:
  - Dominated by small, unorganized players, leading to inefficiencies and inconsistent service quality.
- **High Fuel Costs**:
  - Increases transportation costs, adding to freight surcharges and reducing
- **Regulatory and Bureaucratic Hurdles**:
  - Complex regulations across states increase compliance costs and delays.
  - Digital initiatives like **e-way bills** have streamlined some processes, but gaps remain.
- **Infrastructure Development Delays**:
  - Land acquisition issues, litigation, and environmental clearances slow down infrastructure projects.
  - India constructs **30-35 km of roads per day**, compared to **45 km in China**.

Way Forward

- Promote **multi-modal transport** using rail and waterways.
- Increase **technology adoption** like AI, IoT, and real-time tracking.

- Strengthen MSME participation through collaboration with large firms.
- Address **port inefficiencies** by modernizing facilities and processes.
- Enhance the pace of **infrastructure development** by addressing structural delays.

The **National Logistics Policy** aims to position India among the top **25 countries in the Logistics Performance Index** and reduce logistics costs to **8% of GDP by 2030**. By addressing challenges and leveraging government initiatives, India can create a globally competitive and efficient logistics ecosystem.

26. GREAT NICOBAR PROJECT

iMPACT ANALYSIS

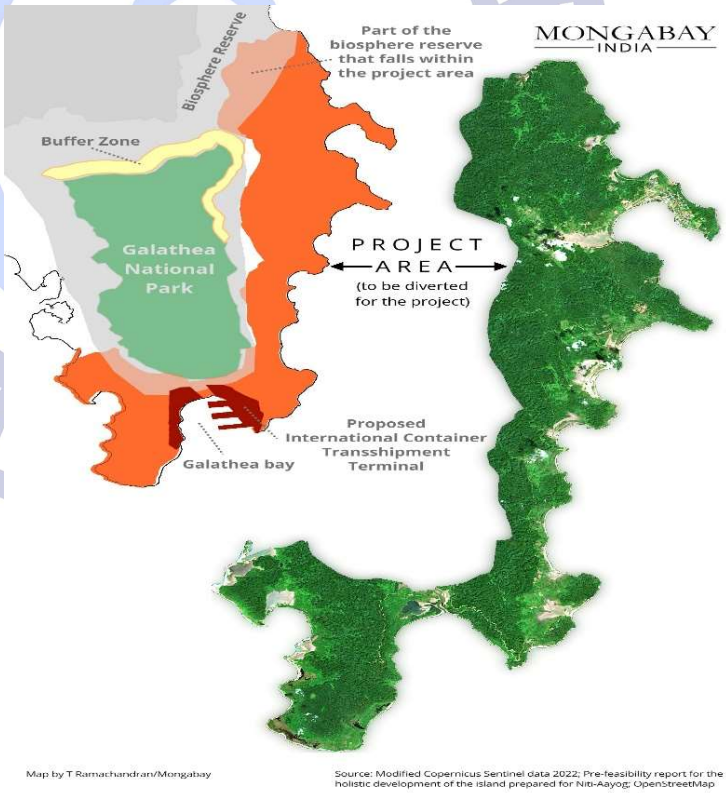
SYLLABUS:

GS 3 >> Economic Development >> Infrastructure

REFERENCE NEWS

- Recently, the Union Shipping Ministry has proposed several new additions to the ₹72,000-crore mega-infrastructure project in Great Nicobar Island. These include an international cruise terminal aimed at facilitating a "global" port-led city, high-end tourism infrastructure, and a shipbreaking yard, according to official documents.
- Additionally, the Ministry has sought 100 acres of land with a 500-metre seafront in Campbell Bay for ship repair and shipbuilding facilities and has requested the designation of Campbell Bay as an export-import port to enable the import of construction materials for the transshipment terminal at Galathea Bay.

ABOUT THE GREAT NICOBAR PROJECT



- The project involves a comprehensive **Rs 72,000-crore** infrastructure upgrade on Great Nicobar Island. It is being implemented by the Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO).
- The project covers 16,610 hectares and aims to leverage the island's strategic location near the **Malacca Strait.** The Great Nicobar Island Development project includes developing an:

1. An International Container Trans-shipment Terminal (ICTT)
2. A greenfield international airport
3. Two greenfield cities
4. A coastal mass rapid transport system
5. A free trade zone

- The project has received necessary clearances, including environmental and forest clearances, and is **expected to be developed over 30 years in a phased manner.**
- Promoted by NITI Aayog as a 'mega-infrastructure project' and a 'strategic masterstroke,' the ambitious 'Great Nicobar Island Development Project' **faces protests and appeals** to halt it on environmental grounds by conservationists, naturalists, political parties, and civil society groups.

SIGNIFICANCE OF THE GREAT NICOBAR PROJECT:

- **Economic Development:**
  - The centerpiece of this project is the **International Container Transshipment Terminal (ICTT)** at Galathea Bay, which aims to transform Great Nicobar into a critical hub for cargo transshipment.
  - By **reducing India's dependence on foreign ports** like Colombo and Singapore, this terminal is expected to boost trade, streamline shipping routes, and invigorate regional economic activity.
- **Strategic Advantage:**
  - Great Nicobar's location near the **Malacca Strait**, a vital maritime chokepoint through which a significant portion of global trade flows, gives India a unique strategic edge. This project strengthens India's role in global maritime commerce, allowing it to better influence critical sea lanes.
  - For instance, as China's **"String of Pearls" strategy** builds ports across the Indian Ocean, this development becomes even more crucial to maintaining India's dominance in the region.
- **Security Considerations:**
  - The Bay of Bengal and the Indian Ocean are not just economic zones—they're **strategic frontlines**. As naval activities from countries like China expand, India needs a stronger foothold in these waters. This project enhances India's maritime security by solidifying its presence and acting as a **deterrent against external threats.**

- **Military Infrastructure Enhancement:**
  - The island's defense capabilities are set to receive a significant upgrade. Existing military facilities, like the **INS Baaz naval base** at Campbell Bay, will benefit from new airstrips, jetties, and advanced surveillance systems. These improvements will enhance India's ability to monitor its waters, respond quickly to threats, and protect vital shipping lanes.
- **Local Employment Generation:**
  - One of the most immediate benefits of this project is the job creation it brings. From construction to operations, the development of ports, airports, and other infrastructure is expected to create substantial employment opportunities for the local population**, raising living standards and supporting economic upliftment.**
- **Tourism Promotion:**
  - The plan also focuses on developing **eco-tourism and coastal tourism** to showcase the island's natural beauty and biodiversity. By drawing both domestic and international visitors, this initiative aims to diversify the economy while providing additional income streams for local communities.
- **Social Development:**
  - This project isn't just about trade and defense—it's about people. Plans include state-of-the-art healthcare and education facilities, improved air and sea connectivity, and robust digital infrastructure. E-governance initiatives like **telemedicine** and **tele-education**, aligned with the **Digital India initiative**, will ensure that residents have better access to essential services.

CONCERNS ASSOCIATED WITH THE GREAT NICOBAR PROJECT

- **Indigenous Rights Violations:**
  - The project threatens the rights of the **Shompen and Nicobarese tribes**, violating the **Forest Rights Act (2006)**, which grants the Shompen exclusive authority to manage and protect the tribal reserve. Increased contact with outsiders also raises concerns about the spread of diseases to which the tribes have no immunity.
- **Biodiversity Threats:**
  - Environmental groups highlight the risks of deforestation, with nearly **a million trees slated for removal**, potentially devastating the island's fragile ecosystem.
  - **Coral reefs, the Nicobar Megapode bird, and leatherback turtles** face severe threats from the planned development.
  - Compensatory afforestation proposed in Haryana has drawn criticism for being geographically and ecologically disconnected from the affected area.

- **Insufficient Stakeholder Consultation:**
  - The **Andaman and Nicobar Administration** and **ANIIDCO** raised concerns about the project's feasibility, suggesting the need for a **techno-economic feasibility study**.
  - Stakeholder consultations with the Tribal Council and local communities have been inadequate.
  - The **National Green Tribunal's high-powered committee report** on environmental clearances remains unpublished, raising transparency issues.
- **Seismic Risks:**
  - Great Nicobar Island lies in a **seismically volatile zone** that experienced significant subsidence during the **2004 tsunami**. This raises safety concerns regarding large-scale infrastructure development in a high-risk area.
- **International Obligation Breaches:**
  - The **Galathea Bay Wildlife Sanctuary**, part of a **UNESCO World Heritage Site**, is located within the project area.
  - Developing the island could breach India's international obligations to preserve biodiversity and protect pristine ecosystems.
- **Security and Strategic Concerns:**
  - **RTI Denials**: Requests for project details have been denied under **Section 8(1)(a) of the RTI Act**, citing sovereignty and strategic concerns.
  - Critics argue that only information related to the **dual-use military-civil airport**, controlled by the **Indian Navy**, should remain classified, not the broader aspects of tourism and shipping facilities.
  - Contradictions in Policy: The Ministry of Home Affairs' stance on maintaining the island's isolation contrasts with the Shipping Ministry's proposals for cruise terminals and shipbreaking facilities, which could increase exposure to foreign vessels and international tourists.
- **Environmental and Legal Challenges:**
  - **Policy Inconsistencies**: Critics highlight contradictions in the project's stated strategic goals and the proposed infrastructure, such as shipbreaking yards and high-end tourism.
  - **Lack of Transparency**: Activists like **Debi Goenka** have raised alarms about the lack of clarity in environmental clearances and the potential for irreversible ecological damage.
  - Legal challenges before the **National Green Tribunal** continue, focusing on violations of established environmental safeguards.

- **Economic Viability Issues:**
  - Replicating the success of duty-free ports like Singapore or Hong Kong on the remote **Great Nicobar Island** is considered economically unrealistic due to its lack of hinterland, industrial support, and resource availability.
- **Administrative Pushback:**
  - **ANIIDCO** and local authorities argue that proposed ship repair facilities conflict with the envisioned greenfield township and waterfront tourism activities.
  - Coastal areas fall under **CRZ 1a regulations**, protecting coral reefs and restricting incompatible developments.

