CSB IAS ACADEMY

The road map to Mussoorie..`

Current Affairs

MARCH (1-15) 2024

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CULTURE AND HERITAGE

1. Vikramadtiya Vedic Clock

Context:

The Vikramadtiya Vedic Clock which is mounted on an 85-foot tower at Jantar Mantar in Ujjain, was inaugurated by the Prime Minister in a recent ceremony.

About Vikramaditya Vedic Clock

Context Live mint

About

The 'Vedic Clock' is the world's first timepiece engineered to display time based on the ancient Indian traditional Panchang (time calculation system).

Developed by

Lucknow-based Sanstha Arohan

Features

 a. It offers details on planetary positions, Muhurat, astrological computations, and forecasts.

 b. It also displays Indian Standard Time (IST) and Greenwich Mean Time (GMT).

 c. It can be connected to the internet and offers numerous features through a mobile app named after the clock.

 Note– Greenwich Mean Time (GMT) is the average solar time at the Prime Meridian, located at 0 degrees longitude in Greenwich, London. The Shepherd Gate Clock at the Royal Observatory in Greenwich always displays GMT.

Operational Mechanism

The clock will measure time between two sunrises.

 a. The time span between the two sunrises will be split into 30 segments, with each hour comprising 48 minutes, according to ISD.

 b. The measurement will begin at 0:00, coinciding with sunrise, and will continue for 30 hours (where each hour equals 48 minutes).

Ujjain chosen for its establishment:

· Ujjain has a long-standing heritage in timekeeping, spanning centuries. Ujjain has played a crucial role in establishing India's time zones and differences.

· Ujjain is situated precisely at the intersection point of the zero meridian and the Tropic of Cancer.

· Before the adoption of the 82.5E longitude for IST, Ujjain (75.78E) was regarded as India's time meridian.

· The Vikrami Panchang and Vikram Samvat calendars are also released from Ujjain, making it the perfect location for the Vedic Clock.

2. Risa Textile- GI Tag

Context:

Recently, Tripura's traditional tribal attire **'Risa'** got GI tag.

About Risa

Indian express

About Risa

It is a traditionally handwoven cloth used as a female upper garment, and also as headgear, a stole, or a present to express respect.

Origin of the attire

The Tripuri attire is believed to have existed before the rule of the Manikya kings, who reigned over Tripura for over 500 years from the 15th century.

· Risa is common in almost all 19 indigenous tribal communities of Tripura. Each community has its own design. The traditional Tripuri female attire consists of three parts — risa, rignai and rikutu.

· Rignai is primarily worn as the lower garment and literally means 'to wear'. It is an indigenous variety of the sari of mainland India.

· Rituku is mainly used as a wrap, or like a 'chunri' or a 'pallu' of the Indian saree. It is also used to cover the heads of newly married Tripuri women.

Significance

It hold scrucial social, cultural and religious significance in Tripura:

Social Significance

Risa has a crucial social and religious significance as adolescent Tripuri girls are first given a risa to wear in an event called Risa Sormani, at age 12 to 14.

Religious significance

The risa is used in religious festivals such as Garia Puja by tribal communities, a turban by men during weddings and festivals, a cummerbund over the dhoti.

· It is also used as a headscarf by young girls and boys, and as a muffler during winters. The cloth is also used as a makeshift hanger to hold an infant on mothers' backs.

· It is presented as a mark of honour to distinguished recipients.

UPSC Prelims point: Risa textile

3. Rupa Tarakasi- GI Tag

Context:

Recently, Orissa's famous silver filigree Rupa Tarakasi got a GI tag.

About Rupa Tarakasi

About:

Rupa Tarakasi is one of the most exquisite silver crafts, practised in the Silver City of Cuttack, Odisha.

Origin:

· The art form has a rich history, dating back as far as the 12th century, and it received considerable patronage under the Mughals. It changed its form with change in ruler.

Process:

In this work of craft, silver bricks are transformed into thin fine wires called tara or foils, from which silver filigree is made with all designs called kasi.

While different grades of silver are used in the main metal alloy, the craftsmen also use other metals like copper, zinc, cadmium and tin.

The skilled artisans involved in this filigree work are known as "Rupa Banias" or "Roupyakaras" in Odia.

They create various items, including jewellery worn by Odissi dancers, decorative artefacts, accessories, and religious and cultural pieces.

UPSC Prelims point: Rupa Tarakasi

4. Majuli Masks GI Tag

Context:

What is the News?

Recently, Assam's traditional Majuli masks got a GI tag.

About Majuli masks

Context The Indian Express

About

These are handmade masks that are traditionally used to depict characters in bhaonas, or theatrical performances with devotional messages under the neo-Vaishnavite tradition.

· Note: Majuli is the largest river island in the world and the seat of Assam's neo-Vaishnavite tradition. Neo-Vaishnavite tradition was introduced by the 15th-16th century reformer saint Srimanta Sankardeva.

Characterstics:

· The masks can depict gods, goddesses, demons, animals and birds. Ravana, Garuda, Narasimha, Hanuman, Varaha Surpanakha all feature among the masks.

Sizes:

(a) Mukh mukha: They cover just the face, and it is made in around five days.

(b) Cho mukha: They cover the whole head and body of the performer and takes up to one-and-a-half months to be made.

· Material used: The masks are made of bamboo, clay, dung, cloth, cotton, wood and other materials available in the riverine surroundings of their makers.

· Traditional practitioners are working to take the art out of their traditional place in sattras, or monasteries, and give them a new, contemporary life.

Note: Sattras are monastic institutions established by Srimanta Sanka-

rdev and his disciples as centres of religious, social and cultural reform.

About Majuli manuscript painting

· It is a form of painting originated in the 16th century.

· It is done on sanchi pat, or manuscripts made of the bark of the sanchi or agar tree, using homemade ink.

· The earliest example of an illustrated manuscript is said to be a rendering of the Adya Dasama of the Bhagwat Purana in Assamese by Srimanta Sankardev.

· This art was patronised by the Ahom kings. It continues to be practised in every sattra in Majuli.

UPSC Prelims point: Majuli manuscript painting.

5.   Gorsam Kora Festival

Context:

The Gorsam Kora Festival which takes place every year in Zemithang valley of Arunachal Pradesh has concluded on March 10.

About Gorsam Kora Festival:

· **Location–** It is held annually in Arunachal Pradesh's Zemithang valley.

· **History–** The festival is centred around the 93-foot tall stupa – 'Gorsam Chorten'. This stupa was built in the 13th century. The 3-day event starts with prayers at the revered Khinzemane Holy Tree which is believed to be planted by the 14th Dalai Lama.

· **Organized by–** It is organized by Zemithang community in collaboration with civil authorities and supported by local Indian Army Units.

The significance of this festival:

· It honours the shared Buddhist cultural heritage and celebrates the long-standing friendship between India and Bhutan.

· The festival featured various events, including cultural performances by

local troupes and Indian army bands, as well as martial performances like Mallakhamb and Zanjh Pathaka.

· Zemithang valley is also part of the Vibrant Village Programme. Under the Vibrant Village Programme, there will be enhancement of tourist infrastructure. This will transform Zemithang valley to a thriving tourist destination.

UPSC Prelims point: Gorsam Kora Festival

6. Kochrab Ashram

Context:

Prime Minister Narendra Modi inaugurated the redeveloped Kochrab Ashram in Ahmedabad, Gujarat to mark the 94th anniversary of the Dandi March.

About Kochrab Ashram

Source: The Print

About:

· Kochrab ashram is located in Kochrab village, Ahmedabad, Gujarat.

· It is the first ashram established by Mahatma Gandhi upon his return to India from South Africa in 1915.

· It is also called as Satyagraha Ashram based on his ideas of achieving India's independence from British rule through peaceful methods.

History:

Upon returning to India from South Africa, Mahatma Gandhi initiated his association with Ahmedabad.

· In 1915, he settled in Ahmedabad emphasizing that as a Gujarati, he could

best serve the country through the Gujarati language.

· On May 20, 1915, Gandhi took up residence in a bungalow located in Kochrab village later renamed it as Satyagraha Ashram.

· The bungalow was generously provided by Jeevanlal Desai who was a fellow lawyer and colleague of Gandhi.

· Mahatma Gandhi based himself here for about one-and-a-half years before moving to the new campus of Sabarmati Ashram.

Appearance

It is a colonial-style building with a white-washed façade.

Significance

The ashram holds a historical significance:

· The ashram also served as the starting point for Gandhi's advocacy of khadi, equality for the poor, Hindi as the national language, self-reliance, and independence.

· It also served as a communal living space promoting self-improvement and community service.

UPSC Prelims point: Kochrab ashram.

INDIAN POLITY, POLICY AND INTERNAL SECURITY

1. "E-evidence, new criminal law, its implementation.

Context:

The article discusses changes in India's criminal laws, focusing on new rules for electronic records and evidence. It explains the updated definitions, admissibility, and requirements for electronic evidence under the new laws, and mentions the challenges these changes pose for law enforcement and legal processes.

The new criminal laws in India:

. India is introducing three new criminal laws: the Bharatiya Nyay Sanhita (replacing the Indian Penal Code), the Bharatiya Nagarik Suraksha Sanhita (replacing the Code of Criminal Procedure), and the Bharatiya Sakshya Adhiniyam (replacing the Indian Evidence Act). These laws will be effective from July 1, 2024.

The changes have been made in electronic evidence rules:

. **Definition of Electronic Records:** Electronic records now include a wide range of digital data such as emails, server logs, documents on electronic devices, messages, websites, and digital voice mails.

. **Primary Evidence Rule:** All copies of a video recording stored and transmitted electronically are considered primary evidence. This helps in proving cyber-crimes even if the original record is destroyed.

. **Admissibility of Electronic Records:** Following the Supreme Court's guidelines, a special certificate is required for electronic records to be admitted in court (Under the Bharatiya Sakshya Adhiniyam,). This certificate must be signed by two individuals: the person managing the device and an expert.

The judicial views on electronic evidence rules:

. **Mandatory Certificate:** The Supreme Court judgment in Arjun Panditrao Khotkar vs Kailash Kushanrao Gorantyal & Ors. (2020) requires a certificate under **Section 65-B (4)** of the Indian Evidence Act **(now Section 63(4) in the Bharatiya Sakshya Adhiniyam) for the admissibility of electronic records.**

. **Curable Defect:** Non-submission of the certificate in time is considered a curable defect. Courts may allow its later submission without prejudicing the trial.

. **Impossibility Principle:** The Court's view that if it is impossible to produce the required certificate, the court may excuse this requirement, recognizing the practical difficulties in obtaining the certificate.

The challenges in enforcing electronic evidence rules:

. **Insufficient Manpower and Resources:** Many cyber labs may not have enough staff or are not notified under the IT Act to provide expert opinions on electronic records.

. **Complexity in Handling Vast Data:** With the ubiquity of smartphones in crimes, the volume of data needing certification is enormous, posing logistical challenges.

. **Timing of Expert Certification**: The article suggests that requiring expert certification for every case could be excessive, proposing its necessity only when the integrity of the electronic record is disputed.

Way forward:

. To effectively implement the new electronic evidence rules, a dual approach is needed: firstly, enhancing the capacity and resources of cyber laboratories, and secondly, initiating widespread training and awareness programs about encryption and electronic record handling, especially for private entities using electronic security systems. This will ensure smoother enforcement and compliance with the updated legal framework.

Mains point: The significance of the mandatory certificate requirement for electronic records admissibility under India's new criminal laws, considering judicial views and the challenges encountered in enforcing this rule.

2. Cross-voting in Rajya Sabha elections
Context:

The recent Rajya Sabha elections in Uttar Pradesh, Himachal Pradesh, and Karnataka saw MLAs from various parties engaging in cross-voting. This has sparked concerns regarding the integrity of the election process.

Rajya Sabha elections held:

Source- The Hindu

. **Constitutional Provision:** According to Article 80 of the Constitution, Rajya Sabha representatives from each State are indirectly elected by the elected members of their Legislative Assembly.

. **Historical background– Before 1998**, the outcome of Rajya Sabha elections were usually a foregone conclusion, as the candidates were nominated by various parties in accordance to their strength in the Assembly. Hence, they used to be elected unopposed. However, the June 1998 elections in Maharashtra saw cross-voting, breaking this tradition.

Legal provisions and precedent for curbing cross voting
Open Ballot system:

a. To prevent MLAs from cross-voting, an amendment to **Section 59 of Representation of the People Act, 1951 was made in 2003.** This amendment introduced open ballot voting in Rajya Sabha elections.

b. MLAs from political parties must display their ballot papers to their party's authorized agent. Failure to do so or showing it to anyone else will invalidate the vote. Independent MLAs cannot show their ballots to anyone.

Tenth Schedule:

a. It introduced in 1985.

b. This schedule states that if a member of a Parliament or State legislature

voluntarily leaves their political party or votes against their party's instructions, they can be disqualified from the House. However it does not apply to Rajya Sabha elections

SC Court Rulings:

a. The Supreme Court in **Kuldip Nayar versus Union of India (2006),** upheld the system of open ballot for Rajya Sabha elections.

b. In the same case, the court also decided that a political party's elected MLA would not be disqualified under the Tenth Schedule for voting against their party candidate. They might face disciplinary action from their party at most.

Prelims point:cross-voting.

3. India's burgeoning death penalty crisis.

Context:

This article discusses the increasing number of prisoners on death row in India and the high rate of their acquittal by the Supreme Court. It highlights the systemic issues in the criminal justice system and questions the effectiveness of the death penalty. Challenges of Processing Death Sentence in India

The current state of death row in India:

. India's death row population is at its highest since 2004, with 561 inmates by the end of 2023.

. The **Death Penalty India Report (2016**) found that only 4.9% of death sentences from 2000-15 were confirmed at the appellate level.

. Trial courts imposed 86.96% of death sentences without mandated information.

. Data from Project 39A's report revealing a 15% decrease in High Court case disposal rate.

The issues exist in the sentencing process:

. **Sentencing Issues:** Trial courts continue to impose death sentences without

required information about the accused, as mandated in a 2022 case.

. **High Acquittal Rate:** The Supreme Court acquitted about 55% of death row prisoners in 2023, indicating potential errors in lower court judgments.