WAY FORWARD

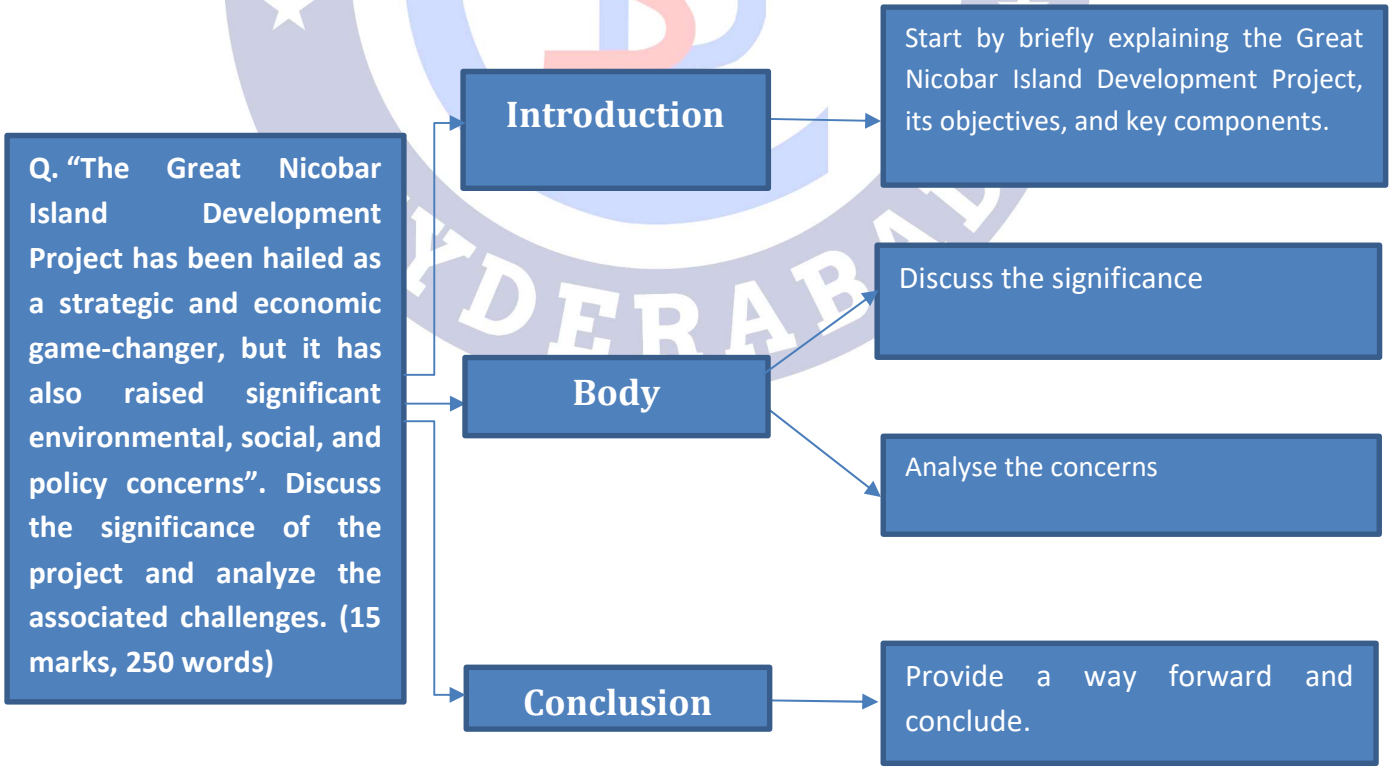
- **Reassessing Economic Feasibility:** The necessity of building the **International Container Transshipment Terminal (ICTT)** at Great Nicobar should be revisited, especially with existing hubs like **Singapore**, **Port Klang**, and the recently inaugurated **Vizhinjam Terminal** in Kerala already serving similar purposes. Avoiding duplication is essential to ensure long-term economic viability.
- **Conducting Detailed Impact Assessments:** A thorough environmental and social impact assessment, in line with the **Environment Protection Act (1986)**, is critical to understand the project's full impact. Protecting biodiversity, including coral reefs, and ensuring the rights of indigenous communities are paramount.
- **Respecting Tribal Rights:** The **Shompen and Nicobarese tribes** must be directly involved in decision-making processes. The government should strictly adhere to the **Shompen Policy (2015)**, prioritizing the well-being of these communities while limiting unnecessary external interference.
- **Aligning Security and Development:** Security-related infrastructure, such as the **dual-use military-civil airport**, must remain distinct from commercial tourism and shipping projects to avoid policy contradictions and maintain strategic focus.
- **Focusing on Sustainable Construction:** Eco-friendly practices, like adherence to the **GRIHA code** for construction and strict compliance with **CRZ 1a regulations**, should be non-negotiable to minimize environmental harm, particularly to coral reefs and marine ecosystems.
- **Ensuring Transparency and Stakeholder Inclusion:** Transparency is key to building public trust. The **National Green Tribunal's report** on the project's environmental clearances and feasibility studies should be made public, allowing for informed discussions among stakeholders.
- **Learning from International Models:** Collaborating with countries like **Japan** and **South Korea**, which have successfully balanced development and environmental preservation on islands, can offer valuable lessons for sustainable growth.

- **Decentralizing and Phased Development:** Consider spreading some components of the project to other Nicobar Islands, like **Little Nicobar** or **Kamorta**, to reduce pressure on Great Nicobar's fragile ecosystem. Phased construction would also help mitigate risks in this seismically active zone.
- **Promoting Responsible Tourism:** Tourism plans should focus on eco-tourism principles to showcase the island's natural beauty without damaging its ecological balance. Strict guidelines can ensure tourism development aligns with conservation goals.
- **Coordinating Better Among Ministries:** Improved coordination between the **Shipping Ministry** and the **Home Ministry** is essential to resolve conflicting priorities and create a unified plan that respects the island's ecological and strategic importance.

PRACTICE QUESTION

Q. "The Great Nicobar Island Development Project has been hailed as a strategic and economic game-changer, but it has also raised significant environmental, social, and policy concerns". Discuss the significance of the project and analyze the associated challenges. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The **Great Nicobar Island Development Project**, a ₹72,000-crore initiative led by the Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO), is designed to transform Great Nicobar into a strategic and economic hub. The project includes key infrastructure like the **International Container Transshipment Terminal (ICTT)**, a greenfield airport, two greenfield cities, and a free trade zone, leveraging the island's strategic location near the Malacca Strait. While the project offers substantial benefits, it has also drawn criticism over environmental, social, and legal challenges.

Significance of the Project

1. **Economic Development**
    - The **ICTT at Galathea Bay** aims to position India as a major transshipment hub, reducing dependency on foreign ports like Singapore and Colombo.
    - This could boost trade, streamline shipping routes, and enhance regional economic activity.
2. **Strategic Advantage**
    - Great Nicobar's proximity to the **Malacca Strait**, a key maritime chokepoint, strengthens India's influence over critical global trade routes.
    - Counters China's **"String of Pearls" strategy**, which seeks to expand its presence in the Indian Ocean.
3. **Security and Military Infrastructure**
    - Upgraded facilities like airstrips, jetties, and the **INS Baaz naval base** enhance India's maritime security and strategic deterrence.
    - Strengthens surveillance and rapid response capabilities in the Bay of Bengal and Indian Ocean.
4. **Local Employment and Tourism**
    - Infrastructure development is expected to create substantial job opportunities, improving local livelihoods.
    - Plans for eco-tourism aim to attract domestic and international visitors, diversifying the local economy.

5. **Social Development**
    - The project promises better healthcare, education, and connectivity through **telemedicine**, **tele-education**, and improved air and sea links under the **Digital India initiative**.

Concerns Associated with the Project

1. **Indigenous Rights Violations**
    - Risks displacing the **Shompen and Nicobarese tribes**, violating the **Forest Rights Act (2006)** and exposing them to diseases from increased contact with outsiders.
2. **Environmental Degradation**
    - Nearly **a million trees** are slated for removal, threatening the fragile ecosystem.
    - Coral reefs, the **Nicobar Megapode bird**, and **leatherback turtles** face habitat destruction.
3. **Lack of Stakeholder Consultation**
    - Insufficient involvement of tribal councils and local communities raises concerns about transparency.
    - The **National Green Tribunal's environmental clearance report** remains unpublished.
4. **Seismic Risks**
    - Located in a seismically active zone, the island faces risks of subsidence, as witnessed during the **2004 tsunami**.
5. **International Obligations**
    - The project overlaps with the **Galathea Bay Wildlife Sanctuary**, part of a UNESCO World Heritage Site, risking a breach of India's biodiversity preservation commitments.
6. **Policy and Economic Viability Issues**
    - Critics argue that replicating models like **Singapore** is unrealistic due to the island's limited industrial and logistical support.

- Conflicting priorities between the **Shipping Ministry** and **Home Ministry** over tourism and security undermine policy cohesion.

Way Forward

- **Reassess Economic Viability**: Evaluate the necessity of the ICTT considering existing hubs like Singapore, Colombo, and Vizhinjam.
- **Conduct Detailed Impact Assessments**: Ensure comprehensive studies to safeguard biodiversity and indigenous rights.
- **Prioritize Tribal Rights**: Engage tribal communities in decision-making and adhere to the **Forest Rights Act (2006)**.
- **Align Security and Development**: Separate security infrastructure from commercial projects to avoid conflicts.
- **Adopt Sustainable Practices**: Comply with **CRZ 1a regulations** and adopt eco-friendly construction to minimize ecological harm.
- **Enhance Transparency**: Make environmental clearance reports and feasibility studies public to ensure accountability.
- **Learn from Global Models**: Collaborate with countries like Japan and South Korea for sustainable island development.
- **Decentralize and Phase Development**: Spread components to other Nicobar Islands to reduce ecological pressure and adopt a phased approach.
- **Promote Responsible Tourism**: Focus on eco-tourism to preserve the island's biodiversity.

The Great Nicobar Island Development Project offers India significant strategic and economic benefits, particularly in strengthening its maritime presence and boosting trade. However, the environmental, social, and policy concerns associated with the project require urgent attention. By adopting a balanced and transparent approach, India can ensure sustainable development that aligns with both strategic imperatives and ecological responsibilities.

27. ROAD INFRASTRUCTURE IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS3 > Industry and infrastructure

REFERENCE NEWS:

- As the Recently, the Ministry of Road Transport & Highways, in a statement, said that India has achieved a remarkable milestone in infrastructure development, with its **National Highway network expanding by 60% over the past decade**. The total length of NHs has risen from **91,287 km in 2014 to an impressive 146,195 km in 2025.**

STATS:

- India's road network ranks as **the second largest globally**, with National Highways forming the backbone of the country's transportation system.
- Development continues at a robust pace, with approximately **12,500 km of highways currently under construction.**
- Also, the length of **National High-Speed Corridors (HSC)** has grown from just **93 km in 2014 to 2,474 km in 2025.** Similarly, the length of **four-lane and above highways** has more than doubled, increasing from **18,278 km in 2014 to 45,947 km**, ensuring smoother and faster transportation for commuters and goods. (Source: Ministry of Road Transport & Highways)
- Road Transport is vital for the economy of the country and **enables the country's transportation sector to contribute around 4.7% towards India's GDP**.
- It carries around **65% of freight and 85% of passenger traffic** in India.

SIGNIFICANCE OF ROAD INFRASTRUCTURE IN INDIA:

Economic Growth and Development

- **Market Accessibility**:
  - India has a road network of approximately **6.4 million kilometers**, the **second largest globally**, enabling seamless transport of goods and services.

- Improved road connectivity reduces logistics costs, essential for economic growth.
- Example: The **Golden Quadrilateral** connects Delhi, Mumbai, Chennai, and Kolkata, enhancing trade and commerce.

- **Employment Generation**:
  - Road infrastructure projects are labor-intensive, creating millions of jobs.
  - Programs like **Bharatmala Pariyojana** have employed thousands, contributing to skill development and economic empowerment.

Social Development

- **Access to Essential Services**:
  - Improved roads ensure better access to healthcare, education, and markets, especially in rural areas.
  - For instance, **Pradhan Mantri Gram Sadak Yojana (PMGSY)** has connected **99% of rural habitations**, positively impacting rural livelihoods.
- **Poverty Reduction**:
  - Roads provide rural populations with access to markets, enabling a shift from subsistence to commercial farming.
  - Studies indicate that regions with better road infrastructure experience a significant decline in poverty levels.

Regional Integration and Connectivity

- **National Cohesion**:
  - Roads link remote regions, fostering cultural integration and reducing regional disparities.
  - For instance, the **North-South and East-West Corridors** connect major industrial and urban hubs across India.
- **Boosting International Trade**:
  - Strategic road corridors like the **India-Myanmar-Thailand Trilateral Highway** enhance India's trade with Southeast Asia, promoting regional economic cooperation.

Environmental and Sustainable Development

- **Green Corridors**:
  - The **Green Highways Policy (2015)** promotes afforestation along highways, ensuring environmental sustainability.
  - Example: Over **12,000 hectares** of land have been afforested under this initiative.
- **Energy Efficiency**:
  - Improved roads reduce vehicle idling and congestion, lowering fuel consumption and emissions.

CHALLENGES:

- **Capacity of existing highways:**

National and state highways are overstrained, **carrying more than 65 per cent of the road traffic.**

National highways carry 40 per cent of India's total road traffic.

- **Accidents and safety concerns:**

Road safety is a major issue in the country.

For instance, India witnessed **53 accidents and 19 deaths every hour**, according to the Ministry of Road Transport and Highways (MoRTH) report titled **'Road Accidents in India: 2022'.**

- **Maintenance of existing infrastructure:**

The annual outlay earmarked for maintenance and repair of national highway stretches is only about 40 per cent of the funds required.

- **Cost escalation for roads:**

Delays in **acquiring land** affected project costs as the average cost of land escalated in recent years

- **Lack funding:**

The road maintenance in India is underfunded and still thousands of villages in India lack access to all-weather roads.

- **Speed:**

The intra-city vehicle speed in India **(less than 7 km/hour)** is one of the lowest in the world.

In India, the average road speed is about 30-40 km per hour whereas, the average road speed worldwide is between 60 to 80 km per hour.

This is due to high traffic which is expected to increase even further in future.

For instance, in 2017, the **average traffic speed in Bengaluru was 17.2 km/h**, indicating severe congestion.

- **Ecological issues:**

The low road density per thousand population in India contributes to significant **traffic congestion and reduced vehicle speeds**. This congestion leads to increased fuel consumption, **which in turn elevates pollution levels**.

Overcrowded traffic is a chief source of pollution in every city in India, with megacities like Delhi, Mumbai, Bengaluru, Kolkata, and Chennai being most impacted.

- **Regional variations:**

The **constraints with the Indian road network are not the same for each state** with states like Gujarat, Tamilnadu has a better road network than other states.

For instance, **road density in Kerala is approximately 670 km/100 sq. km**, while in **Uttar Pradesh, it is 280 km/100 sq. km,** reflecting the significant disparity in the extent of road networks relative to land area between the two state.

Government Initiatives in Road Infrastructure Development

Key Road Development Programs

- **Bharatmala Pariyojana:**
  - Enhances efficiency of existing corridors through Multimodal Logistics Parks and elimination of choke points.
  - Focuses on improving connectivity in the North-East and leveraging inland waterways.
  - Emphasizes scientific planning, technology, and seamless connectivity with neighboring countries.

- **Achievements:** 26,425 km awarded, 18,926 km completed (as of November 2024).

- **National Highways Development Project (NHDP):**
  - Includes flagship projects:
    - **Golden Quadrilateral**: Connecting Delhi, Mumbai, Chennai, and Kolkata.
    - **North-South and East-West Corridors**.
- **Pradhan Mantri Gram Sadak Yojana (PMGSY):**
  - Provides all-weather connectivity to unconnected habitations in rural areas.
  - Over **374,000 km of roads constructed**, connecting more than 99% of rural habitations (as of 2024).
- **Pradhan Mantri Bharat Jodo Pariyojana (PMBJP):**
  - Aims to link major cities to National Highways for better connectivity.

Institutional Support

- **National Highways Authority of India (NHAI):** Manages development and maintenance of National Highways.
- **Border Roads Organisation (BRO):** Develops road networks in border areas and neighboring countries.
- **National Highways and Infrastructure Development Corporation Ltd. (NHIDCL):**
  - Founded in 2014 to speed up construction in strategic areas, especially along international borders and in the North-East.
- **Motor Vehicles Amendment Act 2020:**
  - Establishes the **National Road Safety Board** to advise on road safety and traffic management.

Financing Infrastructure Development

- **Issuance of Tax-Free Infrastructure Bonds:** Infrastructure finance companies like IIFCL, NHAI, HUDCO, and PFC are permitted to issue tax-free bonds to promote infrastructure.
- **Infrastructure Investment Trusts (InvITs):** NHAI monetizes road projects to reduce debt, with plans to raise up to $2.4 billion by 2025.
- **Tax Incentives**: Companies engaged in road projects enjoy **100% tax exemption for the first five years** to encourage private investment.

Other Key Initiatives

- **Setu Bharatam Scheme (2016):** Targets elimination of all railway crossings on National Highways to improve safety.
- **Green Highways Policy (2015):** Promotes plantation, beautification, and maintenance along highways for inclusive growth and sustainability.
- **Char Dham Highways:** Connects four pilgrimage centers in Uttarakhand (Badrinath, Kedarnath, Gangotri, and Yamunotri) with two-lane highways for better access.

Safety Enhancements

- **Motor Vehicles Amendment Act 2020:**
  - Constitutes a **Motor Vehicle Accident Fund** for compulsory insurance of all road users.
  - Implements **Good Samaritan Guidelines** to protect and encourage individuals assisting accident victims.

WAY FORWARD:

- **Change in Approach**:
  - Roads should not be developed in isolation but integrated into a **multi-modal transport system**, linking roadways with railways, waterways, and airways for seamless connectivity.
  - Example: Enhance road links to **Dedicated Freight Corridors (DFCs)** and **Sagarmala Project**.

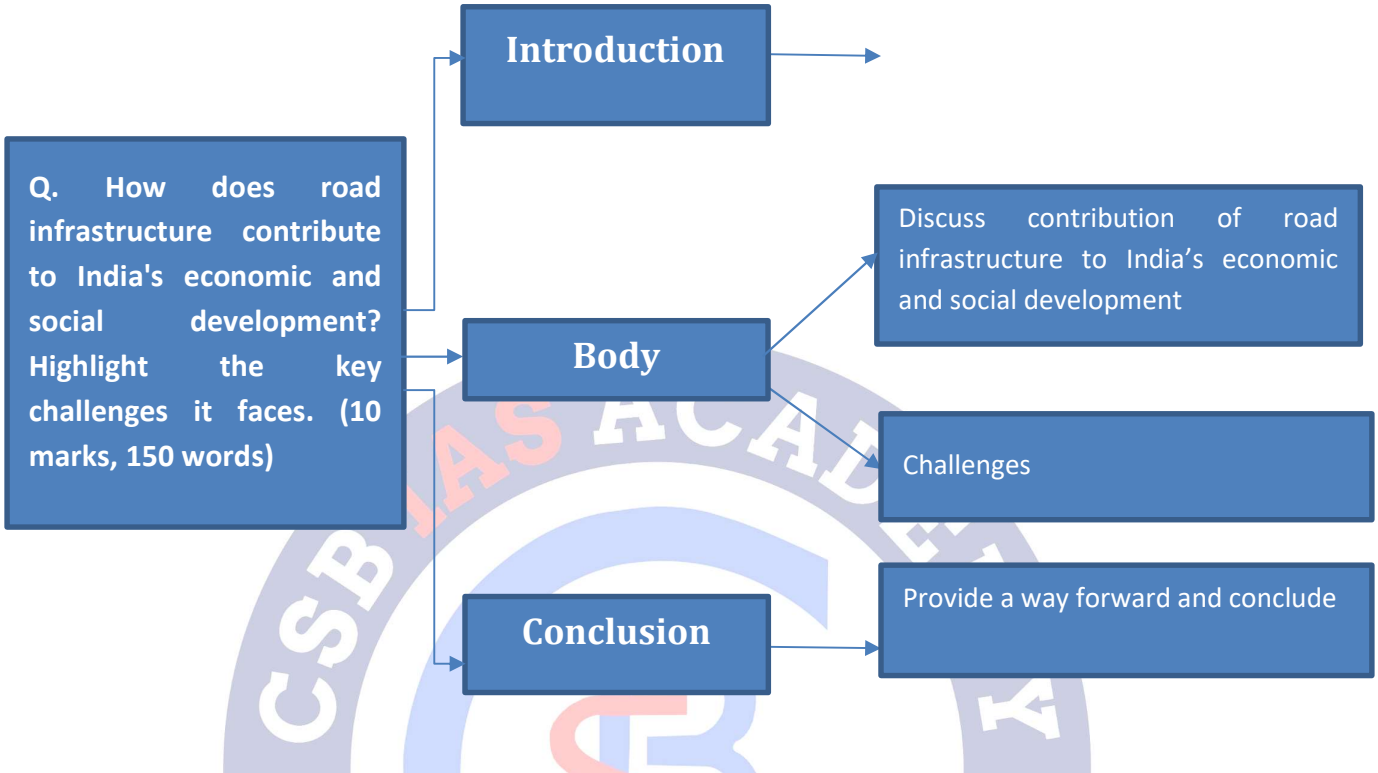
- **Upgradation of Technology in Road Construction and Maintenance**:
    - Introduce **Intelligent Transport Systems (ITS)** for real-time traffic monitoring and management.
    - Encourage the use of **recycled materials**, **low-carbon technologies**, and **solar lighting** for sustainable construction.
    - Example: Expand the deployment of **Electronic Toll Collection (ETC)** systems.
- **Expansion**:
    - Expand the existing **National Highways** and **State Highways** to support the growing economic hubs, SEZs, ports, and industrial corridors.
    - Develop better connectivity with international routes like the **India-Myanmar-Thailand Trilateral Highway** and **Asian Highways** to boost trade.
- **Coordination**:
    - State governments should align their road infrastructure development programs with national initiatives like **Bharatmala Pariyojana**.
    - Promote **Public-Private Partnerships (PPP)** to enhance project execution and funding.
- **Focal Areas**:
    - Special focus on backward regions like **North-East India**, **Left-Wing Extremism-Affected Areas**, and **tribal belts** to ensure equitable development.
    - Address last-mile connectivity by constructing all-weather roads in remote villages.
- **Capacity Building**:
    - Establish a **National Road Design and Research Institute** under MoRTH for innovative engineering solutions and sustainable practices.
    - Set up state-level training institutes for engineers and contractors under **Public Works Departments (PWDs)** to improve implementation capacity.

- **Sustainability and Environmental Protection**:
    - Strengthen the **Green Highways Policy (2015)** by expanding afforestation along highways and promoting **eco-friendly road construction techniques**.
    - Encourage the establishment of **charging stations** for electric vehicles (EVs) along major highways to support the transition to green mobility.
- **Road Safety and Traffic Management**:
    - Establish the **National Road Safety Board** with regional branches to ensure implementation of safety norms and awareness campaigns.
    - Incorporate **Good Samaritan Guidelines** into regional programs to assist accident victims and install crash barriers in accident-prone areas.
- **Financial Reforms**:
    - Expand innovative financing models like **Infrastructure Investment Trusts (InvITs)** and **tax-free bonds** to attract investment.
    - Optimize toll collection through better adoption of **FASTag systems** to enhance revenue generation.

PRACTICE QUESTION

Q. How does road infrastructure contribute to India's economic and social development? Highlight the key challenges it faces. (10 marks, 150 words)

APPROACH



MODEL ANSWER

As per the Ministry of Road Transport & Highways, India's National Highway network expanded by **60%** over the past decade, from **91,287 km in 2014** to **146,195 km in 2025**. This reflects the critical role of road infrastructure in driving economic and social development, contributing **4.7% to GDP** and supporting **65% of freight** and **85% of passenger traffic**.

Contribution to India's Economic and Social Development

- **Market Accessibility**:
  - India's **6.4 million km** road network facilitates seamless trade by reducing logistics costs.
  - *Example*: The **Golden Quadrilateral** connects Delhi, Mumbai, Chennai, and Kolkata, boosting economic output and regional trade.
- **Employment Generation**:
  - Road construction projects like **Bharatmala Pariyojana** create **millions of jobs** in construction, logistics, and associated sectors.
- **Access to Essential Services**:
  - Improved roads ensure better access to **healthcare**, **education**, and **markets** in rural areas.
  - *Example*: **PMGSY** connected **99% of rural habitations**, enhancing school enrollments and maternal health outcomes.

- **Poverty Reduction**:
  - Better road connectivity enables rural communities to access markets, reducing costs and increasing profitability.
  - Connected villages experience **higher income growth rates**.
- **Boosting Trade and Regional Integration**:
  - Projects like the **India-Myanmar-Thailand Trilateral Highway** strengthen international trade and economic cooperation.
- **Tourism Development**:
  - Enhanced road networks promote tourism and boost local economies.
  - *Example*: The **Char Dham Highway** improves access to Uttarakhand's pilgrimage sites.

Challenges

- **Overburdened Highways**: National highways, forming only **2%** of the network, handle **40% of traffic**.
- **Safety Concerns**: India sees **53 accidents and 19 deaths every hour** (MoRTH, 2022).
- **Funding Deficit**: Only **40%** of the required maintenance funds are allocated, leading to infrastructure deterioration.
- **Congestion and Pollution**: Urban traffic speeds (e.g., **17.2 km/h in Bengaluru**) cause delays, high fuel consumption, and emissions.
- **Regional Disparities**: Kerala's road density is **670 km/100 sq. km**, while Uttar Pradesh's is only **280 km/100 sq. km**.

Way Forward

- Integrate roads with **multi-modal transport systems** (e.g., DFCs, Sagarmala).
- Adopt **sustainable technologies** like Intelligent Transport Systems (ITS).
- Expand **National and State Highways** for economic hubs and international trade.
- Focus on **backward regions** for equitable development.
- Strengthen **road safety** through crash barriers and awareness programs.