. **Failed Reform Implementation:** Despite the Supreme Court's sentencing reform directions in **"Manoj vs The State Of Madhya Pradesh" (May 2022)**, these reforms have not been implemented by trial courts for two consecutive years.

. **Systemic Legal Failures:** Instances of fabricated evidence and questionable police procedures lead to wrongful convictions, emphasizing deep-rooted issues in the criminal justice system.

The conditions for death row prisoners:

. **Constant Distress:** Death row inmates live in fear of execution, causing ongoing psychological stress. This persists even after acquittal or commutation.

. **Violence and Humiliation**: Prisoners on death row often face violence and ridicule within the prison system.

. **Isolation from Activities:** They are segregated from work, education, and leisure activities, worsening their mental state.

. **Increase in Death Row Population:** Despite these conditions, the death row population continues to grow due to excessive sentencing by trial courts.

Way forward

. To address these issues, the Supreme Court needs to broaden its reform beyond sentencing, tackling systemic problems in the criminal justice process. This includes ensuring fair trials and addressing police and prosecutorial misconduct. Improving prison conditions for death row inmates is also crucial.

Mains point: The current state of death row in India and the systemic issues in the criminal justice system.

4. Supreme Court overturns its verdict on Stay Order.

Context:

The Supreme Court recently overturned its decision in the Asian Resurfacing case. The Court stated that a Supreme Court bench in 2018 did not have the authority to establish a six-month time limit for lifting stay orders.

The 2018 bench rule in the Asian Resurfacing case:

Source- Hindustan Times

Background:

. In 2018, a three-judge bench comprising Justices Adarsh Goel, Navin Sinha and Rohinton Nariman were deciding a batch of cases involving the Prevention of Corruption Act.

. These cases had one thing in common: the respective High Courts had granted a stay at some point during the trial.

. Stay orders are issued by courts to temporarily halt legal proceedings, protecting citizens' rights. A stay always postpones the trial, regardless of who benefits from it.

. **SC 2018 ruling in Asian Resurfacing case–** To tackle the significant issue of delays in criminal trials, the Supreme Court ruled that interim stay orders from High Courts and Civil Courts will only last for six months. At the conclusion of this duration, they will be automatically revoked or "lifted".

Impact of 2018 ruling

This decision raised several questions as follows:

. **Question 1–** Can the Supreme Court, under Article 142 of the Constitution (which empowers it to pass any order to ensure "complete justice"), order the automatic removal of all interim orders from High Courts that suspend proceedings of civil and criminal cases after a certain period has expired?

. **Question 2-** Can the Supreme Court, under Article 142 of the Constitution, instruct the High Courts to resolve pending cases where interim stay orders on proceedings have been issued, on a daily basis and within a set timeframe?

The 2018 ruling reversed:

. **Lacked authority to set a timeline–** The court ruled that the Asian Resurfacing bench lacked the authority to establish a six-month deadline for lifting stay orders.

. **Defeat justice–** The court stated that automatically lifting a stay order after six months would actually "defeat justice" by invalidating interim orders that had been legally issued without hearing the parties.

. **Only legislature have the power–** The court mentioned that the six-month limit would be like creating laws from the bench, which is not allowed. Only the legislature can determine if certain cases should be resolved within a set period.

Prelims point: The Asian Resurfacing case.

5. Pradhan Mantri Surya Ghar Muft Bijli Yojana- Key Challenges.

Context:

The Union cabinet recently approved the Pradhan Mantri Surya Ghar Muft Bijli Yojana with a budget of 75,021 crores. This scheme could transform electricity access and the country's

climate goals. This article explores the challenges that may affect its implementation. Pradhan Mantri Surya Ghar Muft Bijli Yojana.

Pradhan Mantri Surya Ghar Muft Bijli Yojana:

- **Objective:** To deliver 300 units of 'free electricity' monthly to 1 crore households via rooftop solar setups.
- **Department:** Ministry of New & Renewable Energy
- **Central subsidy:**
  a. 60% of installation costs for 2 kW systems
  b. 40% of costs for systems ranging from 2-3 kW capacity

  Note- Systems with higher wattage are ineligible.

  c. At present rates, there will be a subsidy of Rs 30,000 for 1 kW systems, Rs 60,000 for 2 kW systems, and Rs 78,000 for 3 kW systems or higher.
- **National Portal** – It will facilitate subsidy applications and assist in finding a suitable vendor for installing rooftop solar. Additionally, it will aid decision-making by providing relevant information as needed.

The Challenges in its implementation:

- **Free electricity issue–** The success of this program relies heavily on the adoption by people. However, the provision of free electricity by many states has deterred people from adopting rooftop solar systems.

Financial Constraints for DISCOMs:
  a. **In the Surya Ghar program,** free electricity is provided with the assumption that rooftop solar units will be connected to the grid. The grid will buy back excess power from households via the net metering system.
  b. Many discoms foresee losses from the net metering system as they already incur fixed costs and pay contracted charges to power generators under **long-term Power Purchase Agreements (PPAs).**
  c. Discoms fear that compensating consumers for absorbing power from their rooftop solar plants will increase their costs, especially since it needs to be absorbed during daylight hours when tariffs are typically higher.

- **Limited success of previous schemes–** Due to the above issues faced by discoms, the rooftop solar program, operating since December 2015, fell short of expectations. It achieved only 11.08 GW by December 2023, compared to the 40 GW target. Commercial and industrial consumers contributed about 80% of this capacity, while just over 600,000 households adopted rooftop solar.

- Therefore, if the government fails to tackle the structural issues of supply and pricing faced by discoms, achieving the target of 1 crore households may prove challenging.

Mains point: The Pradhan Mantri Surya Ghar Muft Bijli Yojana, its objective and central subsidy provisions. Also analyze the challenges in its implementation.

6.   No immunity for MPs, MLAs in bribery cases: SC

Context:

The Supreme Court recently ruled that parliamentary privilege or immunity

would not shield legislators who accept bribes to vote or speak in Parliament or State Legislative Assemblies from criminal prosecution. The Supreme Court overruled its judgment in the JMM bribery case of 1998.

. **Background–** In 1993, JMM leader Shibu Soren and some of his party MPs were accused of accepting bribes to vote against the no-confidence motion against the then P V Narasimha Rao government. In 1998, a five-judge Supreme Court bench, in its majority ruling, dismissed the case against the JMM MPs, citing immunity under Article 105(2).

The recent ruling by the Supreme Court:

Source- Hindustan Times

. The court stated that legislators' freedom of speech and expression, along with their voting rights in the House, do not protect them from giving or taking bribes. Similarly, the immunities provided under Article 105 and 194 also do not shield them in such cases.

. The act of bribery is considered complete when the legislator accepts the bribe. It doesn't matter if the legislator votes as agreed or doesn't vote at all.

. **Note–** The reference came in an appeal filed by JMM leader Sita Soren, who was accused of taking a bribe to vote for a particular candidate in the 2012 Rajya Sabha elections.

The constitutional immunities for state legislature and parliament members:

. **Article 194(2)** of the Constitution grants immunity to State Legislature members, while **Article 105(2)** provides the same protections to Parliament members.

. **Article 105 of t**he Constitution addresses the authority, privileges, and immunities of Parliament and its members.

. **Article 105(2)** states that no Member of Parliament can be held accountable in court for statements made or votes cast in Parliament or its committees.

Prelims point:he constitutional immunities for state legislature and parliament members.

7. **Abhishek Manu Singhvi writes: Why the legal architecture of defection must be reimagined.**

Context:

The article discusses the problems with India's 10th Schedule of the Constitution, highlighting how it fails to prevent political defections and manipulation. It suggests abolishing this Schedule and adopting simpler laws to address party-switching by politicians. How Anti-Defection Law is manipulated?.

The 10th schedule:

. The Tenth Schedule, added to the Indian Constitution in 1985, is an anti-defection law. It was introduced to address political instability caused by frequent defections of legislators during the 1960s and 70s.

The judiciary views on 10th schedule:

. **Manipur Judgment**: The Supreme Court set a three-month time limit for Speakers to decide disqualification petitions, emphasizing timely decisions.

. **Kihoto Hollohan Case:** Established that the 10th Schedule is not an unreasonable restriction on free speech and

that the Speaker's order is subject to judicial review.

. **Ravi Naik and Balasaheb Patil Cases**: Defined 'voluntary giving up of membership' broadly, not limited to resignation but inferred from various forms of conduct. These include remaining incommunicado, failing to attend party meetings, or engaging in activities against the party's interest.

. **Vishwanathan Case:** Ruled that an expelled member remains part of their old party unless joining a new one, avoiding immediate disqualification.

. **Shiv Sena Case:** Mandated that the Election Commission should use the organizational test to determine a party's real representation, not just legislative majority.

The Defections manipulated:

. **Pre-Defection Tactics:** Potential defectors often write a no-confidence letter against the Speaker before defecting. They often invoke a loosely drafted paragraph in Nabam Rebia case as justification.

. **Speaker's Bias**: The Speakers, typically from the ruling party, show bias. They delay or speed up disqualification decisions based on the defector's new affiliation, affecting opposition and ruling party defectors differently.

. **Election Commission and Party Symbols**: Defectors may file a claim with the Election Commission (EC) to be recognized as the real party, seeking the party symbol. The EC often uses a legislative majority test, which benefits defectors.

. **Fast-Tracked EC Hearings:** While the Speaker delays disqualification disputes, the EC hearings are fast-tracked under influence, further legitimizing defections.

. **Engineered Resignations:** Opposition parties sometimes engineer resignations in the ruling party, promising lucrative positions to defectors in a new government.

Way forward:

. **Abolish the 10th Schedule**: Replace it with a simpler law stating anyone changing party affiliation must resign and seek re-election.

. **Prohibit Minister ship Without Re-Election:** Restrict defectors from holding ministerial positions unless re-elected, to discourage opportunistic defections for personal gain.

. **Eliminate Need for Speaker's Adjudication:** Simplify the system to remove the Speaker's role in disqualification, addressing the issue of bias and partiality.

. **Select a Neutral Speaker:** If a speaker is still required, establish a convention where all political parties agree on a neutral Speaker before elections and do not contest in their constituency, ensuring impartiality and fairness.

Mains point:The tactics employed to manipulate political defections in India.

8. **Slow and unsteady: The legislature should complement the judiciary in fighting corruption.**

Context:

The Tirukkoyilur Assembly (Tamil Nadu) constituency was not declared vacant immediately after the conviction of former Higher Education Minister K. Ponmudy in a disproportionate assets case. Despite the conviction, there was a delay in declaring the seat vacant.

The delayed declaration of a vacant assembly seat in Tamil Nadu faced criticism:

. **Legal Mandate:** Despite the Madras High Court's conviction, the seat remained occupied for an unexplained duration, raising concerns about timely legislative response to lawmaker disqualification.

. **Contrast with Other Cases:** This delay contrasts with the prompt action taken

in other cases, such as the Vilavancode constituency, where a legislator promptly vacated the seat after changing party affiliation.

The legal aspects related to disqualification:

- **Section 8(1) Disqualification:** Section 8(1) of the Representation of the People Act, 1951 lists offenses under laws like the Narcotic Drugs and Psychotropic Substances Act and Prevention of Corruption Act.
- **Criteria for Disqualification:** Section 8(1) states that disqualification "shall be" immediate upon conviction, implying no delay in implementation.
- **For example:** Despite K. Ponmudy's conviction, there was a delay in declaring the Tirukkoyilur Assembly seat vacant, raising questions about adherence to the legal mandate.
- **Section 8(3) Disqualification:** Section 8(3) of the Representation of the People Act, 1951 mandates disqualification for certain offenses, including criminal defamation. It applies to specific offenses and mandates disqualification for a certain period after conviction. For example: Member of Parliament Rahul Gandhi was disqualified under Section 8(3) after his conviction and two-year sentence in a criminal defamation case.

The broader implications of such delays:

- It undermines public confidence in the legislative process.
- Unequal treatment in responding to lawmaker disqualification cases can erode trust in the fairness of the system.

Way forward:

- The legislature should take prompt action to declare vacant seats in cases of lawmaker disqualification, in line with legal mandates.
- There should be cooperation between the judiciary and legislature to ensure effective combat against corruption.

- All lawmakers should be treated equally in disqualification cases, without bias or delay.
- Upholding democratic principles involves respecting dissent while combating corruption and ensuring fair and timely responses to disqualification cases.

Mains point: The importance of promptly declaring vacant seats in cases of lawmaker disqualification, considering legal mandates and the implications of delays, with examples from cases like Tirukkoyilur and Vilavancode constituencies.

9. **A bold step towards a cervical cancer-free future.**

Context:

The article discusses India's new budget plan which includes funding for HPV vaccination to prevent cervical cancer in girls. It mentions global and local successes in HPV vaccination and how it can improve women's health and reduce cervical cancer.

The current status of cervical cancer in India:

- Cervical cancer is the second most common cancer in Indian women, with 1.27 lakh cases and 80,000 deaths annually. The main cause is the Human papillomavirus (HPV).
- India's 2024-25 interim budget includes funding for HPV vaccinating girls aged 9 to 14 against cervical cancer.

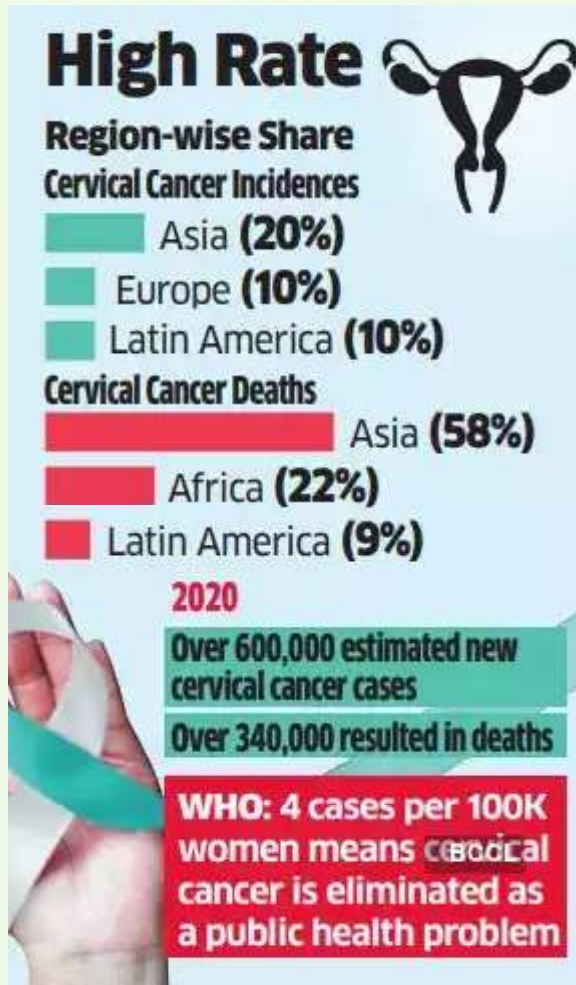**The initiatives have been taken to eliminate cervical cancer:**

Initiatives in India:

- **Development of Cervavac:** India developed its own HPV vaccine, Cervavac, making it more affordable and accessible.
- **Sikkim's Successful Model**: Sikkim achieved a 97% HPV vaccination rate through effective community education and outreach programs.
- **U-WIN Portal Rollout:** Similar to Co-WIN, this portal will track immu-

nizations across the country, including HPV vaccines.

High Rate

Region-wise Share
Cervical Cancer Incidences
- Asia **(20%)**
- Europe **(10%)**
- Latin America **(10%)**

Cervical Cancer Deaths
- Asia **(58%)**
- Africa **(22%)**
- Latin America **(9%)**

2020
Over 600,000 estimated new cervical cancer cases
Over 340,000 resulted in deaths

WHO: 4 cases per 100K women means cervical cancer is eliminated as a public health problem

Initiatives Worldwide:

- **WHO's '90-70-90' Targets:** Aims for 90% of girls to be vaccinated by age 15, 70% of women screened by ages 35 and 45, and 90% of cervical cancer cases treated by 2030.
- **Rwanda's Campaign:** Reduced HPV prevalence, especially in women who participated in the 2011 catch-up program.
- **Southeast Asia Region:** Bhutan, Indonesia, the Maldives, Myanmar, Sri Lanka, and Thailand introduced the HPV vaccine nationwide.
- **Bhutan's Leadership:** First low-middle income country (LMIC) to start a nationwide HPV vaccination program for girls in 2010 and for boys in 2021, achieving 95% coverage among targeted girls.

The challenges in eliminating cervical cancer:

- **Combatting Vaccine Hesitancy:** There's a significant challenge in addressing myths and misinformation surrounding the HPV vaccine.
- **Achieving Equitable Access:** A major hurdle is ensuring access to HPV vaccination for all, particularly in underserved areas.
- **Building Robust Infrastructure:** Developing sufficient healthcare infrastructure for widespread vaccination is a challenge.
- **Implementing Tracking Systems:** The need for efficient tracking systems like U-WIN presents a logistical challenge.
- **Raising Awareness and Education**: Increasing awareness and understanding of HPV and cervical cancer in diverse cultural contexts is difficult.
- **Ensuring Vaccine Affordability:** Making vaccines like Cervavac affordable and accessible remains a key challenge.

The overall impact of HPV vaccination:

- R**eduction in Cervical Cancer Cases:** HPV vaccination has led to a notable decrease in cervical cancer, especially in countries with comprehensive vaccination programs.
- **Cost-Effective Healthcare:** India's development of the affordable Cervavac vaccine increases accessibility and affordability.
- **Improved Women's Health and Productivity:** By reducing the incidence of cervical cancer, HPV vaccination contributes to the better overall health and economic productivity of women.

Mains point: The current status of cervical cancer in India and the initiatives taken both locally and globally to eliminate it.

10. Critique Isn't Crime: Cops get another lesson on basics of democracy from SC.

Context:

The article discusses how the Indian Supreme Court overturned a case where someone was charged for expressing dissenting views on WhatsApp.

Background

. In Maharashtra, a person faced legal charges for calling the **removal of Article 370 a "black da**y**"** in a WhatsApp group. They also wished Pakistan on its Independence Day. It led to an FIR and Bombay HC dismissed a writ petition filed by the accused.

The Supreme Court say:

. The Supreme Court of India quashed an FIR against a person for expressing dissenting views on WhatsApp.

. It stated that criticizing government policies, like the abrogation of Article 370, is part of democratic dissent.

. The Court emphasized that such **dissent is not grounds** for accusations of creating enmity or disharmony.

. It highlighted the constitutional guarantee of freedom of speech, pointing out the problem with unreasonable restrictions and arbitrary arrests in India.

. **The Court criticized the police,** suggesting they need education on free speech rights, and that judgment standards should be based on reasonable minds, not those easily offended.

Mains point: The rationale behind the Indian Supreme Court's decision to quash the FIR against the individual for expressing dissenting views on WhatsApp, particularly in relation to the criticism of government policies.

11. Missing Voters': Forgotten, Not Gone

Context:

This article discusses how many voters, mainly young, single male migrants in cities, don't vote because their addresses don't match their current homes. The Election Commission's plan to use remote voting machines could help them vote, impacting future politics and party strategies.

The "missing voters":

. The **"missing voters"** are primarily young, single male migrants in urban areas, who are unable to vote because their addresses on electoral rolls don't match their current living places. Often residing in slums and constantly moving for work, these voters, typically aged between 16 and 30, slip through the voting net. For example, in cities like Delhi and Bengaluru, a significant number of these migrants are unmarried men who have moved for employment opportunities.

The impact could their voting have:

. **Increased Voter Turnout:** Allowing these 'missing voters' to participate could raise the voter turnout significantly, potentially up to 30% more, broadening democratic participation.

. **Shift in Political Focus**: Their unique concerns and backgrounds would force political parties to recalibrate their manifestos, focusing on different issues like urban employment and migration-related challenges.

. **Influence on Long-term Strategies:** The sudden inclusion of young, urban, mostly single, and male voters would lead parties to adapt their long-term election strategies to appeal to these new demographics.

. **Demand for Specific Policies:** These voters would likely push for policies that address job security and skill development, reflecting their needs as transient workers.

The changes might political parties make:

.   **Focus on Job Security and Skills:** Political parties may prioritize policies for job security and skill enhancement, addressing the needs of the transient workforce.

.   **Address Urban Worker Issues:** With the inclusion of migrant workers as voters, parties might focus more on urban employment challenges.

.   **Consider Rural Demands:** As men leave villages for city jobs, women's rising role in agriculture might lead parties to address rural needs and women farmers' concerns.

.   **Support for Small-scale Enterprise:** Parties might focus on small-scale enterprises, as women are increasingly active in this sector and their political interests grow.

Way forward

.   To address the issue of '**missing voters'**, the Election Commission's plan to use remote electronic machines is crucial. This will enable migrant workers to vote, thereby ensuring a more inclusive and representative democratic process.

Mains point: The implementation of remote electronic voting machines by the Election Commission could address the issue of 'missing voters'.

12. Dubious response: The SBI's reasons to delay publication of details of electoral bonds defy belief"

Context:

The article describes how India's Supreme Court ruled the Electoral Bond scheme illegal due to its allowance of secret political donations. The State Bank of India is struggling to provide the required data on these bonds as demanded by the court.

The Supreme Court's instructions for the SBI in the electoral bond scheme judgment:

.   **Stop Issuing Bonds:** The Supreme Court directed the State Bank of India to immediately stop issuing electoral bonds.

.   **Reveal Details:** The bank must provide details of the political parties that received funds through these bonds, along with the date of purchase and the denomination of each bond.

.   **Deadline for Disclosure:** The information was to be furnished by March 6.

The State Bank of India's role in the electoral bond scheme:

.   **Exclusive Issuer:** The State Bank of India was the sole authorized bank to issue electoral bonds.

.   **Handling Donations:** It facilitated anonymous political donations through these bonds.

.   **Data Storage:** The bank stored data about donors, including purchase dates, and issued unique alphanumeric codes for each bond.

The SBI action on the SC's Instructions:

.   **Seeking Time Extension:** The State Bank of India requested time until the end of June 2024 to provide the required data, which is past the expected date of the next general election.

.   **Challenges in Data Reconciliation:** The bank mentioned the difficulty of reconciling two sets of information: one related to bond purchases and the other to the parties receiving the bonds.

.   **Digital Storage Limitations:** SBI indicated that it digitally stored only the number of bonds issued, not the Know Your Customer (KYC) details of purchasers.

Way forward

.   The Supreme Court should ensure the State Bank of India adheres to the deadline for revealing bond details before the election. This is crucial for transparency in political funding, especially given the significant donations received by parties like the Bharatiya Janata Party and Congress.

13. Idea of speech & expression needs to be less intellectualised in India.

Context:

The Supreme Court has recently quashed charges which were levelled against a college professor from Maharashtra. The court held that Indians have a right to criticize the government, and to wish Pakistan on its Independence Day. Idea of speech & expression needs to be less intellectualized in India

There a need to de-intellectualise ideas of speech and expression:

.   **Esoteric nature-**The idea of speech and expression are understood only by a few or those who have specialized knowledge of it. This is due to the domination of powerful people who want these ideas to remain complex.

.   **Wrong Notions-**Contrary to popular belief, freedom of speech & Expression did not come entirely from the Constitution. It rather comes from chaos, ambiguity and vast rustic informality of Indians. For ex- India's free speech came from the same place from where Indians still derive their right to drive on the wrong side of the road.

.   **Indian example– In** India, freedom of expression was never practised as an esoteric ideal or a highly intellectual concept. It simply relied on basic human needs to say stuff.

The way forward:

.   **Role of civil societies**– There is a need for robust civil society and human rights activists who can raise voice for voice-less and fight for the rights of the lowest rung.

.   **Role of opposition parties and artists–** Opposition parties can take a low-risk-high-return gamble by saying uncomfortable truths that no one can say anymore. Comedians and other kinds of entertainers can also take a shot at the repressive tendencies of government. This will remove the fear of oppression by the government from common people.

14. How AYUSH and modern medicine can work together.

Context:

The article discusses the challenges and possibilities of integrating modern and traditional medicine (AYUSH) systems. Integrating modern and AYUSH System of Medicine

The models for integrating modern and traditional medicine (AYUSH) systems:

.   **Competitive Model:** Features rivalry between modern and AYUSH medicine, with each pointing out the other's weaknesses and competing for patients. This model involves conflicts at the level of professional associations and possible litigation.

.   **Coexistence Model:** Recognizes both systems' legitimacy, allowing them to operate separately without interference. In this model, modern medicine practitioners may permit patients to opt for AYUSH treatments. Conversely, AYUSH practitioners typically request patients to discontinue their modern medications if they wish to start AYUSH therapies.

.   **Cooperation Model: Ide**al integration where both systems acknowledge each other's strengths and work together for patient care. This could improve modern medicine's focus on prevention. For example, yoga is increasingly accepted by modern practitioners due to evidence of its effectiveness.

The challenges in integrating modern and traditional medicine (AYUSH) systems:

.   **Trust Deficit:** There's skepticism between practitioners of modern and AYUSH systems due to varying outcomes when patients switch treatments, often based on anecdotal evidence.

.   **Technical Differences:** AYUSH is diverse, with each discipline requiring unique integration strategies. For example, yoga's effectiveness is recognized, but integrating ayurvedic or homeopathic medicines remains contentious.

.   **Operational Challenges:** Effective teamwork requires understanding each other's strengths and limitations. However, there is a lack of knowledge about AYUSH among modern medicine practitioners and vice versa.

.   **Regulatory Issues:** The regulation of integrated practices is evident, as modern practitioners sometimes use ayurvedic pills without full understanding. Similarly, AYUSH practitioners may practice modern medicine without proper authorization.

Way forward:

.   **Build Evidence for AYUSH:** Enhance trust by developing evidence-based AYUSH treatments, filtering out ineffective ones.

.   **Create Composite Guidelines:** If evidence supports, develop combined standard treatment guidelines integrating the best of both systems.

.   **Implement Strong Regulation:** Establish clear rules for collaboration, with accountability defined for both AYUSH and modern medicine practitioners.

.   **Educational Integration:** Consider teaching basic AYUSH concepts in modern medical courses, but without overburdening the curriculum.

.   **Health Technology Framework:** Utilize existing frameworks in India for assessing and regulating integrated practices, focusing on safety, quality, and efficacy.

Mains point: The strategies and challenges involved in integrating modern and traditional medicine (AYUSH) systems.
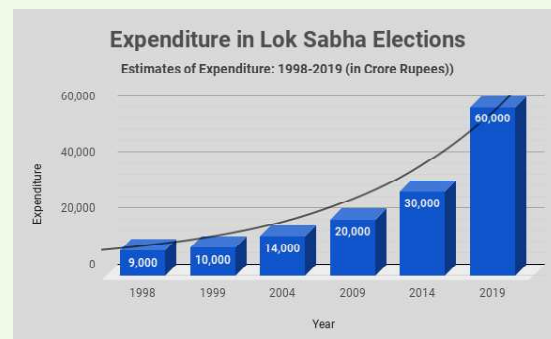
15.   **Concerns with election expenditure in India – We need limits on election campaign spending.**

Context:

The article discusses the high cost of elections in India. It talks about the government and political parties spending a lot on advertising and other campaign activities, which can be unfair. The article suggests reforms to make elections more equal and transparent.

The current status of election expenditure in India:

.   **Government Ad Spending:** The central government spent Rs. 3,020 crore on advertisements from 2018-19 to 2022-23, with a spike in election years, like Rs. 1,179 crore in 2018-19.

.   **Candidate Expenditure Limits:** Rs. 95 lakh per Lok Sabha constituency in larger states, Rs. 75 lakh in smaller states. However, these limits are often exceeded.

.   **Party Spending:** No limit for political parties. In the 2019 elections, BJP spent Rs. 1,264 crore, Congress Rs. 820 crore. Estimated total spending by parties was around Rs. 50,000 crore.