Road infrastructure is crucial for India's economic growth, social inclusion, and regional integration. Addressing challenges with sustainable, well-funded, and technology-driven solutions will enable India to achieve its development aspirations efficiently.

28. GENOME INDIA PROJECT

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Science and Technology > Basics of biotechnology

REFERENCE NEWS:

- Recently, Prime Minister Narendra Modi hailed the completion of the Genome India Project as a historic milestone in biotechnology, emphasizing its potential to revolutionize healthcare and genetic research in India.

MORE ON NEWS:

- The Department of Biotechnology recently announced **its new platform and framework for sharing its 10,000 human genome dataset**. The sequences of healthy individuals — from 99 ethnic populations of the country — has helped create a baseline map of India's genetic diversity.
- The researchers in the **second phase plan to sequence genomes of those with specific diseases.**
- The Genome India Project, **initiated five years ago**, has successfully sequenced the genomes of 10,000 individuals from diverse populations across the country, with contributions from researchers at **20 different scientific institutions**.
- This comprehensive genetic database, now accessible **only to researchers at the Indian Biological Data Centre and partnering research institutes**, facilitates advancements in personalized medicine and targeted healthcare solutions.

GENOME:

- A genome is the **complete set of genetic material** present in an organism.
- It contains all the information necessary for an organism's development, growth, functioning, and reproduction.
- Genomes are **composed of DNA (deoxyribonucleic acid)** in most organisms, although some viruses have genomes made of RNA (ribonucleic acid).
- Genomes can vary in size and organisation among different organisms.

- In humans, a genome consists of approximately **3 billion DNA base pairs organised into 23 pairs of chromosomes.**

Gene and Genome:

A **gene is a segment of DNA coding** for a protein or functional RNA, while the genome comprises all genetic material, including genes, regulatory sequences, and non-coding regions. **Genetics focuses on individual genes and inheritance**, **while genomics** studies **entire genomes, including genes and non-coding DNA.**

GENOME SEQUENCING:

- Genome sequencing is the process of **determining the complete DNA sequence of an organism's genome** at a single time.
- This entails sequencing all of an organism's chromosomal DNA as well as DNA contained in the mitochondria and, for plants, in the chloroplast. DNA is composed of **four chemical bases: adenine (A), guanine (G), cytosine (C), and thymine (T).** Genome sequencing provides a **comprehensive view of an organism's genetic blueprint, including the sequence of these bases in their DNA.**

WHAT IS THE GENOME INDIA PROJECT?

- The Genome India project was **approved by the government in 2020** with the aim of creating a **comprehensive catalogue of genetic variations** found in the Indian population.
- A map of genetic diversity is essential for understanding **the history of our evolution, discovering the genetic basis for various diseases, and creating therapies** of the future. This cannot be done using data available in existing international databases, as Indian genomes are likely to be different from that of other populations.
- Genome India Project is funded by the Department of Biotechnology, and spearheaded by **Centre for Brain Research (CBR)** at Bengaluru-based Indian Institute of Science.

HUMAN GENOME PROJECT:

- It was an international programme that led to the decoding of the entire human genome.
- Beginning on October 1, 1990 and **completed in April 2003**, the HGP gave us the ability, for the first time, to read nature's complete genetic blueprint for building a human being.

- HGP has a major **diversity problem** as most genomes (over 95%) mapped under HGP have been **sourced from urban middle-class white people**. Thus, HGP does not really represent the human genome.
- **The Genome India Project is inspired by the Human Genome Project.**

Other Global Genome Projects:

- **1,000 Genomes Project (2012):** A global effort to map genetic variations by sequencing the genomes of 1,092 individuals from diverse populations.
- **UK 100,000 Genomes Project (2018):** Focused on sequencing 100,000 genomes to study the genetic basis of rare diseases and cancers, enabling advancements in personalized medicine.
- **European 1+ Million Genomes Initiative:**A collaborative effort among 24 European countries aiming to sequence over 1 million genomes to enhance healthcare and research across the continent.

SIGNIFICANCE OF GENOME INDIA PROJECT AND GENOME SEQUENCING:

- **Identification of Genetic Risk Factors for Diseases**:

By analysing the genetic data of a diverse population like India's, researchers can identify genetic variations associated with various diseases, aiding in early detection, prevention, and targeted interventions for high-risk individuals.

For instance, a mutation, **MYBPC3**, which leads to **cardiac arrest** at a young age, is found in 4.5% of the Indian population but is rare globally.

Another mutation called **LAMB3** causes a lethal **skin condition**. It is found in nearly **4% of the population near Madurai**, but it is not seen in global databases.

- **Genetic Diversity and Population Structure**:

India's population exhibits considerable genetic diversity due to **historical migrations, endogamy, and cultural practices.**

The Genome India project aimed to capture this diversity by sampling individuals from diverse linguistic, ethnic, and tribal groups across the country. Analyzing genetic variations within and between populations sheds light on **population history, migration patterns, and genetic admixture.**

- **Global Leadership:**

As one of the **largest genomic initiatives in the world**, the Genome India Project can position India as a leader in genomics research and innovation on the global stage.

- **Unique Resource for Research:**

The genetic map created by the Genome India project serves as **a unique resource for researchers worldwide.**

With India's diverse population consisting of over **4,600 distinct groups**, **each with its genetic makeup**, the dataset provides valuable insights into the impact of genetic variations on health and disease. For instance, Union Science minister described India as the **"largest genetic lab in the world."**

- **Targeted treatments for rare diseases:**

Studying a population's genetic makeup helps develop targeted treatments for rare diseases.

For instance, the development of therapies like **mRNA vaccines for specific genetic mutations, such as in pancreatic cancer**, demonstrates its potential impact on curing diseases.

- **Personalized Medicine and Pharmacogenomics:**

Pharmacogenomics is a field that examines how an **individual's genetic makeup influences their response to drugs.**

The Genome India Project aids pharmacogenomics research, identifying genetic variations influencing drug metabolism and reactions. This informs the development of **safer, tailored medications** for the Indian population.

For instance, certain populations like the **Vaishya community in South India lack genes for processing common anaesthetics**, rendering them ineffective and potentially fatal for this group.

- **Agriculture:**

Although primarily focused on human genetics, the data and methodologies developed through the Genome India Project can also have applications in agriculture. Understanding genetic diversity can lead to the development of **better crop varieties, suited to the specific climatic and soil conditions of different regions in India.**

- **Saving Biodiversity:**

Genome Sequencing help record the genomes of organisms at risk. Given Climate Change and related **worries of Sixth Great Extinction**, genome sequencing could provide a solution to conservation efforts.

- **Discovery of new Species and resources:**

It is believed that there of the 2-3 million eukaryotic species on the planet, only about half have been identified so far. Genome sequencing can help **identify many of these hidden faunal and floral varieties.**

It can also lead to the discovery of new drugs, new biofuels, and boost agricultural technologies, with obvious commercial benefits.

CHALLENGES AND CONCERNS:

- **Fear of Scientific Racism:**

The question of **heredity and racial purity** has obsessed civilizations throughout history.

Increased genetic research may reinforce stereotypes and introduce racial elements into politics and history, particularly in India, where **identity politics is prevalent.**

- **Data & Storage:**

After collection of the sample, the anonymity of the data and questions of its possible use and misuse would need to be addressed.

For instance, India is **yet to pass a Data Privacy Bill** with adequate safeguards.

- **Medical Ethics:**

In a project that aims only to create a database of genetic information poses a risk of doctors privately performing gene modification.

Selective breeding or Eugenics has always been controversial for long. For instance, in Shenzhen, a scientist who claimed to have created the **world's first gene-edited babies** was sentenced to three years in prison.

- **Lack of sufficient legal frameworks:**

Legislative measures to regulate the biotechnology environment in India is still in the nascent stages of development. Hence, it can create fears to malpractices and inefficient regulations.

- **Intellectual Property and Commercialization:**

Genome sequencing data raises questions about **intellectual property rights, data ownership, and equitable access.** Balancing commercial interests with public benefit and scientific advancement presents legal and ethical challenges.

- **Global Collaboration and Data Sharing:**

Maximizing genetic data utility requires international collaboration and data sharing initiatives. Challenges may arise from **regulatory differences and cultural sensitivities**, underscoring the need for responsible data sharing mechanisms.

- **Data Accuracy and Quality Control:**

Ensuring accuracy and reliability involves **addressing errors in sequencing, sample contamination, and data processing**. Robust quality control measures are essential for meaningful interpretation and downstream applications.

- **Long-term Data Storage and Maintenance:**

Sustainable strategies for storage and maintenance include considerations for **format standards, security protocols, and funding.**

WAY FORWARD:

- **Strengthen Data Privacy Laws:** Expedite the passage of comprehensive data protection legislation to safeguard sensitive genetic information.
- **Promote Ethical Standards:** Develop stringent ethical guidelines to prevent misuse of genetic data and ensure its responsible application.
- **Enhance Infrastructure:** Invest in advanced sequencing technology and data storage facilities for efficient project execution and long-term maintenance.
- **Encourage Public Awareness:** Conduct educational campaigns to build public trust and address concerns regarding genetic research.
- **Foster Global Collaboration:** Establish international partnerships for knowledge sharing and leveraging global expertise in genomics.
- **Expand Research Applications:** Extend the use of genomic data to areas like agriculture, biodiversity conservation, and new drug discovery.

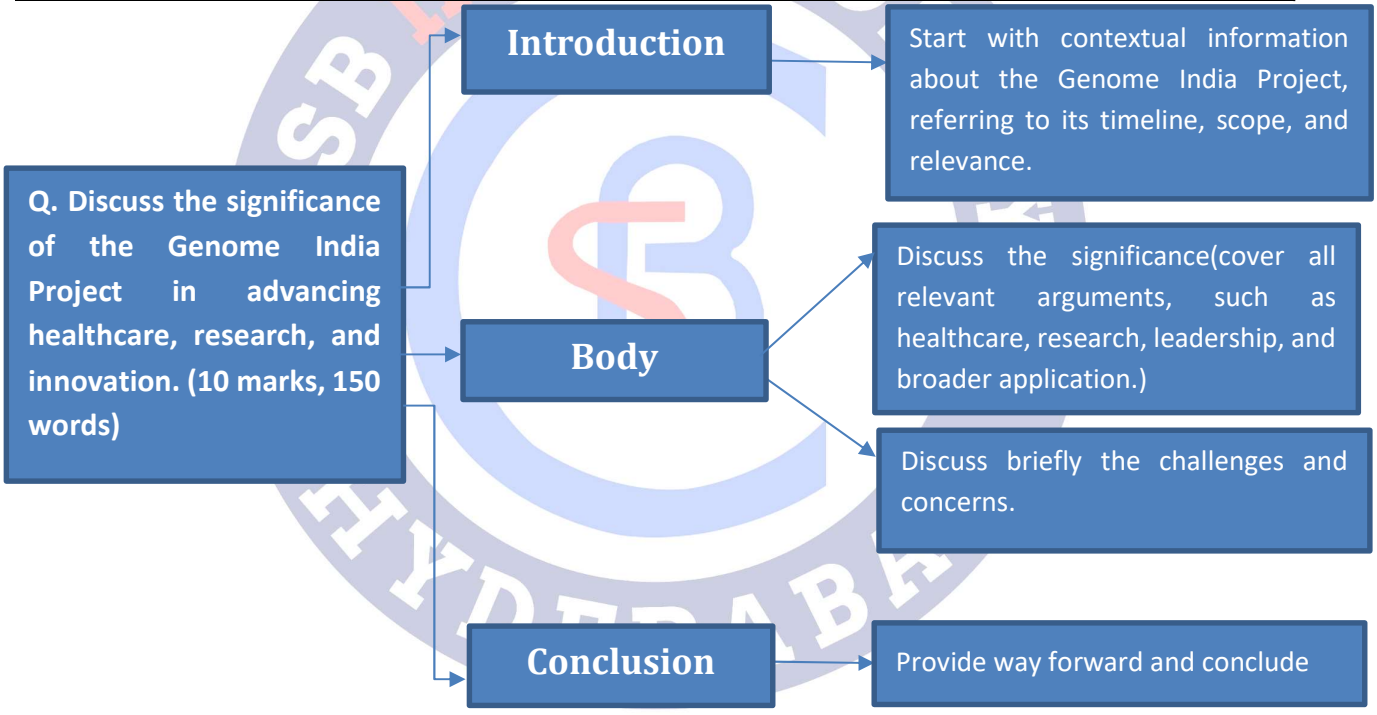
CONCLUSION

The Genome India Project is a landmark initiative with the potential to transform healthcare, research, and innovation. By addressing challenges related to privacy, ethics, and infrastructure, India can establish itself as a global leader in genomics. The project not only aids in advancing personalized medicine and disease research but also highlights the nation's commitment to leveraging science and technology for the betterment of humanity.