Expenditure in Lok Sabha Elections
Estimates of Expenditure: 1998-2019 (in Crore Rupees))

The concerns with election expenditure in India:

. **Lack of Spending Caps for Parties:** While candidates have specific spending limits, there are no caps for political parties. This leads to excessive spending, as seen in the 2019 elections where political parties reportedly spent around Rs. 50,000 crore.

. **Influence of Money on Fairness:** The large amount of money spent, particularly by major parties like BJP and Congress, raises concerns about the fairness of elections.

. **Illegal Practices and Opacity:** Apart from legal expenditures, the distribution of cash to voters and opaque funding sources contribute to corrupt electoral practices, undermining the democratic process.

Way forward:

. According to the **"Proposed Electoral Reforms"** submitted by the Election Commission of India in 2016, the key suggestions included:

. **Ban Pre-Election Government Ads:** Introduce a ban on government advertisements six months before elections to prevent misuse of public funds for political gains.

. **Equalize Party and Candidate Spending Limits**: Amend laws to include a spending cap for political parties, similar to the limits for individual candidates (Rs. 95 lakh in larger states, Rs. 75 lakh in smaller states).

. **Transparent Party Financing:** Implement measures for greater transparency in party financing to reduce the influence of undisclosed donations and corporate funding.

. **Swift Legal Action on Violations:** Appoint additional judges in High Courts for quick resolution of election-related cases, creating a deterrent against overspending and other violations.

. **Explore State Funding of Elections:** Consider state funding of elections, as suggested by the Indrajit Gupta Committee (1998) and the Law Commission report (1999), to reduce dependence on private donations.

Mains point:The key concerns surrounding election expenditure in India and the proposed reforms suggested to address these issues.

16. **Defence Ministry denotifies civil areas of 10 cantonments.**

Context:

The central government has decided to denotify civil areas of 10 cantonments (out of 58) in the country.

About Cantonment:

. **About:** Cantonments are areas which comprise of both military and civil population.

. Cantonments are different from the Military Stations. Military Stations are purely meant for the use and accommodation of the armed forces, and these are established under an executive order.

. **History:** a) They originated during the colonial era as military stations to maintain control and safeguard their territorial interests.

. These towns were reserved exclusively for military personnel and were administered separately from civilian areas.

. **Types of cantonments:** It is categorized into four categories based on the size of the population residing inside a Cantonment:

i) Category I: Having a population of more than 50,000.

ii) Category II: Having a population of 10,000 to 50,000.

iii) Category III: Having a population of less than 10,000.

iv) Category IV: Industrial or training Cantonments, irrespective of their population size.

. **Administration:** Entry 3 of the Union List (Schedule VII) of the Constitution of India states that urban self-governance in cantonments and housing accommodations within them falls under the jurisdiction of the Union of India.

a) Directorate General Defence Estate is an Inter Services Organisation of the Ministry of Defence which directly controls the Cantonment Administration.

b) There are more than 60 Cantonments in the country which have been notified under the Cantonments Act, 1924 (succeeded by the Cantonments Act, 2006).

Cantonment Boards:

i) It was established under the provisions of the Cantonments Act of 2006. Cantonment Boards consists of eight members.

ii) The services provided by these boards include sanitation, primary education, street lighting, water supply, and maintenance of roads, bridges, and public hospitals.

Prelims point: About Cantonment.

17. Former Election Commmissioner Ashok Lavasa writes: With vacancies, Election Commission's moment of reckoning.

Context:

The article discusses the changes made to the Indian Election Commission's selection process and conditions of service through a bill in Parliament. It focuses on the amendments related to the Chief Election Commissioner (CEC) and Election Commissioners (ECs), including their removal process, status equivalence, and the composition of the selection committee.

. In March 2023, the Supreme Court (Anoop Baranwal v. Union of India Case) ordered the creation of a selection committee for the ECI with the Chief Justice of India (CJI) as a member. However, later, Parliament passed a law excluding the CJI from this committee.

The changes in the Election Commission of India's selection process:

. **Introduction of a Selection Committee:** A committee was formed for selecting Election Commission of India (ECI) members, initially including the Chief Justice of India (CJI).

. **Exclusion of the CJI:** Later, a law was passed that removed the CJI from this committee, raising concerns about potential bias in the selection process.

. **Restoration of Equivalence with Supreme Court Judges**: In the final amendments, the equivalence of the CEC and ECs with Supreme Court judges was restored, reversing an earlier proposal to equate them with the Cabinet Secretary.

. **Disparity in Removal Process Unchanged:** The government did not establish parity in the removal process between the CEC and ECs. The CEC continues to have a removal process like a Supreme Court Judge, while ECs can still be removed by the President upon the CEC's recommendation.

. **Change in Search Committee Leadership:** The role of the chair of the Search Committee was shifted from the Cabinet Secretary to the Law Minister. Additionally, the requirement for committee members to have election-related experience was dropped.

The concerns about these changes:

· Exclusion of the Chief Justice of India (CJI) from the selection committee for the Election Commission of India (ECI) raises concerns about potential bias in the selection process.

. The equivalence of Chief Election Commissioner (CEC) and Election Commissioners (ECs) with Supreme Court judges was restored, but the disparity in their removal process remains, leading to confusion.

. The replacement of the Cabinet Secretary by the Law Minister as chair of the Search Committee, and changes in committee member criteria, raises questions about the expertise and independence of the selection process for the ECI.

Mains point: The recent changes to the Election Commission of India's selection process, and what concerns do they raise.

18. **Central Transfers-Issue of shares of some States.**

Context:

Sixteenth Finance Commission will have to deal with Southern States' complaints which claim they have been facing a decline in their share of the resources transferred from the Centre to the States.

Indian States have been gaining and which are losing their share over time:

Share of States/groups of States in tax devolution

Table 1: Share of States (%) in Commission-wise tax devolution for groups and selected States

Region	Overall				Overall	Distance criterion
	FC12	FC13	FC14	FC15 (final)	FC15 (final) minus FC12	
Northern of which:	32.666	33.031	30.285	30.897	-1.769	4.907
Bihar	11.028	10.917	9.665	10.058	-0.970	0.862
Uttar Pradesh	19.264	19.677	17.959	17.939	-1.325	2.509
Central	12.726	12.392	13.767	14.564	1.838	1.298
West of which:	14.434	14.359	14.478	16.207	1.773	2.822
Maharashtra	5.082	5.284	5.649	6.317	1.235	1.758
Gujarat	3.625	3.101	3.156	3.478	-0.147	-0.089
Southern of which:	19.785	18.575	17.978	15.800	-3.985	-8.055
Tamil Nadu	5.305	4.969	4.023	4.079	-1.226	-1.736
Eastern	15.453	15.671	15.277	15.179	-0.274	-0.192
Hilly	3.639	4.421	6.361	7.353	3.714	-0.020

Source (basic data): Reports of Finance Commissions (Twelfth to Fifteenth) and writers' estimates Notes: (1) The Fifteenth Finance Commission had submitted two reports. Here, the reference is to the final report. | (2) Shares are not strictly comparable across Commissions because of change in the status of Jammu and Kashmir for FC15.

. In the case of the southern States, there has been a steady fall in their share, from 19.785% to 15.800%.

In a comparison of these two Commissions, the northern and eastern States have also lost. The 'gainer States' were the hilly, central, and western States including Maharashtra.

The reason behind this uneven gain and loss:

. **Income distance Criterion–** The main reason for the loss of the southern States is the income distance criterion (Table 1). It means that the farther a State is from the highest income State, the higher its share.

Table 2: Relative weights for different tax devolution criteria: FC12 to FC15 (2)

#	Criteria	FC12	FC13	FC14	FC15 (final)
1	Population	25	25	17.5	15.0
2	Demographic change	-	-	10	12.5
3	Income/ fiscal capacity distance	50	47.5	50	45.0
4	Area	10	10	15	15.0
5	Forest cover	-	-	7.5	10.0
6	Tax effort	7.5	-	-	2.5
7	Fiscal discipline	7.5	17.5	-	-

Source (basic data): Reports of Finance Commissions (Twelfth to Fifteenth)

Table 3: Share of Centre and States in combined revenue (%)

FC period	Pre-transfer		Post-transfer	
	Centre	States	Centre	States
12th FC	64.3	35.7	38.7	61.3
13th FC	61.8	38.2	36.1	63.9
14th FC	62.3	37.7	31.9	68.1
15th FC (first 3 years)	62.6	37.4	31.3	68.7
2020-21	62.3	37.7	29.3	70.7
2021-22	64.1	35.9	32.3	67.7
2022-23	61.5	38.5	32.5	67.5

Source (basic data): PFS, Union Budget documents, RBI Notes: (1) Transfers include tax devolution and Finance Commission as well as other grants. (2) Grants from the Centre to States after 2015-16 are taken from the Union Budget. It includes grants-in-aid to the Union Territories.

Forest cover

The main reason for the gain of the hilly States is area/forest criterion.

. **Population–** For the Fifteenth Finance Commission, data for the population in 2011 was used (Before that population data of 1971 was used). The demogra-

phic change criterion was introduced so that states that showed better performance in reducing fertility rates are not unduly penalized.

The impact of these changes on Indian states:

. The joint impact of these two changes, that is income distance criterion and population, has been marginal for all groups of States. For Tamil Nadu, the joint impact was **marginally positive.**

The way forward:

. I**ncome distance criterion–** The Sixteen Finance Commission can reduce the weight of this criterion by 5% to 10% points and increase weightage of another criterion.

. **Cess and surcharge–** The Centre has increased the cesses and surcharges, thereby reducing the size of the divisible pool. This is not desirable. There is a need to limit the share of cesses and surcharges to 10% of the Centre's gross tax revenues.

Mains point: Highlight the concern raised by Southern Indian states so far as distribution of revenue is concerned.

INTERNATIONAL RELATIONS

1. Common challenges in the Ukraine and Middle East conflicts- There's a lesson for India in the wars going on overseas.

Context:

The article discusses how Europe struggles to respond to Russia's aggression against Ukraine and the ongoing conflict in the Middle East. It highlights the challenges and the lack of clear strategy in both conflicts. Ukraine and Middle East Conflict.

The Western countries' response to the Russia-Ukrainian war:

. Russia's gains in the war increase pressure on the West to support Ukraine.

. Western countries, including the US, UK, and Germany, are against sending troops to Ukraine. They prefer providing military aid, such as weapons and ammunition, to support Ukrainian forces.

. Germany and other European countries are also not in favor of sending troops to Ukraine.

. Internal disagreements in the West, like Hungary blocking a support statement, show a lack of consensus.

The war unfolding in the Middle East:

. Nature of the conflict and military actions: The conflict began with Israel's military action in Gaza after Hamas's attacks, killing about 1,200 in southern Israel. This led to major destruction and a humanitarian crisis. Israel's efforts have not significantly weakened Hamas. Moreover, Israel is currently under pressure to not attack Rafah, a key Hamas area (1.5 million Palestinians taking shelter).

. **Political and international pressure:** Amidst the ongoing conflict, there is a notable absence of a coherent Israeli strategy for the governance and reconstruction of Gaza. This situation is further complicated by the multiple threats Israel faces, including those from Hezbollah and Iranian proxies in the region. Adding to the complexity, the Biden administration in the United States is exerting political pressure on Israel, urging restraint in its military actions to avoid further escalation of the conflict and the humanitarian crisis.

The common challenges in the Ukraine and Middle East conflicts:

. **Dependence on External Support**: Both Ukraine and Israel heavily rely on external aid. Ukraine receives military aid from the West, while Israel's strategy also depends on support from allies.

. **Strategic Alignment Difficulties:** Aligning military goals with available resources and strategies is a challenge. For instance, the US and Europe struggle to form a consensus on aiding Ukraine, and Israel lacks a clear plan for Gaza's future.

. **Information as a War Tool:** In both conflicts, information is crucial for influencing public opinion and political decisions.

. **Aversion to Casualties in the West:** Western societies' reluctance to endure

casualties affects their support and strategies in these conflicts. This is evident in the reluctance of Western countries to send troops to Ukraine.

. **Pressure for Sustainable Outcomes:** Both Ukraine and Israel face challenges in achieving long-term, stable political and military outcomes. This includes the internal and external pressures to resolve conflicts while minimizing further escalation and harm.

Way forward:

. The way forward involves building a coherent strategy for conflict resolution. This includes the West forming a unified stance on supporting Ukraine and Israel devising a clear plan for Gaza. Additionally, leveraging diplomatic channels to de-escalate tensions and promote sustainable peace solutions is crucial.

Mains point: The common challenges faced by Western countries in responding to the conflicts in Ukraine and the Middle East.

2. Change and continuity in India's Palestine policy"

Context:

The article discusses how India's policy towards Palestine has evolved. Initially opposing Israel's creation, India now balances supporting Palestine with strong ties to Israel. Despite recent events like the October 7 Hamas attack and voting patterns at the UN, India still advocates for a two-state solution and condemns violence. This shows a continued commitment to Palestine while maintaining its relationship with Israel.

Israel's boundaries today

India's Palestine policy evolved over the years:

From 1947 to 1992:

. India opposed the 1947 UN partition plan of Palestine and voted against creating Israel.

. Prime Minister Nehru compared Zionist settlers to the Muslim League in undivided India.

. In 1950, India recognized Israel but didn't establish full diplomatic relations.

. Throughout the Cold War, India was a strong advocate for Palestine, supporting a Palestinian state with East Jerusalem as its capital.

From 1992 to October 7, 2023:

. India established full diplomatic relations with Israel in 1992.

. Despite growing ties with Israel, India continued supporting a two-state solution and a sovereign Palestinian state with East Jerusalem as its capital.

. India's policy included backing international initiatives like the Arab Peace Initiative and the Quartet Road map.

Post October 7, 2023:

. After the October 7 Hamas attack, India's stance appeared to shift, showing solidarity with Israel.

. However, India's voting at the UN still supported Palestinian rights and opposed Israeli settlements.

. India balanced its historical support for Palestine with its strategic partnership with Israel.

The supporting Palestine important for India:

. **Moral and Historical Commitment:** India's historical stance against the partition of Palestine and support for a Palestinian state reflects its commitment to anti-colonial and anti-imperial principles.