PRACTICE QUESTION

Q. Discuss the significance of the Genome India Project in advancing healthcare, research, and innovation. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The Genome India Project, described by Prime Minister Narendra Modi as a historic milestone in biotechnology, is a transformative initiative aimed at **mapping India's genetic diversity.** Launched in 2020 by the Department of Biotechnology, it has successfully **sequenced 10,000 genomes** from diverse populations, providing a comprehensive genetic dataset. The project serves as a foundation for understanding India's unique genetic makeup and offers **insights into disease mechanisms, personalized medicine, and global genomics research.**

Significance of the Genome India Project

1. **Mapping India's Genetic Diversity:** India's population exhibits immense genetic diversity due to historical migrations, endogamy, and cultural practices. By sequencing genomes from over 99 ethnic populations and 4,600 distinct groups, the project provides:
    - Insights into population history, genetic admixture, and migration patterns.
    - A valuable genetic map that highlights variations absent in global databases.
2. **Identification of Genetic Risk Factors for Diseases:** The project identifies genetic variations linked to diseases, enabling early diagnosis and targeted therapies.
    - **Examples:**
        - **MYBPC3 Mutation:** Found in 4.5% of the Indian population, associated with early cardiac arrest but rare globally.
        - **LAMB3 Mutation:** Linked to a lethal skin condition, prevalent near Madurai but absent in global databases.
3. **Advancing Personalized Medicine:** The project enhances pharmacogenomics by identifying genetic traits that influence drug efficacy and safety.
    - **Example:** The Vaishya community in South India lacks genes to metabolize common anesthetics, necessitating tailored treatments to prevent fatal outcomes.
4. **Rare Disease Research:** By analyzing genetic variations, researchers can develop targeted therapies for rare diseases.
    - Breakthroughs like mRNA vaccines for specific genetic mutations demonstrate the potential for life-saving innovations.
5. **Resource for Global Research:** The genetic database serves as a unique resource for researchers worldwide, offering insights into genetic variations and their implications for health and disease.
    - India's genetic diversity positions it as a "genetic lab of the world," fostering advancements in diagnostics and therapies.
6. **Applications Beyond Healthcare**
    - **Agriculture:** Genomic data can aid in developing climate-resilient crops tailored to regional conditions.
    - **Biodiversity Conservation:** Genome sequencing supports the preservation of species at risk due to climate change and habitat loss.

- **Discovery of New Resources:** Identifying hidden species could lead to innovations in drug development, biofuels, and agricultural technologies.

7. **Strengthening Global Leadership:** The Genome India Project, one of the largest genomic initiatives globally, positions India as a leader in genomics. It enables international collaborations and contributes to global research, elevating India's status in biotechnology.

Challenges and Concerns

1. **Data Privacy and Ethics:** Lack of comprehensive data protection laws raises concerns about misuse of genetic data.
2. **Scientific Racism:** Genetic research may inadvertently reinforce stereotypes, particularly in India's identity-driven society.
3. **Infrastructure and Accuracy:** Maintaining sequencing quality and managing large-scale data are critical challenges.
4. **Regulatory Gaps:** Absence of robust biotechnology regulations complicates commercialization and data-sharing frameworks.
5. **Collaboration Barriers:** Cultural and regulatory differences could hinder global partnerships and the full utilization of genomic data.

The Genome India Project is a landmark initiative that not only enhances healthcare and research but also positions India as a global leader in genomics. It enables the development of personalized medicine, targeted therapies, and advancements in agriculture and biodiversity conservation.

Way Forward: To maximize its potential, India must:

- Enact robust data privacy and biotechnology laws.
- Strengthen infrastructure for sequencing and data management.
- Promote public awareness to address ethical concerns.
- Expand applications in agriculture and environmental conservation.

With these measures, the Genome India Project can transform healthcare and research, providing a blueprint for global genomic initiatives while underscoring India's commitment to scientific excellence.

29. INDIA'S STARTUP ECOSYSTEM

iMPACT ANALYSIS

SYLLABUS:

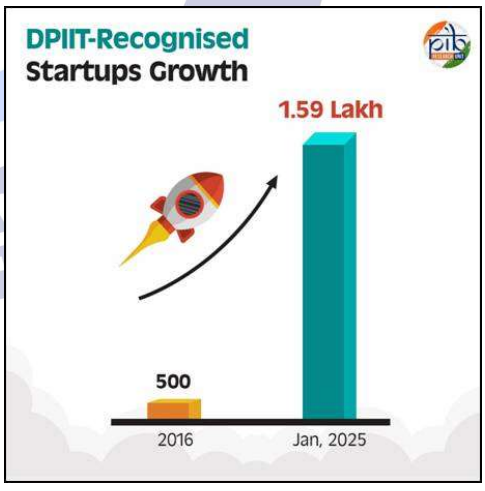
GS 3 > Economic Development > Indian Economy and issues > Innovation and New technologies

REFERENCE NEWS:

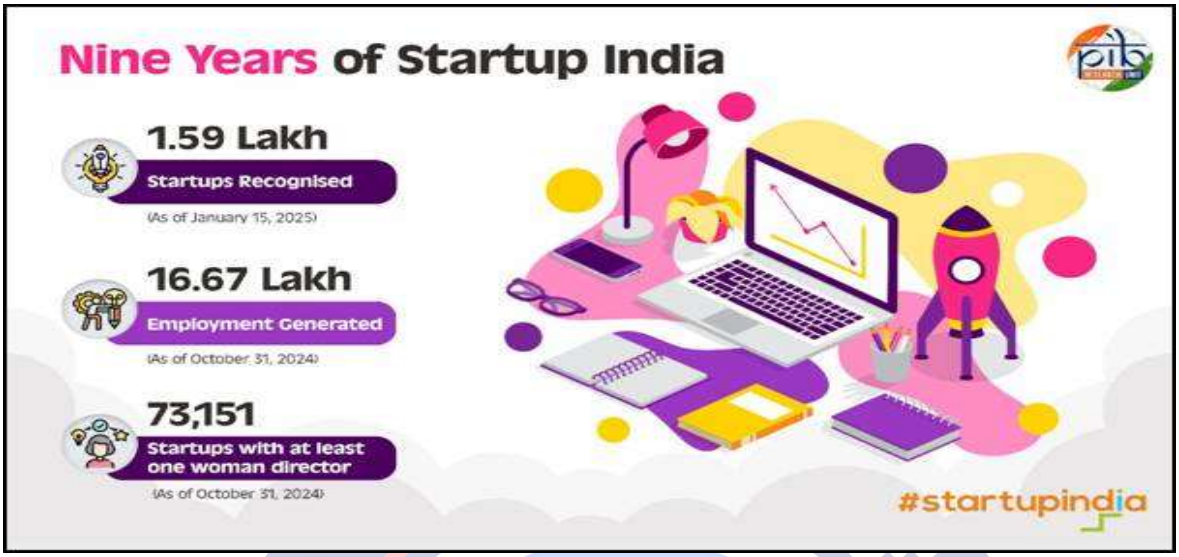
- India's startup landscape has witnessed transformative growth over the past decade on the back of key policy interventions and initiatives. From the launch of the 'Startup India' initiative on **January 16, 2016,** the startup ecosystem has evolved significantly. As the country celebrates the **9th anniversary of Startup India** on January 16, 2025, the ecosystem now boasts **159,000 DPIIT-recognised startups, making it the third-largest globally.**

INDIA'S STARTUP ECOSYSTEM:

- India's startup ecosystem has experienced remarkable growth, establishing the country as the **world's third-largest startup hub**, following the United States and China. (Source: Ministry of Commerce & Industry)
- As of January 15, 2025, the Department for Promotion of Industry and Internal Trade (DPIIT) has recognized **1,59,157 startups**, a significant increase from **approximately 500 in 2016.**



- India's startup ecosystem, driven by **over 100 unicorns**, continues to redefine innovation and entrepreneurship on the global stage.
- Between 2016 and October 31, 2024, startups created approximately **17.28 lakh direct jobs**, underscoring their contribution to the economy. (Source: Ministry of Commerce & Industry)
- The top five states in India with the most recognised startups are **Maharashtra, Karnataka, Delhi, Uttar Pradesh and Gujarat.**



Startups and associated terms:

- **Minicorn** startups are companies with valuations of more than **USD 1 million** and they are still on the rise to become a unicorn business.
- **Soonicorn** ("soon to be unicorn") are startups with growth potential and the possibility of joining a unicorn club.
- **Unicorn** is a start-up is a privately held company with a **valuation of USD 1 billion** or more.
- **Decacorn** is a startup company with a current valuation of over **USD 10 billion**.
- **Hectacorns** are companies having a valuation of more than **USD 100 billion**. Eg: ByteDance and SpaceX.
- **Zebra startups:** Unlike unicorns, Zebra startups focus not only on profit goals, but also on sustainability aspects. In addition to economic goals, these startups pursue sustainable or social motives like climate change and human rights.

OPPORTUNITIES AND GROWTH DRIVERS FOR INDIA'S STARTUP ECOSYSTEM

- **India's demography:**

India has more than **50% of its population below the age of 25 and more than 65% below the age of 35**. The youth is aspirational as well as more receptive to disruptive technologies. This creates a suitable ecosystem for innovation and startups.

- **Rising consumption:**

As the Indian economy continues to grow, **incomes and purchasing power are increasing steadily**. One in two households is expected to be upper-middle income and high-income by 2030. **This can boost consumption**, making India a strong market.

- **Comparative advantage:**

Human capital, well-established ICT sector and rapid strives to a digital and knowledge-based economy has enabled India to become a breeding ground for innovation and startups.

- **Technological developments:**

Increased **adoption of smartphones, UPI-based payments, cheaper internet connectivity** etc. has reduced the cost of building digital products and improved access to consumer markets.

Future trends present a great opportunity for startups to disrupt and innovate by using technologies such as **blockchain, the Internet of Things (IoT), artificial intelligence (AI), and machine learning (ML),** among others.

- **Government Support:**

Through various measres, like the flagship **"Startup India" initiative**, government is promoting a strong ecosystem that is conducive for the growth of startup businesses.

Besides these, **reforms to promote ease of doing business** in the country is actively being pursued. For example, the codification of labour laws.

- **Open innovation approach by large companies:**

Large companies realise that they cannot simply rely on internally generated knowledge and build everything themselves. Hence, they are **increasingly reaching out to startups to increase their own innovativeness**, through **investments, strategic partnerships and acquisitions**.

For instance, in 2022, HCL Group acquired a majority stake in ed-tech platform GUVI.

- **India's diversity:**

Also, if startup solutions are successful in addressing the needs of diverse customers pan-India, they **can likely find market uptake in other geographies such as Africa and Latin America**.

- **Changing perceptions towards entrepreneurship:**

The **social acceptability of entrepreneurial careers is increasing in India**. The success stories of entrepreneurs and unicorns are receiving much media attention today.

For example, Falguni Nayar received wide recognition when her e-commerce company '*Nykaa'* became India's first woman-led Unicorn.

CHALLENGES:

- **'Funding winter'**:

Global macroeconomic factors, such as the **Ukraine-Russia crisis and rising interest rates, have led to reduced venture capital availability**.

This has triggered valuation corrections, layoffs, forced mergers, and acquisitions in the Indian startup ecosystem. Consequently, the ecosystem faces challenges in securing funding and sustaining growth amid these economic pressures.

- **Limited sources of finance:**

Methods used elsewhere in the world have not been tried or are not applicable in India. For instance, **equity crowdfunding and Pre-order crowdfunding** are widely prevalent in US and Japan, but not in India.

- **Access to supporting infrastructure:**

Support mechanisms like incubators, science and technology parks, business development centers etc. **remain largely restricted to tier I and tier II cities**. Lack of access to such support mechanisms **increases the risk of failure**.

- **Revenue generation:**

Despite increasing incomes, the Indian customer base continues to be **price-sensitive towards products and services.** Also, convincing them is difficult, especially if the startup develops innovative products and caters to new market segments. Hence, it is **difficult for startups to generate a paying customer base**.

- **Acquiring and retaining human resource:**

Because they have **little awareness of industry needs, fresh graduates are usually not readily employable** from the beginning. Hence **startups have to invest significant amount of time and cost** to train new employees.

Due to the inherent risk that the startup might fail, **job seekers are hesitant to join a startup**. Also, many of those who start working for startups, switch to established companies at the earliest.

- **Lack of mentorship:**

Most of startups have brilliant ideas and/or products, but have little or no industry, business, market experience and branding strategy to get the products to the market.

- **Low investments in research and development:**

As per the R&D Statistics at a Glance 2022-23 report by the Department of Science and Technology, India's Gross Expenditure on Research and Development (GERD) stood at **0.64% of GDP in 2020–21**, down from 0.66% in 2019–20. This remains significantly lower than countries like China (2.4%) and the US (3.5%).

India also struggles with a lack of **innovation**. Though patents filed in India have grown to **58,502 in 2020-21, it is still a fraction of the 5.30 lakh patents granted in China and 3.52 lakh patents granted in the USA**.

Also, India produces around 24,000 PhDs annually but faces a deficit in intellectual property (IP). For instance, in 2024, **$14.3 billion was paid in IP royalties, while earnings were only $1.5 billion.**

- **Information barrier:**

Most of the **research activities in promising sectors like space and defence are centered around government organisations** like ISRO and DRDO. Hence, nominal amount of information is available in the public, which hinders the development of indigenous start-ups.

- **Regulatory hurdles:**

A complex **unfriendly capital gains tax system** is a major reason why many Indian start-ups have relocated their headquarters outside India

Terms for startups to qualify for government benefits are **too stringent and the application process cumbersome**. This, coupled with multiplicity of laws and red tapism, results in delays in registration, acquiring licenses and permits, data storage and processing, contract management etc.

MAJOR GOVERNMENT INITIATIVES:

- **Startup India:** Launched in 2016, Startup India is a flagship initiative of the Government of India, intended to catalyse startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India.

Core Features of the Startup India Initiative

- **Ease of Doing Business:** Simplified compliance, self-certification, and single-window clearances streamline processes for startups.
- **Tax Benefits:** Eligible startups enjoy tax exemptions for three consecutive financial years.
- **Funding Support:** The ₹10,000 crore Fund of Funds for Startups (FFS) supports early-stage funding.
- **Sector-Specific Policies:** Focused policies for sectors like biotechnology, agriculture, and renewable energy foster targeted growth.

- **MUDRA Yojana:** Supports micro-enterprises with refinance loans up to ₹10 lakh, enabling small businesses to thrive.
- **Standup India Scheme:**Promotes entrepreneurship among **SCs, STs, and women** by providing loans between ₹10 lakh and ₹1 crore for greenfield enterprises.
- **Atal Innovation Mission (AIM):** Fosters innovation and entrepreneurship through initiatives like:
  - **SETU Program**: Supporting self-employment and talent utilization.
  - **Tinkering Labs**: Promoting innovation at the school level.
  - **Incubation Centres**: Encouraging startups at research institutes.

Sector-Specific Initiatives:

- **Software Technology Parks (STP) Scheme**: 100% export-oriented scheme for IT software development and services.
- **Support for International Patent Protection (SIP-EIT)**: Financial aid for MSMEs and startups for international patent filings.
- **Innovations for Defence Excellence (iDEX)**: Supports startups to innovate in defence and aerospace technology.

- **IN-SPACe**: Promotes private sector involvement in satellite building and space exploration.
- **A Scheme for Promotion of Innovation, Rural Industries, and Entrepreneurship (ASPIRE)**: Encourages innovation in agro-industries through incubation and technology centers.

Recent Innovations:

- **BHASKAR Platform (2024):** A digital ecosystem connecting startups, mentors, and investors. Key features include:
  - Seamless networking.
  - Centralized access to resources.
  - Inclusivity for startups from non-metro regions.
- **Startup Mahakumbh**: Annual event showcasing startups, investors, and policymakers to foster collaboration and innovation.

Outreach and Collaboration:

- **Regional Capacity Building**: Workshops under **States' Startup Ranking Framework** ensure equal access to resources in non-metro cities.
- **Global Engagement**: India's **G20 Presidency** institutionalized the **Startup20 Engagement Group**, strengthening international linkages.

Indian Initiatives to Create a Conducive Ecosystem for Emerging Businesses and Startups

Timeline	Government Program	Aims and Target
2009	Invest India	Creation of an investment promotion and facilitation agency
2009	IndiaStack and UiD	Digital push for cashless, paperless, consent-based scalable architecture to support Aadhaar – Universal Identification project
2013	SEBI's Alternative Investment Fund Regulations	New norms for angel investors, who provide funding to companies in their initial stages
2014	Make in India	Flagship initiative of the Government of India (GoI) aimed at making the country a "global design and manufacturing" destination
2015	Digital India	Flagship program of the GoI aimed at expanding e-governance to promote inclusive growth and transform India into a "digitally empowered society and knowledge economy"
2015	Skill India initiative	A vocational training and certification program aimed at giving 400 million youth the opportunity for a better livelihood by 2022
2016	Startup India Initiative	Flagship initiative of the GoI to catalyze the startup culture and build an ecosystem for innovation and entrepreneurship
2016	Startup India Online Portal	367,171 registered startups, 26,374 recognized startups, 221 I tax exemptions, and 264 were funded by SIDBI FFS (as of 31 December 2019)
2016	Atal Incubation Centres (AICs) under Atal Innovation Mission (AIM)	31 AICs have been funded with INR 1.4 billion (approximately $20.39 million) and INR 576.8 million ($8.12 million) disbursed
2016	SIDBI "Fund of Funds for Startups (FFS)"	INR 100 billion corpus (approximately $1.4 billion) contributing to the Alternate Investment funds (AIFs) for investing in startups
2016	Bharat Interface for Money (BHIM) and United Payment Interface	Mobile payment app developed by the National Payments Corporation on the United Payments Interface to allow seamless and verified payments
2019	Technology Incubation and Development of Entrepreneurs (TIDE) 2.0	MeitY-sponsored program to promote socially relevant tech entrepreneurship through incubators engaged in supporting ICT startups using emerging technologies (IoT, AI, blockchain, etc.)

WAY FORWARD:

- **Promote Original Innovation:**
    - **Go Beyond Imitation**: Focus on creating meta-level startups addressing fundamental problems with global scalability rather than replicating existing global ideas.
    - **Upgrade R&D and Education**: Improve research infrastructure and update educational curriculums to prepare students for the digital age.
- **Strengthen Domestic Financing Ecosystem**
    - **Enhance Existing Mechanisms**: Strengthen banks, venture capital, and angel investor networks to promote startup funding.
    - **Introduce New Financing Models**: Explore innovative approaches like equity crowdfunding, peer-to-peer lending, and pre-order financing.
    - **Leverage Institutional Investors**: Encourage domestic funding from large institutions like pension and insurance funds.
    - **Allow Overseas Listing**: Permit domestic companies to list overseas to access global capital markets.
- **Decentralize Startup Infrastructure**
    - **Expand to Tier 2/3 Cities**: Establish more incubators, science parks, and mentorship programs outside metropolitan areas.
    - **Support Niche Industries**: Provide targeted incubation support in sectors like media, education, healthcare, governance, sanitation, and clean energy.
- **Reverse Brain-Drain**
    - Incentivize Indian professionals abroad to return and establish startups domestically by offering financial, regulatory, and infrastructure support.
- **Foster Data-Driven Decision Making**
    - **Open Data Access**: Make comprehensive startup data available for big data analysis to identify success factors and address failure risks.
    - **Global Best Practices**:

- Learn from **Japan's Credit Risk Database**, which uses decades of data to analyze SME characteristics and promote financing.
- Establish an agency similar to **Singapore's International Enterprise** to help Indian startups expand globally.

- **Promote Innovation and R&D**
  - **Boost R&D Spending**: Raise R&D investment beyond the current **0.64% of GDP** to drive innovation and match global leaders like China (2.4%) and the US (3.5%).
  - **Collaboration**: Foster partnerships between industry, academia, and government to bridge innovation gaps.
- **Ease Regulatory Hurdles**
  - Simplify processes for accessing government benefits and creating a startup-friendly tax regime.
  - Reduce bureaucratic delays in registration, permits, and compliance requirements.

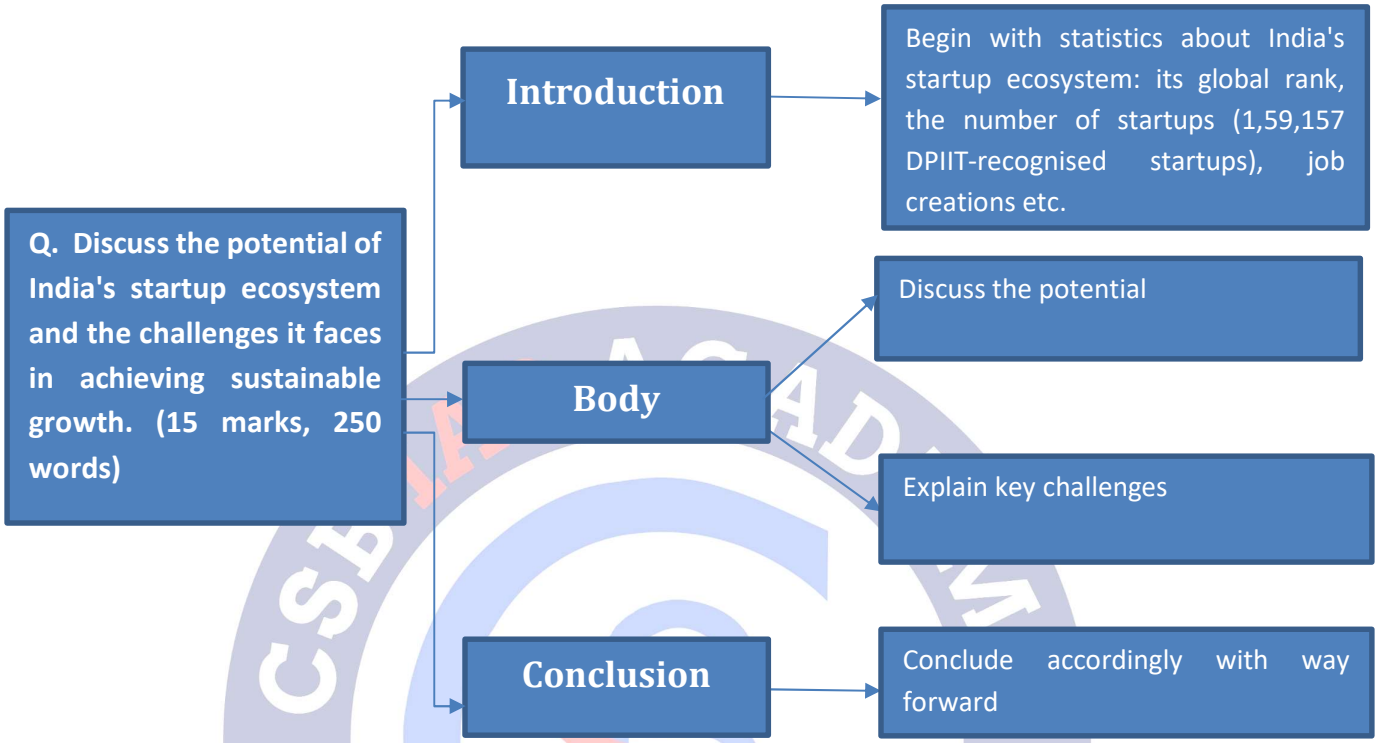
CONCLUSION

- India's startup ecosystem holds immense potential, driven by its young population, technological capabilities, and supportive government policies. By focusing on innovation, decentralization, robust financing, and global expansion, India can unlock unparalleled growth and cement its position as a **global startup leader**.