. **Humanitarian Concerns:** The conflict in Gaza, resulting in over 30,000 deaths and displacing nearly 90% of Gaza's population, represents a major humanitarian crisis. India's support for Palestine reflects its concern for human rights and civilian lives.

. **Alignment with Global South:** India aims to be a leader in the Global South, where there is strong opposition to Israel's actions. Countries like South Africa and Brazil have taken significant stances against Israel, which India, aspiring for similar leadership, cannot ignore.

. **Balancing International Diplomacy:** India's criticism of Israel, as voiced by External Affairs Minister S. Jaishankar, shows its effort to balance diplomatic relations, maintaining a principled stance while engaging with various global players.

. **Strategic Interests:** The conflict impacts India's strategic interests in the region, especially concerning the India-Middle East-Europe Economic Corridor (IMEC) and broader stability in West Asia.

. **Preventing Regional Escalation**: The ongoing conflict poses a risk of broader regional instability involving Iran, Israel, and America, all key partners for India. Supporting a peaceful resolution to the Palestine issue aligns with India's interest in maintaining regional stability.

. **Act West Policy:** An immediate end to the war and a permanent resolution to the Palestine question are integral to India's Act West policy, highlighting its commitment to peace and stability in West Asia.

Way forward

. India should continue supporting the two-state solution, as it aligns with national interests and global sentiments. India's recent UN votes against Israeli settlements and for Palestinian rights, coupled with calls for an immediate ceasefire, reflect this stance. Balancing ties with Israel while advocating for Palestinian self-determination and condemning violence is crucial. This approach is consistent with India's aspiration to lead the Global South and address humanitarian concerns in Gaza.

Mains point: India's evolving stance on the Israel-Palestine conflict and its significance in regional diplomacy and strategic interests.

3. **Development of Agaléga:-India's rising power in the Indian Ocean .**

Context:

Prime Ministers of India and Mauritius have jointly inaugurated an airstrip and the St James Jetty on North Agaléga Island in the Indian Ocean.

The Agalega island situated:

. Agaléga are two outer islands of Mauritius located in the Indian Ocean, about 1,000 kilometers (about 621.37 mi) north of Mauritius island.

. Surrounded by the Seychelles to the north, the Maldives, the US base Diego Garcia and Chagos Island to the east, and Madagascar, the Mozambique Channel, and the entire eastern coast of Africa to the west, its strategic location makes it vulnerable to terrorism, piracy and the illegal narcotics trade.

Source-Lowy institute

The significance of creating basic infrastructure in Agalega island for Mauritius:

- **Economic Significance: –**
  A) It will reduce two-day journey time from agalega island to Mauritius to less than an hour's flight.
  B) It will create employment for the local population and improve their overall well-being.
  C) It would help in tapping the tourism potential of the islands.

- **Strategic significance-**
  The new jetty and airstrip will allow the stationing or forward deployment of ships of the Mauritius Coast Guard. This will significantly enhance the capabilities and capacities in marine surveillance and security.

The significance of development of Agalega island for India:

- **Deepening of India-Mauritius relations: –**

- **Enhanced goodwill–** It will enhance the goodwill and trust between the two countries. This would help India to project itself to other maritime neighbours a benign and friendly country that respects the sovereignty of independent nations.

- **Multi-dimensional cooperation–** India and Mauritius are cooperating in all areas like monitoring of Exclusive Economic Zone, joint patrolling, hydrography, and Humanitarian Assistance and Disaster Relief. This will help India to sustainably use its exclusive economic zone in Indian Ocean region.

Geostrategic significance:

- **Strengthen SAGAR initiative-**The joint development of Agaléga highlights India's commitment to the vision of **Security and Growth for All in the Region (SAGAR)** by assisting smaller maritime nations in building capacity and developing capability.

- **Counter String of pearls–** China has built many assets in the Western Indian Ocean, such as the bases in Djibouti and Gwadar.The development of ports in Agalega will provide strategic access to India dubbed by some analysts as the **"necklace of diamonds"** as against the **"string of pearls"** ports that provide access to the Chinese.

- **The importance of building infrastructure in Agalega island** becomes even more marked in light of the Maldives anti-India posturing, which is highlighted by the signing of an agreement with Beijing "**on China's provision of military assistance"** and Indian military forces being asked to vacate the island nation.

- **Enhanced surveillance of Indian Ocean-**With the maritime empowerment of Mauritius through the Agalega project, India can also monitor important ocean lines in the Western Indian Ocean.

- **Reinforce India's role as net peace provider in the Indian Ocean Region**-It will help India to transform into influential blue-water power and become the voice of the Global South.

- It will also highlight India's critical role as a net peace provider in the Indian Ocean region and maintaining overall

peace, stability and security in the region.

Mains point: The infrastructural projects in Agalega island help India to achieve its geostrategic objective.

4. WTO 13th Ministerial Conference (MC13): Key Outcomes, Challenges

Context:

The World Trade Organization's 13th Ministerial Conference (MC13) recently concluded in Abu Dhabi. This article discusses the various outcomes of the conference and the challenges that remain unanswered. 13th WTO Ministerial Conference

Some of the positive outcomes of the conference:

- **E-commerce tariff moratorium extended–** WTO members agreed to extend the moratorium on e-commerce tariffs for two more years. India, Indonesia and South Africa had signaled their opposition to renewing the e-commerce moratorium, but supported it in the end. They are among countries worried about losing control of data flows.

- **Strengthen Multilateral Trading System–** Members pledged to uphold and enhance the capacity of the multilateral trading system, with the WTO as its foundation, to address present trade challenges.

Challenges remain unanswered

- **US Obstructionism in WTO–** The appointment of new members to the Appellate Body (AB) has been unilaterally blocked by the US. The body was supposed to be reformed by 2024, but that deadline has been missed.

- **Fisheries subsidies–** Developing countries like Brazil emphasized their commitment to discussions on fisheries subsidies, as the West attempted to ban such subsidies. They highlighted the importance of resolving the issue to advance sustainable fishing practices globally.

- **India's Food security Challenge–** India urged for a permanent solution to the public stockholding (PSH) issue for food security at the ministerial meeting. India stated that resolving the pending issue of PSH is crucial for achieving food security and improving the livelihoods of millions.

Way forward

- India, as a leader of the Global South, should form alliances with like-minded nations such as South Africa and small island states. Through this approach, India can offer alternative viewpoints and initiatives that better reflect the concerns and objectives of developing countries.

Mains point: The outcomes and challenges arising from the World Trade Organization's 13th Ministerial Conference (MC13) held in Abu Dhabi.

5. Railways holds the key to regional growth.

Context:

The article discusses the development of railway connections among Bangladesh, Bhutan, India, and Nepal (BBIN). This network aims to reduce transportation costs and time, improve trade, and support economic growth in these countries. BBIN railway connection

The BBIN initiative:

- **Regional Collaboration: T**he BBIN Initiative involves Bangladesh, Bhutan, India, and Nepal working together to enhance regional connectivity.
- **Focus on Railway Development:** The initiative prioritizes developing rail networks to improve economic ties and transportation efficiency.
- **Economic Growth and Development**: By connecting these countries more effectively, the initiative aims to boost economic growth and reduce transportation costs.

The railways helpful in the regional growth of these countries:

- **Cost and Time Efficiency:** Railways reduce transportation costs and times significantly. For instance, rerouting a freight train from Kolkata to Agartala through Bangladesh cuts transit time and costs by two-thirds.
- **Access to Ports:** Landlocked Nepal and Bhutan gain access to major ports like Chattogram and Mongla, enhancing their trade capabilities.
- **Economic Integration:** Improved rail connectivity fosters economic interdependence and growth among BBIN countries.
- **Revenue Generation:** Enhanced railway links can increase revenue for countries like Bangladesh through transit fees and other charges.
- **Environmental Benefits:** Railways offer a greener mode of transport, reducing greenhouse gas emissions compared to road transport.

The key projects in the BBIN initiative:

- **Agartala-Akhaura Rail Link:** This crucial link connects Northeastern India with Bangladesh, reducing the Kolkata to Agartala route from 1,600 km to just 500 km.
- **Khulna to Mongla Port Railway:** This line in Bangladesh enhances connectivity between western, northern Bangladesh, India, and Bhutan.
- **Tongi-Akhaura Line Dual Gauging:** Upgrading this line is part of the India-Bangladesh joint initiatives, improving connectivity and efficiency.
- **Hilli-Birampur Connection:** This new link is aimed at enhancing cross-border rail connections between India and Bangladesh.
- **Jayanagar-Bijalpura-Bardibas Line in Nepal**: The only cross-border rail link between India and Nepal, with plans to extend it further.
- **Gelephu-Kokrajhar Link Between Bhutan and India:** A proposed rail line connecting Bhutan directly to the Indian railway network, facilitating easier access to Bangladesh through the Haldibari-Chilahati interchange.

The regional rail connectivity projects being funded and executed:

- **Joint Funding and Execution:** Unlike traditional individual country financing, these rail projects are being funded and executed through collaboration among the BBIN countries (Bangladesh, Bhutan, India, Nepal).
- **Support from the Indian Government:** India is playing a significant role by extending lines of credit, offering assistance from the MDoNER (Ministry of Development of North Eastern Region) budget, and supplying rolling stock.
- **Involvement of International Organizations:** The World Bank and the Asian Development Bank (ADB) are providing long-term loans and viability

gap funding, contributing to the financial support of these projects.

. **Development Plans by Each Country**: Governments of Bangladesh, Bhutan, and Nepal have also put forth their own development plans, showing commitment to the project and shared regional growth.

Way forward

. To progress, the BBIN initiative should focus on timely completion of key railway projects like the Agartala-Akhaura link and the Khulna-Mongla line. Additionally, establishing effective cross-border protocols and regulatory frameworks is crucial for seamless operation and maximizing the economic and environmental benefits of these rail networks.

Mains point:The BBIN initiative aims to enhance regional connectivity and foster economic growth through railway development, joint funding, and cooperation among Bangladesh, Bhutan, India, and Nepal.

6. India and the IEA: Friends with benefits?

Context:

This article discusses India's potential full membership in the International Energy Agency (IEA). It highlights the importance of including India, given its growing energy consumption and role in climate change.

About India joining the IEA:

. India requested to join the International Energy Agency (IEA) as a full member. This discussion started during IEA's 50th anniversary.

. India would be the first non-OECD (Organisation for Economic Co-operation and Development) country to join, reflecting the changing global energy landscape.

The Significance of India Joining the IEA:

Benefits for India:

. **Enhanced Global Influence:** As the world's third-largest energy consumer, India's full membership in the IEA can increase its global influence in energy decisions.

. **Energy Transition Support**: India's ambitious renewable energy goals, like tripling non-fossil electricity capacity by 2030, can gain support and expertise from the IEA.

. **Learning from IEA Expertise:** India can benefit from the IEA's experience in energy security and climate-proofing economies.

Benefits for IEA:

. **Reflecting Current Global Energy Trends:** Including India reflects the shift in energy consumption from OECD countries to emerging economies.

. **Addressing Climate Change:** India's role in global energy consumption makes its participation crucial in global climate efforts.

. **Balancing Energy Needs with Climate Goals:** The IEA can work with India to balance its rising energy needs, especially in fossil fuels, with global emission reduction targets.

The Challenges Exist in India Joining the IEA:

. **Differing Energy Priorities:** India's increasing fossil fuel consumption, including a potential 20% rise in oil use by the end of the decade, contrasts with the IEA's focus on reducing fossil fuels.

- **New Coal Capacity Concerns:** Plans to build 40-80 GW of new coal electricity generation in India conflict with the IEA's stance against new coal capacity without expensive carbon removal technologies.
- **Oil Reserve Requirements:** India currently has less than a week's strategic oil reserve, far below the IEA requirement of a 90-day emergency reserve, posing a compliance challenge.
- **Balancing Economic Growth with Emission Reductions**: Aligning India's rapid economic growth with global emission reduction efforts presents a complex negotiation issue.

India's energy consumption impact the world:

- **Major Contributor to Global Energy Demand:** India's growing population and economy significantly increase global energy demand.
- **Influence on Global Emissions:** As a major greenhouse gas emitter, India's energy choices directly affect global emissions. Its success in renewable energy and emission intensity reduction is crucial for global climate goals.
- **Setting a Precedent for Developing Nations:** India's path in balancing economic growth with sustainable energy practices can serve as a model for other developing countries.
- **Driving Global Energy Transition:** India's commitment to increasing renewables, like targeting a tripling of non-fossil electricity capacity by 2030, influences global energy market trends and investments.

Way forward

- To move forward, the IEA and India should focus on mutual goals while respecting their differences. India's energy growth and transition to renewables, like its ambitious 2030 targets, are key. Balancing India's oil and coal usage with global climate goals is essential, requiring cooperation and understanding from both sides.

Mains point: The challenges India may face in aligning its energy priorities with the objectives of the International Energy Agency (IEA) and how these challenges could impact global energy dynamics and climate efforts.

7. **UN rights office says Israeli settlements in Palestinian areas amount to a 'war crime'**

Context:

The recent report from the Office of the UN High Commissioner for Human Rights (OHCHR) stated that the establishment and expansion of Israeli settlements in the West Bank and East Jerusalem constitute a war crime.

The office submitted its report to the Human Rights Council.

The report state:

- **Increase in the settlements–** During the one-year span from November 1, 2022, to October 31, 2023, the report indicates approximately 24,300 housing units in existing West Bank settlements were **"advanced."** This marks the highest annual figure since monitoring commenced in 2017.
- **Israel committing a war crime–** Building and expanding settlements means Israel moves its people into occupied areas, breaking international law and possibly committing a war crime.

About Office of the UN High Commissioner for Human Rights (OHCHR)

Source- Wikipedia

About:

a. The Office of the High Commissioner for Human Rights (UN Human Rights) is the leading UN entity on human rights.
b. It works to promote and protect the human rights that are guaranteed under international law and stipulated in the Universal Declaration of Human Rights of 1948.
.   **Mandate–** To ensure universal enjoyment of all human rights.
.   . **Headquarters–** Geneva, Switzerland

About UN Human Rights Council (UNHRC):

.   **About–** It is an inter-governmental body within the 'United Nations' system. The UNHRC works closely with the Office of the High Commissioner for Human Rights(OHCHR).
.   **Establishment-**The UNHRC replaced the former United Nations Commission on Human Rights. The Council was created by the United Nations General Assembly in 2006 by a resolution.
.   **Headquarters-** Geneva, Switzerland.
.   **Mandate-** It is responsible for strengthening the promotion and protection of human rights around the globe. It addresses situations of human rights violations and make recommendations on them.