PRACTICE QUESTION

Q. Discuss the potential of India's startup ecosystem and the challenges it faces in achieving sustainable growth. (15 marks, 250 words)

APPROACH



MODEL ANSWER

India's startup ecosystem has evolved into the **third-largest globally**, with **1,59,157 DPIIT-recognised startups** as of January 15, 2025, compared to approximately 500 in 2016. With over **100 unicorns** and **17.28 lakh direct jobs created between 2016 and 2024**, it showcases immense potential for driving innovation and economic growth. Major hubs such as Maharashtra, Karnataka, and Delhi lead the way, while **Tier 2 and Tier 3 cities are emerging as significant contributors.**

Potential of India's Startup Ecosystem

1. **Demographic Dividend**: **65% of the population below 35 years** provides a vast, tech-savvy workforce and a market receptive to innovation.
2. **Rising Consumption**: By 2030, **one in two households** is expected to be upper-middle or high-income, offering startups a growing consumer base.
3. **Technological Advancements**: The adoption of **smartphones, UPI, and AI-driven solutions** has reduced market entry costs and enhanced consumer access.

4. **Global Innovation Hub**: Startups in **fintech, edtech, health-tech, and clean energy** are solving global challenges and expanding their reach.

5. **Government Support**: Initiatives like **Startup India**, tax incentives, and funding schemes such as the **₹10,000 crore Fund of Funds** are creating a conducive environment for startups.

Challenges Facing India's Startup Ecosystem

1. **Funding Winter**: Global macroeconomic factors, such as the Ukraine-Russia crisis and rising interest rates, have reduced venture capital availability.

2. **Limited R&D Spending**: India's R&D expenditure stands at **0.64% of GDP** (2020–21), far below China's **2.4%** and the US's **3.5%**.

3. **Infrastructure Gaps**: Incubators and science parks are largely confined to Tier 1 cities, limiting opportunities in smaller regions.

4. **Regulatory Hurdles**: A complex tax system and red tape discourage startups from scaling operations domestically.

5. **Human Resource Challenges**: Limited industry readiness among fresh graduates and high attrition rates hinder workforce stability.

6. **Low Revenue Generation**:The Indian market remains **price-sensitive**, making it challenging for startups to build a paying customer base.

Way Forward

- **Promote Innovation**: Increase **public and private R&D spending** and foster **industry-academia collaboration**.
- **Strengthen Domestic Financing**: Explore models like **equity crowdfunding**, **peer-to-peer lending**, and encourage **pension funds** to invest in startups.
- **Decentralize Infrastructure**: Expand incubators, science parks, and mentorship programs to **Tier 2/3 cities**.
- **Ease Regulations**: Simplify tax policies and processes for startup registration and access to government benefits.
- **Incentivize Brain Gain**: Attract Indian professionals abroad to return and establish startups through financial and infrastructural support.

- **Adopt Global Best Practices**: Develop a **Credit Risk Database** (as in Japan) and establish an agency similar to Singapore's **International Enterprise** to promote global expansion.

India's startup ecosystem is at the forefront of the nation's economic and technological transformation. By addressing challenges and leveraging its strengths, India can realize its vision of **Viksit Bharat by 2047**, positioning itself as a global leader in innovation and entrepreneurship.

30. STAMPEDES AND CROWD MANAGEMENT

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Disaster Management > Disasters

REFERENCE NEWS:

- Recently, a tragic stampede at the Mahakumbh Mela in Prayagraj resulted in 30 fatalities and 60 injuries. The overwhelming crowd during Mauni Amavasya, moving towards the Sangam Nose, led to the disaster.

- **Mauni Amavasya** is an important Hindu religious observance that falls on the **no-moon day** (Amavasya) in the Hindu month of **Magha** (January-February). It holds great significance in spiritual and religious traditions, especially during the **Kumbh Mela** and **Magh Mela** in **Prayagraj (Allahabad)**.
- **Sangam Nose** refers to the **precise confluence point** of the **Ganga, Yamuna, and the mythical Saraswati rivers** in Prayagraj (Allahabad), Uttar Pradesh. It is the **most sacred spot** at the **Triveni Sangam**, where pilgrims and sadhus take a holy dip, especially during religious festivals like **Kumbh Mela** and **Mauni Amavasya**.

STAMPEDES:

- The term stampede is applied to a **sudden rush of a crowd of people**, usually **resulting in many injuries and death** from **suffocation and trampling**.
- Stampedes are caused by **surge of individuals in a crowd**, **in response to a perceived danger**, **loss of physical space** or **excitement.**
- Data available with the **National Crime Records Bureau (NCRB)** indicates that there have been a total of **3550 incidents of stampede** in the country **from 2001 to 2015** resulting in the **death of 2901 people.**
- A 2013 study published by the **International Journal of Disaster Risk Reduction** (IJDRR) points out that **religious gatherings and pilgrimages** have been **venues for 79% of the stampede in India.**

Major Stampedes in India

- **January 2005, Mandhardevi Temple, Maharashtra**: Over 340 devotees died due to a stampede triggered by slippery steps covered with coconut water.
- **August 2008, Naina Devi Temple, Himachal Pradesh**: Rumors of rockslides caused a stampede, resulting in 162 deaths.
- **September 2008, Chamunda Devi Temple, Jodhpur**: Nearly 250 devotees died following a panic caused by rumors of a bomb explosion.
- **January 2011, Sabarimala Shrine, Kerala**: A jeep accident led to a stampede that claimed at least 104 lives.
- **October 2013, Ratangarh Temple, Madhya Pradesh**: Rumors about a collapsing bridge triggered a stampede, killing approximately 115 people.
- **January 2022, Mata Vaishno Devi Shrine, Jammu and Kashmir**: A heavy rush of devotees during the new year celebrations led to a stampede, resulting in 12 deaths.
- **March 2023, Indore, Madhya Pradesh**: A slab collapse during a religious event on an ancient well caused at least 36 fatalities.

CAUSES AND TRIGGERS OF CROWD DISASTERS (OR STAMPEDES):

- **Structural:**
  - Incidents like the **collapse of barricades, barriers, and makeshift bridges** often occur due to panic caused by rumors.
  - Other structural issues include **difficult terrain** at religious sites, **slippery roads, narrow streets** cluttered with vendors, poor guard railings, dimly lit stairwells, and inadequate exits.
- **Crowd Control:**
  - Factors contributing to poor crowd control include **underestimating audience size**, insufficient staffing, overselling of event tickets, **reliance on a single exit route**, and lack of adequate public address systems.
- **Crowd behaviour:**
  - Crowd behavior can be influenced by unruly actions, **panic sparked by rumors**, and rushes towards exits, along with **sudden reversals** in crowd direction and overly **competitive behavior** at events like sales.

- Alexander Mintz's 1952 work highlights how panic can lead to **selfish behaviors that compromise group safety.**
- Neil J. Smelser's 1962 theory describes **"craze" as irrational beliefs** spreading among crowds, risking safety. This was evident in **Hathras stampede (2024 July)**, where, according to the Uttar Pradesh Chief Secretary, a stampede occurred as **people rushed to touch a preacher's feet and collect soil from his path.**

- **Fire/Electricity:**
  - Causes include fires in makeshift facilities, non-working fire extinguishers, building code violations, inadequate lighting, electricity failures, and illegal electrical connections.
- **Security:**
  - Inadequate security and surveillance, such as insufficient deployment of personnel, lack of scientific planning for crowd management, and inadequate CCTV surveillance.
- **Lack of Coordination between Stakeholders:**
  - **Coordination gaps** between various **agencies like police, PWD, fire services, and shrine management** can lead to communication delays and inefficient crowd management.

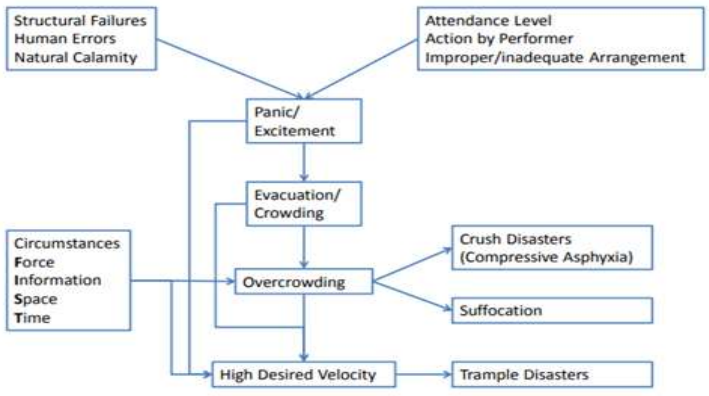


Figure 1: Crowd Disaster Process (Source: NDMA)

Force, Information, Space and Time (FIST)

- **Fruin** suggested that Force, Information, Space and Time **(FIST)** are the **main factors that influence the occurrence of crowd disaster.** (**Figure 1**)
- **F** - Crowd **F**orce,
- **I** - the **I**nformation **(false or real)** upon which the crowd acts,
- **S** -the physical **S**pace (seating area, chairs, corridors, ramps, doors, lifts etc.) involved
- **T** - the **T**ime duration of the incident (rapid ingress/egress) play a very important role resulting in either overcrowding (high crowd density: a large number of people per unit area) or high desired velocity (accelerated movements).

Causes of Death in Stampedes

- **Primary cause: Traumatic asphyxia**, where intense crowd pressure prevents normal breathing, leading to death by suffocation.
- Other causes include:
  - **Myocardial infarction**: Heart attacks triggered by reduced blood flow during intense crowd pressure.
  - **Direct injuries**: Crushing of internal organs, head injuries, and neck compression.

NDMA GUIDELINES ON CROWD MANAGEMENT:

- **Understanding Visitors and Stakeholders:**
  - Event planning requires understanding the **visitor profile**, influenced by the event type (e.g., religious, sports, music concerts), season, and **venue characteristics** (e.g., open or confined spaces, terrain). Organizers should estimate the crowd's demographics and numbers based on past experiences.
- **Risk Analysis and Preparedness:**
  - Prevention is emphasized, aiming to forestall serious situations through risk **assessment and identifying potential threats.**
- **Information Management and Dissemination:**

- Effective information management is crucial to prevent panic and undesired crowd movements. This includes providing **visitors with event maps, entry/exit details, and guidelines on what to bring.**
- Venue organizers and security personnel should have detailed data on visitor patterns, peak times, and emergency routes.

- **Safety and Security Measures:**
  - General safety measures include **CCTV monitoring, the use of mini UAVs for aerial crowd observation, and watch towers** equipped with communication networks.
  - Specific guidelines cover electrical and structural safety, ensuring proper use of **electricity and fire safety measures.**
  - Deployment of barriers should be strategic, using materials suitable for controlling pedestrian and vehicular flow.
- **Facilities and Emergency Medical Services:**
  - **Emergency medical units and ambulances** should be ready and accessible during events, with a comprehensive list of local medical facilities.
- **Transportation and Traffic Management:**
  - Encourages the use of **public transport** to minimize crowd and traffic impact, emphasizing **efficient traffic management** during events.