8. Not law, nor duty Indians are being lured into fighting another country's war.

Context:

The article discusses how many Indians, lured by false job promises, ended up in dangerous roles in the Russia-Ukraine conflict. The Indian government is now acting to bring them back and stop such recruitment, but their response has been slow and insufficient. Indians' diaspora in conflict zones

The current situation of Indians recruitment in conflict zones:

.   The Indian government has identified at least 35 men directly affected, with estimates suggesting over 100 might be in danger zones.
.   Two Indian men, one from Surat and another from Hyderabad, have died in the conflict, and their bodies are yet to be repatriated.

The Indian government taken to overcome the issue of recruitment in conflict zones:

.   **Raids by Central Bureau of Investigation (CBI):** The Indian government, through the Central Bureau of Investigation (CBI), has conducted raids across India, targeting visa recruiters involved in human trafficking.
.   **Legal Action Against Recruiters:** The cases have been filed for human trafficking and for tricking people into traveling to Russia.
.   **Ministry of External Affairs (MEA) Advisories:** The MEA has issued advisories warning against deceptive job offers.
.   **Efforts to Bring Back Indians:** The government and the Indian Embassy in Moscow working to bring back Indians from conflict zones.
.   **Criticism of Government's Delayed Response:** Despite these actions, there has been criticism regarding the delayed response of the government and its failure to address the issue earlier, even though recruitment had been happening for months.

Mains point: The Indian government's response to Indians being recruited in conflict zones, including actions taken and criticisms received.

9. The India-EFTA trade deal: It is a win-win on various dimensions" and "India should focus on bringing technology"

Context:

India has recently signed a free trade agreement (FTA) with four European countries-Iceland, Liechtenstein, Norway, and Switzerland.

The European Free Trade Association (EFTA):

.   The European Free Trade Association (EFTA) is an intergovernmental organization set up for the promotion of free trade and economic integration to the benefit of its four Member States – **Iceland, Liechtenstein, Norway, and Switzerland –** and the benefit of their trading partners around the globe.

.   These are very high-income countries and have a strong position in certain supply chains. For ex-in the world of finance, both Switzerland (through its banking sector) and Norway (through its sovereign wealth fund) have a disproportionate influence.

Liechtenstein has an innovative financial sector, particularly when it comes to ESG (environment, social, governance) investing.

India-EFTA trade dynamics:

India's trade with EFTA (in million dollars)

EFTA countries	Exports	Imports	Trade balance
Iceland	13	5	8
Liechtenstein	0	8	-8
Norway	484	782	-298
Switzerland	1,382	19,657	-18,275
TOTAL	1,879	20,452	-18,574

*CY2023

.   As shown in the table, India has a consistent trade deficit with all the 4 EFTA countries. Switzerland is India's largest trade partner among the groups 4 members.

The significance of India-EFTA trade deal for India:

.   **Boost to trade opportunities** -It will empower Indian exporters access to specialized inputs and create conducive trade and investment environment. This would boost exports of Indian made goods as well as provide opportunities for services sector to access more markets.

.   **India- EU markets integration-Over 40% of Switzerland's global services** exports are to the EU.Indian companies can look to Switzerland as a base for extending its market reach to EU.

.   **Strengthening Make in India and Atmanirbhar Bharat-** It will encourage domestic manufacturing in various sectors like Infrastructure and connectivity, manufacturing, machinery, pharmaceuticals, chemicals, Food Processing etc.

.   T**echnology Transfer-EFTA countries** could help India integrate cutting-edge technological advancements in its manufacturing, agriculture and service sectors. It could also help India in production of green energy.

.   **Win-win proposition–** EFTA countries have cutting-edge technology. However, they lack scale. India can provide scale to these countries.

.   **Serves as a template–** India has innovated by including a different kind of **"behind-the-border"** requirement in its deal with EFTA countries. It has conditioned the lowering of tariffs on the mobilization of largescale investment by the EFTA countries. This could serve as a template when India has to negotiate trade agreements with other developed countries.

Mains point:The significance of recently concluded India-EFTA trade deal for India.

10.   **Yaounde Declaration: Health ministers of 11 African countries commit to end malaria deaths**

Context:

Health ministers from African nations grappling with the heaviest malaria burdens have recently signed the Yaounde Declaration. It aims to eradicate malaria-related fatalities.

Yaounde Declaration:

Source- DownToEarth

- **About**– The health ministers of 11 African countries with the highest burden of malaria signed this declaration. They have committed to take accelerated action to end deaths from the malaria disease.

- **Signed at**– Yaoundé conference (Yaoundé is Cameroon's capital), co-hosted by the World Health Organization (WHO) and the Government of Cameroon.

- **Participant**s– Ministers of Health, global malaria partners, funding agencies, scientists, civil society organizations, and other principal malaria stakeholders.

- **Signatory countries**– Burkina Faso, Cameroon, the Democratic Republic of the Congo, Ghana, Mali, Mozambique, Niger, Nigeria, Sudan, Uganda and Tanzania. These countries together accounts for more than 70 per cent of the global malaria burden.

- **Pledges stated in the declaration:**
  They promised to effectively tackle the malaria threat in Africa, where 95% of global malaria deaths occur.

- They promised to lead better and invest more money within their countries to fight malaria, use new technology for data, follow the latest advice on malaria control, and improve efforts against malaria at both national and local levels.

- The ministers also promised to invest more in health infrastructure, personnel, and programs, collaborate across different sectors, and form partnerships for funding, research, and innovation.

- By signing the declaration, they showed their strong commitment to quickly reducing malaria deaths and pledged to hold each other and their countries accountable for the commitments in the declaration.

Malaria:

- It is caused by the bite of the female Anopheles mosquito (vector) if the mosquito itself is infected with a malarial parasite.

- **There are five kinds of malarial parasites —** Plasmodium falciparum, Plasmodium vivax (the commonest one), Plasmodium malariae, Plasmodium ovale, and Plasmodium knowlesi.

Prelims point:Yaounde Declaration

ECONOMY

1.   Informal waste picker: Indispensable but invisible part of workforce

Context:

The exclusion and marginalization of informal waste pickers.

Informal Waste Management Sector:

·   As per **The International Labour Organization**, they are individuals or small and micro-enterprises that intervene in waste management without being registered. They are not formally charged for providing waste management services.

The percentage of informal waste pickers in India's workforce:

·   There are no reliable estimates of informal waste pickers in India. However, as per the **Periodic Labour Force Survey 2017-18**, India has nearly 1.5 million waste pickers in its urban workforce. The workforce usually consists of women, children and the elderly, who are often disabled, are the poorest of the urban poor, and face violence and sexual harassment.

Globally, this sector employs about 0.5%–2% of the urban population.

The challenges faced by informal waste pickers in India:

·   **Lack of data-**There is no reliable data on exact participation of informal waste pickers in India's workforce. This prevents their integration into the formal economy.

·   **Lack of recognition-**They are not recognized and acknowledged by society for their work. Although, they play an important role in sustainable urban waste management.

·   **Neglect of health-**They live near dumpsites and work under unhygienic and unhealthy conditions. This leads to dermatological and respiratory health issues apart from regular injuries.

·   **Social Discrimination-**They are treated as dirty and unwanted elements of society, and they have to deal with exploitative social behaviour.

·   **Loss of employment due to Private sector participation-** As per **Alliance of Indian Waste Pickers (AIW) 2023 report**, private actors use expensive machinery and offers competitive rates to waste generators such as households and businesses.

This deprives the informal pickers of their employment and forces them into hazardous waste picking.

·   **Extended Producer Responsibility–**According to report of **Women in Informal Employment: Globalizing and Organizing (WIEGO)**, it redirects waste **away** from the informal sector. This leads to large-scale unemployment of informal waste pickers.

The way forward:

·   **Plastic treaty–** This is a UN endorsed resolution to end plastic pollution.However,it must ensure that employment of informal waste pickers is not endangered.

·   **Reforms in EPR (Extended Producer Responsibility)-**EPR guidelines should prioritize the welfare of informal waste pickers. This will be a win-win situation as waste pickers possess traditional knowledge around handling waste and this knowledge can be utilized to strengthen EPR.

UPSC Mains point: Informal waste pickers in India

2. India's growth surprise

Indian Economy Growth

Context:

GDP forecast and observation of recently released household consumption expenditure data.

Some important statistics about Indian economy:

· **GDP growth rate–** Growth rate is 7.6 per cent with the first three quarters growing at an average of 8.2 per cent, the implicit fourth-quarter growth turns out to be 5.9 per cent. In its latest monetary policy statement, the RBI had projected India's GDP growth at 7 per cent for next year.

· **Reason behind this trend–** There is strengthening of bank and corporate balance sheets. Further, the government has given great push to infrastructure.

· **Private consumption–** It consists of Rural and urban consumption. Rural consumption was slower than urban consumption since high food inflation affects rural consumption more.

The important findings of recently released household consumption expenditure data:

· It shows shifts in consumption expenditure towards **non-food items over time**. This usually happens with rising per capita income.

· There is a shift from cereals to processed items.

· There is a split of national savings between the government, **households and the private sector.** The overall savings rate (savings/GDP) at around 30 per cent for 2022-23.

· Household savings are 61 per cent of total savings. They are split between **financial and physical savings**.

· **Finding**-It shows a sharp fall in net financial savings of households to 5.3 per cent of GDP in 2022-23 from 7.3 per cent in 2021-22.

· **Reason for decline of financial savings-** Households have used borrowings to acquire physical assets such as houses which led to decline of financial saving. However, during the pandemic, there was an increase in the financial savings rate while physical savings dropped.

· **Private corporate investment**

This is the third important data point released by the **NSO**. This is the first-time comprehensive data on private corporate investments has been made available.

· **Findings–** Private corporate investment did not show any positive sign of revival. Its share of total investments was stagnant. However, due to Production-Linked Incentive (PLI) scheme, notably in pharmaceuticals and electronics, there is an improvement in private investment.

· **Reforms that can be taken to improve private investment-**There is a need to ensure consistency in policies and reduction in compliance cost to inspire confidence of corporate investors.

UPSC Mains point: Household consumption expenditure patterrns

3.   Why are farmers protesting? – Rethink the way we grow food

Source:

The high costs and challenges in modern farming, both in Europe and India. It highlights issues like climate change, government policies, and the need for sustainable practices.

Why are farmers protesting?

Protest in India:

- **Demand for Higher MSP:** Farmers want increased minimum support prices for their crops due to high production costs.

- **Lack of Subsidies:** Unlike European farmers, Indian farmers receive minimal government support, impacting their profitability.

- **Climate Challenges:** Erratic weather and pest attacks increase risks for farmers.

Protest in Europe:

- **Climate Regulation Impact:** European farmers face challenges with new climate rules, like reducing pesticides and fertilizers, which increase their costs.

- **Financial Burdens:** Policies like reducing livestock numbers and cutting fossil fuel subsidies add to the financial stress of farmers in Europe.

- **Dependency on Subsidies:** European agriculture heavily relies on government subsidies, such as the EU's Common Agricultural Policy. For example, each farmer received approximately €6,700 annually in 2021 as direct income support.

The issues in modern farming:

- **Farm consolidation:** Farms have become larger, making it harder for small farmers to compete due to increased costs and bureaucracy.

- **Rising costs:** Both small and large farms face high input costs and debt. Organic farming, covering 10% of EU land, increases cultivation costs.

- **Intensive agriculture:** To improve productivity, there's more use of chemicals and bio-inputs, leading to higher costs and environmental damage.

- **Price control dilemma:** Governments need to control food prices, but this affects farmers' income, especially when costs rise due to climate change and pests.

- **Lack of subsidies:** In India, unlike Europe, farmers lack substantial government subsidies, making it hard to cope with increasing costs.

- **Environmental impact:** Intensive farming practices compromise environmental protection efforts.

- **Conflict between productivity and affordability:** Increasing productivity requires expensive inputs, but this isn't sustainable in regions needing affordable food.

What should be done:

- **Promote Sustainable Practices:** Shift towards regenerative or natural farming to reduce cultivation costs and improve environmental health.

- **Local Market Support:** Implement policies like Odisha's millet procurement for midday meals to provide farmers with assured markets.

- **Balance Subsidies and Costs:** Adjust subsidy systems to support farmers adequately, especially in regions like India where current support is minimal.

- **Manage Consumer Prices:** Develop strategies to maintain affordable food prices while ensuring fair compensation for farmers.

- **Reduce Food Waste:** Address the global issue of food wastage, ensuring efficient use of agricultural produce.

- **Enhance Environmental Policies:** Integrate environmental standards with agricultural practices, focusing on long-term sustainability.

UPSC Mains point: Farmers protest

Examine the key challenges faced by farmers in both Europe and India, as well as the proposed solutions to address the issues faced by modern farming.

4. Non-lapsable defence modernisation fund

Context:

The government has abandoned the proposal to establish a Non-lapsable Defense Modernization Fund, citing drawbacks related to its impact on parliamentary scrutiny and accountability.

About Non-lapsable defence modernisation fund

Context: The Hindu

Background:

· The 15th Finance Commission has proposed the establishment of a dedicated non-lapsable Modernisation Fund for Defence and Internal Security (MFDIS). The idea behind is to address the disparity between projected budget needs and the allocation for defense and internal security.

· In 2021, the government placed an action-taken report in Parliament alongside the Commission's report. The government mentioned that it has "in-principle" agreed to create such a fund in the Public Account of India.

What is the need for Non-Lapsable Funds:

· In India, the defense budget is assigned annually. At the close of each fiscal year, any remaining funds are reverted to the government's consolidated fund.

· Consequently, the defense services miss the chance to utilize these allocated funds for unforeseen needs or future requirements. Establishing a Non-Lapsable Defense Modernization Fund (DMF) offers a solution to this challenge.

· Once operational, the DMF would allow the three services to keep any unspent budget allocation beyond the fiscal year's end.

Why did the government abandon this proposal:

· Traditionally, only funds raised through cesses for specific purposes are non-lapsable.

· Apart from items funded through a cess, deferring today's allocations with the intention of using them later contradicts the fundamental principles of parliamentary financial accountability.

· The government says it is working on a separate plan to explore a special arrangement for establishing a "Non-lapsable Defence Modernisation Fund."

Difference between lapsable and non lapsable funds in India

· In India, lapsable funds are budget allocations that must be spent within a set time or they return to the government's general funds.

· Non-lapsable funds, however, don't expire at the end of the fiscal year and can be carried over if unused. They're usually earmarked for specific purposes and don't lapse at year-end **for example**– funds raised through cesses for specific purposes are non-lapsable.

UPSC Prelims and Mains point: Lapsable and Non lapsable funds.

5. India's economic growth rate – Inflation has a starring role in 2023-24 growth

Context:

India's impressive economic growth and low inflation rate, as measured by the GDP deflator. It suggests that official inflation measures may need updating, considering changes in consumer habits and the impact of technology on prices.

The status of India's economic growth rate:

· **Growth Acceleration:** India's economic growth rate is likely to increase from 7% in the fiscal year 2022-23 to 7.6% in the current fiscal year ending on March 31.

· **Nominal vs. Real Growth:** The nominal growth rate for 2023-24 is estimated at 9.1%, with real growth at 7.6%. This distinction is due to the low inflation rate used in calculations.

· **Inflation Anomaly:** Despite the GDP deflator indicating a low inflation rate of 1.5% for 2023-24, consumer experiences, like rising costs of eggs, tomatoes, and onions, contradict this.

· **Previous Year's Data**: In the fiscal year 2022-23, India's nominal growth rate was 14.2%, and real growth was 7%, indicating an inflation rate of 7.2%.

How do different inflation measurements compare:

· **GDP Deflator Inflation:** For the fiscal year 2023-24, India's GDP deflator shows an exceptionally low inflation rate of 1.5%. This figure significantly deviates from consumer experiences and other inflation indicators.

· **Consumer Price Index (CPI):** The CPI, which reflects retail inflation, hasn't shown a similar drop to that indicated by the GDP deflator. It remains higher, suggesting a disparity in measuring consumer-facing inflation.

· **Wholesale Price Index (WPI):** Contrary to the CPI, the WPI has been negative for much of 2023-24, aligning somewhat with the low inflation indicated by the GDP deflator.

Changes are seen in consumption patterns:

· **Decline in Food Share:** In India, the proportion of food, especially cereals, in consumption has decreased for both rural and urban populations.

· **Rural Consumption Shift:** In rural areas, the share of food in the average consumption basket fell from 59.4% in 1999-00 to 46.4% in 2022-23.

· **Urban Consumption Shift:** For urban areas, the share of food dropped from roughly 48.1% to 39.2% in the same period.

What should be done:

· **Revise Inflation Measurement**: Given the disparity between the GDP deflator's low inflation rate and other indicators like CPI and consumer experiences, India should consider revising its inflation measurement methods.

· **Reevaluate CPI Composition:** Adjust the Consumer Price Index (CPI) to reflect the changing consumption patterns, particularly the decreased significance of food items.

· **Maintain Comparability:** Any revisions in measuring inflation should preserve the ability to compare data with past records, ensuring continuity and reliability.

UPSC Mains point: India's economic growth rate

6. **Right to Apprenticeship law**

Right to Apprenticeship law

Source:

A critical analysis of mandating Right to Apprenticeship law

The Right to Apprenticeship law:

· This is a proposed law which mandates private or public sector players to provide a one-year internship to any college degree/diploma holder on

demand. The internship will be partially funded by the government.

The problems associated with mandating such law:

· **Hampers business ecosystem** – The idea of forcing companies to accept candidates seeking temporary employment is undesirable. The decision to hire, even if for only a year, should be the employer's prerogative and not a government diktat. This will discourage private investment in India.

· **High cost for private players** – The student does not contribute much to the firm's revenues during training. Further, there's no certainty that the apprentice who has acquired the requisite skills will remain after the training period is over.Thus,it may be an uneconomical proposition for private industries.

· **Limitation of MSMEs**– MSMEs will have difficulty in investing resources for training employees due to their financial and logistical limitations.

The significance of mandating the Right to Apprenticeship law:

· **Creation of skilled workforce**– The government subsidizing an apprenticeship training system in private industry may pave the way for proper skilling of young workforce. It can also enhance academic-industry linkage.

· **Mainstreaming of employment issues**- The legal and statutory right would create the onus on the government to pay special focus on employment for youths.

· **Minimize populist scheme**– A government-financed workforce training programme can incentivize private companies to hire trained people. This is better than giving unemployment allowance schemes which lead to high fiscal deficit for state governments.

UPSC Mains point: Right to Apprenticeship law

7.   India's suboptimal use of its labour power

Context:

The issues of underutilization of labour force which has the potential to endanger India's demographic dividend

Background:

About 90% of the working Indian population earns its livelihood through informal employment. The informal employment is characterized by little or no job security, no employment benefits, no social protection, and lower earnings.

The status of labour force participation in India:

· As per Periodic Labour Force Survey (PLFS), the Labour Force Participation Rate (LFPR) has gone up steadily to 58.35% in 2021-22, starting at 52.35% in 2017-18. This improvement is largely driven by enhanced participation of women in labour force in rural areas.

· The overall unemployment rate has also declined from 6.2% in 2017-18 to 4.2% in 2021-22. For the youth, the unemployment rate numbers are higher -12% in 2017-18 to 8.5% in 2021-22.

The different categories of employment in India:

There are 3 types of employment in India.

A) Regular wage/salaried work

B) Casual work

C) **Self-employment**.

Further, the self-employed come in three categories — own-account workers, unpaid family workers, and employers who employ outside labour.

The issues in labour market despite increase in labour force participation in India:

- **Rise of unpaid work**-Improvements in LFPR and the drop in the unemployment rate are largely driven by self-employment. However, bulk of the growth in self-employment has come from the rise of unpaid family workers, which has increased from 26% to 31.4% over the period.

- **Decline in regular wage employment**– The proportion of other subcategories within the employed (regular wage/salaried employee, casual labour, employer, and own-account worker) has dropped between 2017-18 and 2021-22. This reflects a worsening of the quality of work being done by the workforce.

- **Uneven increase in wage earnings**– Both rural and urban daily earnings have increased in the past few years. However, this overall increase was not uniform for workers. Here, salaried workers received the highest increase among different categories of workers, followed by the self-employed and then the casual workers.

- **Low productivity work**– Own-account workers, casual workers, and unpaid family workers form around 75 % of total workforce. They are mainly engaged in low productivity work.

The ramifications of this trend:

- The economy is wasting its labour capital by engaging a majority of the workforce in low quality work. This may hamper India's potential to reap its rich demographic dividend.

- Poorer sections have low savings, and there is not much rise in their earnings. This trend is detrimental for the demand-side of the economy as there would not be much demand for products due to the low purchasing power of the population.

UPSC Mains point: The issues in India's labour market

8. New digital competition law proposed to regulate Big Tech

Context:

The Committee on Digital Competition Law, in its report, has recommended legislation to regulate the market power of Big Tech firms such as Google and Meta.

What does the report state:

Context: The Hindu

- **Competition Act outdated in digital age**– The committee says the Competition Act of 2002 deals with anti-competitive behavior after it occurs, without considering today's digitalization pace. If adopted, the suggestions would improve the Competition Commission of India's ability to address competition issues in the tech sector.

- **Market dominance of Big Tech**– The report expresses concern about the market dominance of these Big Tech companies. It cites their "network effects," which enable rapid growth of their user base and establish a market position that is challenging for new competitors to overcome.

- **New Digital law proposed**– The recommendation suggests forming a new law, the Digital Competition Act, to introduce proactive legislation aimed specifically at large digital companies, to complement the Competition Act.

- **SSDEs identification:**
  a. A draft proposed by the panel identifies companies with a "significant presence" in the

market for a "Core Digital Service" as "Systemically Significant Digital Enterprises (SSDEs).

b. According to the draft, companies would be required to assess if they fall into this category.

c. Failure to self-designate could result in penalties based on the entire global turnover of the corporate group, rather than just domestic revenues. Specific rules for SSDEs would be determined after public consultations.

About the Committee on Digital Competition Law

· **Constituted by**– Ministry of Corporate Affairs

· **Committee Members**: It consists of 16 members, including government officials, legal experts, and industry representatives.

· **Functions of the Panel**:

a. Examine if the Competition Act of 2002 and the rules framed under it are equipped to address the challenges presented by the digital economy.

b. It also study the requirement of the digital competition law and give suggestions regarding competition norms.

UPSC Prelims point: Digital competition law

9. SEBI Index Providers Regulations, 2024

Context:

The Securities and Exchange Board of India (SEBI), in its latest regulations, has mandated index providers overseeing "significant indices" linked to Indian securities to register with the SEBI. This measure aims to improve transparency in the governance of financial benchmarks indices.

What do the SEBI Index Providers Regulations of 2024 say:

STRATEGIC SHIFT

■ The global index providers may not have to register with Sebi unless their indices are used as benchmarks by domestic asset managers with large corpus

■ Sebi has excluded indices that are for exclusive use in a foreign jurisdiction

■ Benchmarks regulated by the Reserve Bank of India are also excluded from these regulations

■ The RBI issued a framework in December mandating index providers that compile indices based on domestic debt to register with it

■ Industry players said the NSE indices, and Asia index will have to register with Sebi

Context: Business Standard

· The regulations necessitate index providers such as NSE Indices and Asia Index (AIPL) to register with SEBI. Additionally, they must publicly disclose their methodology documents and comply with a code of conduct.

· Global index providers like MSCI, Nasdaq, and FTSE Russell might be exempted from registration requirements unless their indices are significantly utilized by domestic asset managers.

What are Indices:

· Indices are statistical tools employed to monitor the performance of a collection of assets or securities within a specific market.

· They act as reference points or signals for investors, offering insights into the overall performance and trends of a particular market segment.

· Indices are composed of stocks, bonds, commodities, or other financial assets, allowing investors to track changes in different sectors or the overall market.

· **Examples**– Sensex and Nifty 200 in India, and S&P 500, Dow Jones Industrial Average, and NASDAQ Composite in the United States.

UPSC Prelims point: Various Indices

10. Shift from "Make in India" to "Make Products in India"

Context:

The need to shift from Make in India to Make Product in India for realizing the vision of Viksit Bharat.

What is the need for this shift:

· **Ensuring high growth rate**-India's annual growth must consistently surpass 10 to 12 % for next many years to achieve a developed country status. In this context, it is important to focus developing products in domains like electronics,automobiles,and defence which can drive India's growth at faster pace. For ex-South Koreas success could be attributed to the development of these sectors.

· **Knowledge driven economy-** In a tech-driven knowledge economy, a product's intellectual property contributes half its value. This makes it challenging to equal value-creation through manufacturing only. Hence, there is a need to shift from Make in India to Make Products in India.

Various Steps can be taken to shift from Make in India to Make Products in India:

· **Liberalize research & development –** There is a need to open research and development(R&D) beyond the public sector. This has been successfully done in the case of space and drones. There is a need to add atomic energy and deep-sea exploration to this list.

· **Public-Private partnership–** There is a need to transform competition into meaningful partnerships. For instance, during the Covid pandemic, the National Institute of Virology, an ICMRlab,isolated the strains of SARS-Cov-2 virus and shared them with Bharat Biotech. This led to the development of Covaxin, which became available in just a few months.

· **Ease of doing innovation–** Regulators must prioritize innovation over adhe-rence to rules. For ex-during pandemic, despite the rules not providing for emergency use authorisation, authorities invoked a generic provision and issued restricted use licences for vaccines.

· **Government procurement–** An OECD survey in 2017 revealed that 80 % of nations supported innovation through assured government procurement. It acts as a validation for innovators, instils consumer confidence, and ensures revenue streams, thereby mitigating risk.

· **Government Funding –** There is a need to mitigate risk in product development through government funding. India should learn from successful models like Darpa in the USA and Jozma in Israel. There should be expansion of iDEX model beyond defense.

· **Demographic dividend –** India's demographic dividend needs to be leveraged to create a sizable talent pool in emerging technologies. Academic universities should be transformed into hubs that nurture entrepreneurship and innovation.

· **Brand building for indigenously developed products –** Indian Brand Equity Foundation should be tasked with creating global brands for indigenously-developed-products.

Further,the government should promote export of indigenously developed products through bilateral and multilateral mechanisms.

· **Standard Making –** Geopolitics plays a huge role in standard making. For ex-delayed World Health Organization approval for Covaxin. Thus, to assert influence, the government must collaborate with industry to secure decision-making roles in global bodies.

·   "Make Products in India" is a strategic imperative and immediate government attention is necessary.

UPSC Mains point: Transition from Make in India to Make Products in India.

11. SM REITs- Small and medium real-estate investment trusts

Context:

The Securities and Exchange Board of India (Sebi) recently introduced amendments to the REIT Regulations of 2014, outlining provisions for the establishment of small and medium real-estate investment trusts, known as SM REITs or micro REITs.

Small and medium real-estate investment trusts SM REITs

·   **About:** These are specialised real estate investment trusts that differ from conventional REITs in their scale and focus.

·   **Aims:** It aims to regulate the fractional ownership industry and safeguard investor interests, incorporating both commercial and residential properties within the new framework.

Source: Rinoinvest

·   **Difference between traditional REITs and SM REITs:** Traditional REITs invest in large-scale commercial properties like offices and malls, while SM REITs focus on smaller and medium-sized properties with lower values.

·   It maintains diversified portfolios, spreading risk across different property types within the real estate market.

·   Small and medium real-estate investment trusts may raise funds from Indian and foreign investors by the issuance of units.

Criteria:

·   The minimum subscription size for units: 10 lakh is treated as one unit.

·   To establish this trust, there must be a minimum of 200 unit holders (Not including the investment manager, its related parties, and associates)

·   The investment manager responsible for launching an SM REIT must have a net worth of at least ₹ 20 crore, and a separate trustee will be appointed for oversight.