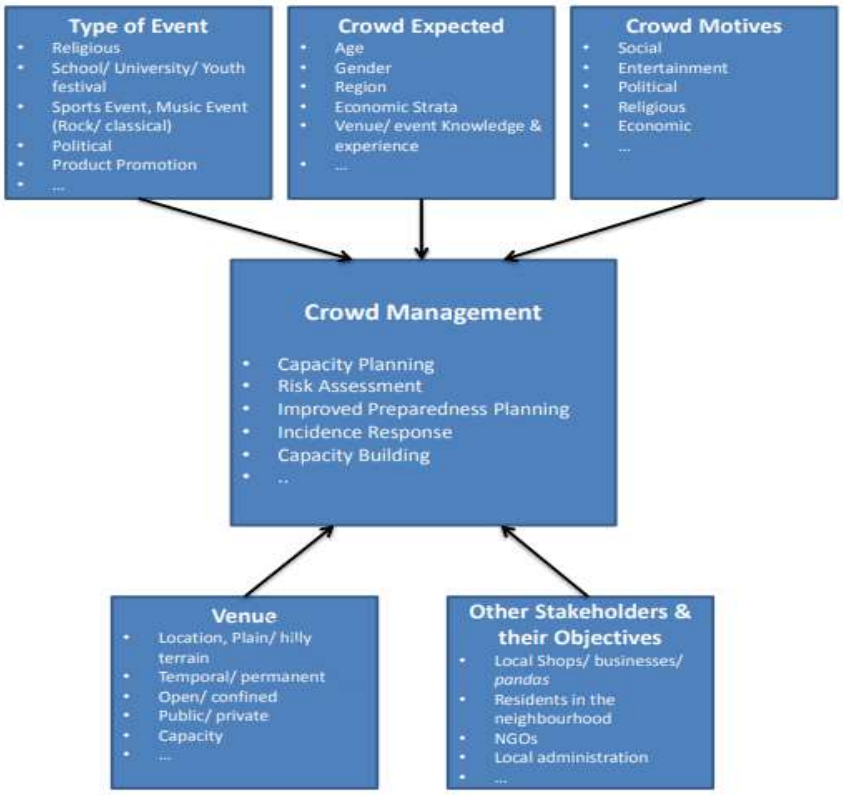


Figure-2: An Integrated Approach for the Crowd Management (Source: NDMA)

PAST INCIDENTS AND THEIR LESSONS

Nashik Kumbh 2003 (29 deaths)

Key reasons:

- Pressure at barricades
- Sudden reversal of crowd flow
- Procession of sadhus on elephants and jeeps mixed with pilgrims
- Unforeseen ingress of pilgrims into restricted areas

Kalubai Yatra Stampede, Maharashtra, 2005 (293 deaths)

Findings from the Justice Rajan Kochar Commission:

- Wrong crowd estimates
- Inadequate temple compound size

- Narrow, slippery paths congested with illegal vendors
- Illegal electrical connections
- Lack of safety and infrastructure (watchtowers, PA systems, medical facilities)
- Poor coordination among stakeholders

CHALLENGES IN CROWD MANAGEMENT

- **Resource Limitations**: Constraints in budget and resources can hamper the effective deployment of safety measures and trained personnel during large events.
- **Communication Barriers**: Diverse languages and misinformation can lead to miscommunication, complicating effective crowd control and emergency responses.
- **Technology Integration**: Challenges include high costs, infrastructural limitations, and the need for specialized training to integrate advanced technologies like CCTV and drones.
- **Regulatory Compliance**: Varying and sometimes outdated regulations can make consistent and effective crowd management difficult across different jurisdictions.
- **Scalability of Solutions**: Adapting crowd management strategies to different scales and types of events remains a significant challenge, requiring flexible and innovative approaches.

WAY FORWARD:

- **Policy Improvements**: Update and refine policies to better address crowd density, event safety, and emergency protocols.
- **Community Engagement**: Increase public awareness and education on safety measures through campaigns and drills.
- **Research and Innovation**: Invest in research on crowd dynamics and new technologies for better prediction and management of crowd movements.
- **Case Studies**: Regularly analyze past incidents to derive lessons and integrate these into training for emergency responders and event planners.
- **Role of Crowd Behavior in Stampedes:** Understanding how people react in large gatherings is crucial for prevention. The NDMA report highlights:
    - **Herd mentality:** "Individual behaviour in a crowd is sometimes influenced by the behaviour of others."

- **Unruly actions:** A small disturbance can escalate, drawing more people into dangerous movements.
- **Overcrowding due to demand outstripping supply:** The necessity for an "input control" mechanism, such as mandatory registrations, to restrict entry.
- **Spontaneous breaches of barriers:** "A long wait at places of worship may result in a few devotees climbing up fences, leading to others following them, causing overcrowding."

NDMA guidelines in the event of a stampede:

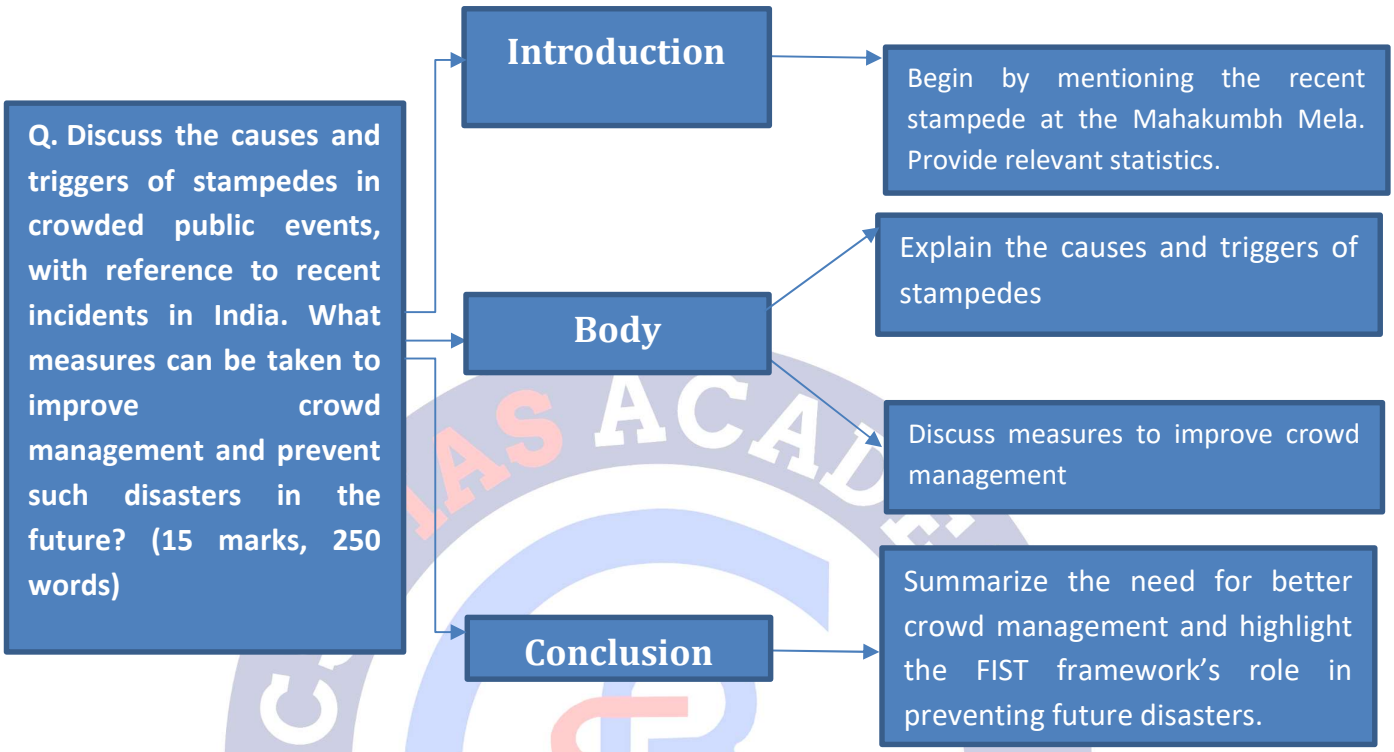
- In case a stampede breaks out, **protect your chest by placing your hands like a boxer** and **keep moving in the direction of the crowd**.
- **Stay alert to open spaces** and **move sideways wherever the crowd gets thinner**.
- **Stay away from walls, barricades or bottlenecks** such as **doorways**.
- Stay on your feet and **get up quickly if you fall.**
- If you **get injured in the process and can't get up**, **use your arms to cover your head** and **curl up like a foetus** so that your exposure area is reduced.

CONCLUSION: The Mahakumbh 2025 stampede underscores the urgent need for comprehensive crowd management strategies. A mix of **structural improvements, administrative preparedness, behavioral insights, and real-time crowd monitoring** is essential to prevent such tragedies in the future.

PRACTICE QUESTION

Q. Discuss the causes and triggers of stampedes in crowded public events, with reference to recent incidents in India. What measures can be taken to improve crowd management and prevent such disasters in the future? (15 marks, 250 words)

APPROACH



MODEL ANSWER

The recent **stampede at the Mahakumbh Mela** in Prayagraj, which resulted in 30 fatalities and 60 injuries, underscores the critical issue of crowd management in large public events. Data from the National Crime Records Bureau (NCRB) reveals 3550 stampedes in India between 2001 and 2015, leading to 2901 deaths, with **79% occurring during religious events**. These alarming statistics highlight the need for effective crowd management strategies.

Causes and Triggers of Stampedes:

1. **Structural Failures:** Poor infrastructure, such as weak barricades or narrow exits, often exacerbates crowd pressure. In the **2003 Nashik Kumbh stampede**, 29 deaths occurred due to pressure at inadequate barricades. Similarly, the **2005 Kalubai Yatra** stampede was worsened by overcrowding in confined spaces.

2. **Rumors and Panic:** Panic induced by rumors is a major cause of stampedes. In 2008, the **Naina Devi Temple stampede**, which led to 162 deaths, was triggered by false reports of a rockslide. Similarly, in the **2024 Hathras stampede**, rumors caused people to rush towards restricted areas.

3. **Overcrowding and Limited Space:** Excessive crowd sizes relative to available space often lead to overcrowding and fatalities. The **2005 Mandhardevi Temple stampede**, where over 340 people died, illustrates the deadly effects of overcrowding on slippery steps.

4. **Inadequate Crowd Control:** Failure to manage crowd size and flow is a key issue. The **2003 Nashik Kumbh** stampede occurred due to sudden surges into restricted areas. Relying on a single exit during the 2022 Mata Vaishno Devi Shrine stampede exacerbated the situation.

5. **Lack of Safety Measures:** Insufficient safety protocols, such as inadequate fire safety and medical services, contribute to the severity of stampedes. In the **2013 Ratangarh Temple stampede**, a lack of proper safety infrastructure intensified the crisis caused by rumors of a collapsing bridge.

6. **Weather and Terrain Factors:** Adverse weather conditions and poor terrain can increase the risk of accidents. The **2005 Mandhardevi Temple stampede** was caused by slippery, coconut water-covered steps, showing how environmental factors can worsen crowd dynamics.

FIST Framework:

The **FIST** framework identifies four key factors influencing crowd disasters:

- **F - Force:** Crowd pressure that increases risk.
- **I - Information:** Accurate or false information affecting behavior.
- **S - Space:** The available physical space, with limited space leading to overcrowding.
- **T - Time:** The duration of movement, where rapid ingress or egress heightens risk.

Measures for Improved Crowd Management:

1. **Enhanced Infrastructure:** Properly designed barriers, wide paths, and multiple exits are crucial. The 2005 Kalubai Yatra tragedy shows that narrow, slippery paths lead to disaster, underscoring the need for better infrastructure.

2. **Real-Time Monitoring Systems:** Deploying real-time surveillance using CCTV, drones, and UAVs helps monitor crowd behavior and identify potential risks, enabling early intervention to prevent accidents.

3. **Accurate Crowd Size Estimation:** Using data-driven crowd estimates and electronic ticketing helps manage crowd flow. The 2005 Kalubai Yatra disaster was exacerbated by inaccurate crowd estimates, highlighting the need for precise planning.

4. **Strengthened Coordination among Stakeholders:** Effective communication between event organizers, security, and emergency services is essential. The 2005 Kalubai Yatra stampede showed how poor coordination led to delays in response.

5. **Public Awareness and Training:** Educating the public on crowd safety and emergency protocols, like those outlined by NDMA, can reduce panic and guide people in emergencies. Training individuals on staying calm and moving sideways during a stampede is key.

6. **Risk Analysis and Preparedness:** Pre-event risk assessments and emergency plans are vital. The 2023 Indore stampede, where poor structural safety caused fatalities, highlights the need for thorough preparedness and safety measures.

The Mahakumbh 2025 stampede underscores the urgent need for comprehensive crowd management strategies. A combination of improved infrastructure, better crowd control, real-time monitoring, and coordinated emergency responses, informed by the **FIST framework**, is essential to prevent such tragedies in the future.

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