·   Micro REITs can be listed with asset values ranging from Rs 50 crore to Rs 500 crore.

·   These funds will be utilized for acquiring and managing real estate assets, aiming to generate income for investors.

·   Ownership of these assets will be organized through one or more schemes, each operated under special purpose vehicles (SPVs).

**UPSC Prelims and Mains point: REITs and SM REITs**

ENVIRONMENT

1. Melanochlamys droupadi: Sea slug named after President Murmu

Context:

· The Zoological Survey of India (ZSI) has announced the discovery of a new marine species of head-shield sea slug.

· It has been named as Melanochlamys droupadi after the President of India, Droupadi Murmu.

About Melanochlamys droupadi
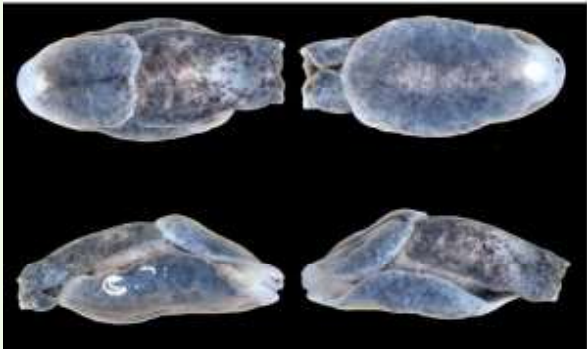
Context:- The Hindu

· **Place of Discovery–** It was discovered from Digha of West Bengal coast and Udaipur of Odisha coast.

· **Distinct Feature–** It is characterized by a short, blunt and cylindrical body and a smooth dorsal surface with two dorsal equal or unequal shield.

· **Physical attributes**:

   a. It's a tiny brownish-black invertebrate, measuring up to 7 mm long, with a ruby red spot at its rear.

   b. It has a shell inside its body, and is a hermaphrodite (organisms possesses both male and female reproductive organs).

· **Reproduction–** They reproduce between November and January.

· **Habitat–** These species are typically found along the intertidal zone, leaving crawl marks on sandy beaches.

· **Distribution–** Species of the genus Melanochlamys are primarily found in temperate regions of the Indo-Pacific Ocean, but three species are truly tropical: Melanochlamys papillata from the Gulf of Thailand, Melanochlamys bengalensis from West Bengal and Odisha coasts, and the current species (Melanochlamys droupadi).

About Zoological Survey of India (ZSI):

· **About:**

   a. It is a subordinate organization of the Ministry of Environment and Forests, Govt. of India.

   b. It is a national center for surveying and exploring fauna to advance knowledge about the country's diverse wildlife.

· **Established–** It was established in 1916 as a national centre for faunistic survey and exploration of the reContext:s.

· **Headquarters–** Kolkata.

UPSC Prelims point: Melanochlamys droupadi

2. Report on Status of Leopard in India

Context:

Recently, the Environment Ministry, in collaboration with the National Tiger Conservation Authority (NTCA) and the Wildlife Institute of India (WII), unveiled the fifth cycle of leopard population estimation in India.

Key findings of the Fifth cycle of leopard population estimation in India

Context:- PIB

· **Population Estimate:**
   a. India's leopard population is estimated at 13,874, showing stability compared to the previous count. The numbers rose by 8% from 12,852 in 2018 to 13,874 in 2022.
   b. However, this only covers 70% of leopard habitat, with the Himalayas and semi-arid regions not included in the survey.

· **Region-wise Trends–** In Central India, the leopard population remains stable or shows slight growth, whereas in the Shivalik hills and Gangetic plains, there is a decline in population.

· **State-wise distribution:**
   a. The highest number of leopards were reported in Madhya Pradesh (3,907), followed by Maharashtra (1,985), Karnataka (1,879) and Tamil Nadu (1,070).
   b. The tiger reserves or locations with the highest leopard populations include Nagarajunasagar Srisailam in Andhra Pradesh, followed by Panna and Satpura in Madhya Pradesh.

· **Survey Methodology–** The study targeted forested habitats across 18 states with tiger populations, employing foot surveys and camera traps. It captured over 4,70,81,881 photographs, resulting in 85,488 images of leopards.

About Leopard

About the Species: The Indian leopard (Panthera pardus fusca) is a leopard subspecies widely distributed on the Indian subcontinent. These are the smallest of the big cats known for their ability to adapt to a variety of habitats.

Conservation Status:
• **IUCN Red List:** Vulnerable
• **CITES:** Appendix I
• **Wildlife (Protection) Act,1972:** Schedule I

Habitat:
   In India, the leopard is found in all forest types, from tropical rainforests to temperate deciduous and alpine coniferous forests. It is also found in dry scrubs and grasslands, the only exception being deserts and the mangroves of Sundarbans.

UPSC Prelims point: Project Leopard

3. **Ecocide- Belgium recognizes 'ecocide' as both national and international crime**

Context:
   Belgium, known as Europe's cockpit, has become the first in the European Continent to recognise 'ecocide' as both a national and international crime.

About Ecocide:

· **About–** Ecocide means significant harm or destruction to ecosystems, often caused by humans.

· **Commonly cited examples-** Deforestation during the Vietnam War, the destruction of the environment during the Russian invasion of Ukraine, deforestation in Indonesia and the Amazon rainforest, oil pollution in the Niger Delta and the Chernobyl disaster.

· **Legal restriction–** There is currently no international law prohibiting ecocide during peacetime; however, the Rome Statute criminalizes it.

· **The term 'ecocide' was popularized by Olof Palme** when he accused the United States of ecocide at the 1972 UN Conference on the Human Environment.

About Belgium

Context:- BBC

· **Location**– It is a nation located in Northwestern Europe.

· **Borders**– Netherlands, Germany, Luxembourg, France, and the North Sea.

· **Regions**– Belgium is renowned for its complex institutional structure, which is divided into three autonomous regions.

   a. Flanders

   b. Wallonia

   c. Brussels-Capital Region

· **Population diversity**– Belgium has two primary linguistic groups:

   a. The Flemish Community, accounting for roughly 60 percent of the population

   b. The French Community, comprising around 40 percent.

   Note– There's also a small German-speaking Community, making up about one percent of the population in the East Cantons.

· **International Affiliation:**

   a. It is a founding member of the European Union, Eurozone, NATO, OECD, and WTO.

   b. It capital Brussels serves as the de facto capital of the European Union and and host the North Atlantic Treaty Organization (NATO) headquarters.

UPSC Prelims point: Ecocide

4. BioTRIG- New waste management technology

Context:

A recent study has claimed that BioTRIG, a new waste management technology, could help rural Indians.

About Biotrig:
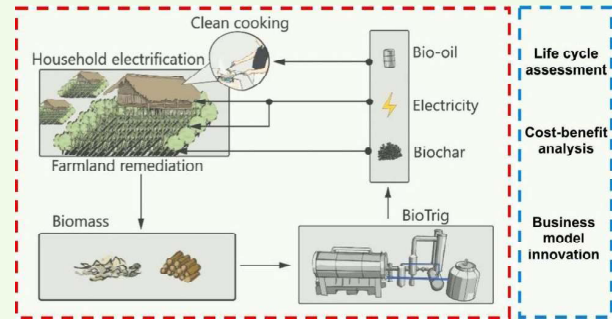
Down to Earth

· **About:** It is a new waste management technology which works on the pyrolysis system.

   Note: Pyrolysis is a kind of chemical recycling that turns leftover organic materials into their component molecules.

· **How it works:** Waste is sealed inside an oxygen-free chamber. The sealed waste is then heated above 400 degrees Celsius. During this process, useful chemicals are produced.

· BioTRIG generates three valuable products: Bio-oil, Syngas and Biochar fertilizer.

· **Significance:**

· The bio-oil is a clean-burning alternative to dirty cooking fuels in homes.

· The syngas and bio-oil facilitates heating and powers the pyrolysis system, and surplus electricity is utilised to power supply to local homes and businesses,

· Biochar improves soil fertility and helps store carbon.

· The BioTRIG system could help to reduce greenhouse gas emissions from communities by nearly 350 kg of CO_2-eq per capita per annum.

UPSC Prelims point: BioTRIG

5. Amrabad Tiger Reserve

Context:

Recently, it was found that the **Amrabad Tiger Reserve (ATR)** is facing challenges such as understaffing and financial constraints.

About Amrabad Tiger Reserve (ATR)

Times of India

Aspect	Details
About	1. This Tiger Reserve (ATR) is one of the largest tiger reserves in India.
	2. Amrabad is the second-largest Tiger Reserve in terms of core area.
	3. It is also the sixth largest in terms of total area among 51 Tiger Reserves in India.

Location

It is located in the Nagarkurnool and Nalgonda districts in the southern part of Telangana.

History

The reserve was notified as a sanctuary in the year 1983.

Distinct feature

1. Amrabad Tiger Reserve Forest is home to the largest number of Tigers in Telangana State.
2. The hilly terrain of this Tiger Reserve, with deep valleys and gorges, forms the catchment of the Krishna River.

Flora

1. Dense grass occurs in 30% of the area and scattered in an additional 20%.
2. Dominant tree species include *Terminalia tomentosa, Hardwickia binata, Madhuca latifolia. Diospyros melanoxylon, Gardenia latifolia, Anogeissus latifolia, Chloroxylon swietenia, Terminalia* spp.

Fauna

1. Major wild animals found are Tiger, Leopard, Wild dog, Indian Wolf, Indian fox, Rusty-spotted cat, Small Indian civet, Sloth bear, Honeybadger, Wild boar etc.
2. Over 303 bird species have been identified in this region. Some important groups include Eagles, Pigeons, Doves, Cuckoos, Woodpeckers, Drongos etc

UPSC Prelims point: Amrabad Tiger Reserve

6. India's 1st Green Hydrogen Plant in Stainless Steel Sector

Context:

The Union Minister for Steel and Civil Aviation recently unveiled India's first Green Hydrogen Plant in the Stainless Steel Sector.

About the Project:

· **Location**– It is situated at Jindal Stainless Limited in Hisar.

· **Commissioned by–** Hygenco and Jindal Stainless.

· **Distinct feature:**

a. This project will be the world's first off-grid Green Hydrogen plant for the stainless steel industry.

b. It will also be the first Green Hydrogen facility with rooftop and floating solar installations.

c. It is a state-of-the-art initiative aimed at significantly reducing carbon emissions. It aims to reduce about 2,700 metric tonnes annually and 54,000 tons of CO_2 emissions over the next twenty years.

The Significance of this Project:

This green hydrogen project aligns well with the government's goal for a cleaner and sustainable future.

It will help in the government's vision to prioritize green growth and achieve the goal of reaching net zero carbon emissions by 2070.

Green hydrogen:

· Green hydrogen is generated by using renewable energy Context:s like wind or solar power to electrolyze water, separating hydrogen from oxygen in the process.

· Unlike traditional methods that rely on fossil fuels, green hydrogen production emits zero greenhouse gases, making it a clean and sustainable energy Context:.

UPSC Prelims point: Green Hydrogen

7. **Swachhata Green Leaf Rating initiative**

Swachhata Green Leaf Rating initiative

Context:

Recently, the Department of Drinking Water & Sanitation (DDWS), Ministry of Jal Shakti, in collaboration with the Ministry of Tourism launched the Swachhata Green Leaf Rating (SGLR) initiative.

About Swachhata Green Leaf Rating (SGLR) initiative:

Swachhata — Green Leaf Rating — in Hospitality Facilities

PIB

Aspect	Details
What is it?	Swachhata Green Leaf Rating Initiative is a government initiative to ensure world-class hygiene and sanitation in the hospitality sector.
Objectives	The primary goal is to prevent pollution in water bodies and maintain a clean environment.
Launched by	The Department of Drinking Water & Sanitation (DDWS), Ministry of Jal Shakti, in collaboration with the Ministry of Tourism

The significance of Swachhata Green Leaf Rating (SGLR) initiative:

· The initiative promotes sanitation, waste management, and reduced plastic use in hospitality.

·   Its rating system applies to all types of accommodations, assessing compliance with guidelines.

UPSC Prelims point: Swachhata Green Leaf Rating

8. Begonia Narahari

Context:

A new flowering plant species named Begonia Narahari was recently discovered by researchers in Arunachal Pradesh.

About Begonia Narahari

Context:- bnn

· **Discovery and Identification:**

  a. It is a newly discovered flowering plant species belonging to the Begonia genus within the Begoniaceae family.

  b. The species, named 'Narahari,' is a tribute to Prof. Garikapati Narahari Sastry for his contributions to the well-being of the region and the establishment of the Germplasm Conservation Centre for the bio-reContext:s of Northeast India.

· **Characteristics:**

  a. Begonia Narahari is known for its vibrant blue iridescence when exposed to direct light, a unique characteristic that helps distinguish it from related species during identification.

  b. Currently, Begonia naraharii is only found in the Demwe area within the Lohit district of Arunachal Pradesh.

· **Conservation Status:**

  a. Due to limited information about its global population, the species is temporarily labeled as Data Deficient (DD) per the IUCN species assessment guidelines.

  b. The limited habitat and possible threats like agricultural expansion, fires, and timber extraction highlight the importance of focused conservation efforts.

UPSC Prelims point: Begonia Narahari

9. Cycas circinalis (Eenthu Pana)

Context:

Cycas circinalis (Eenthu Pana) faces the threat of extinction in northern Kerala due to an unidentified and rapidly spreading plant disease.

About Cycas circinalis

· **About-**Cycas circinalis, also known as Queen Sago, is a species of cycad native to southern India and Sri Lanka.

· **Classification**:

  a. It is classified within the cycads family (Cycadaceae), which ranks among the planet's most threatened plant groups.

  b. These plants originated 300 million years ago during the Carboniferous

period, making cycads the oldest surviving group of seed plants.

· **Recognized by names in India**-It is called Eenthu Pana in Kerala and has various names like Mund isalu (Kannada), madana kama raja (Tamil), and Malabari supari (Marathi) in different states.

· **Characteristics:**
a. It is an evergreen tree resembling a palm, reaching heights of up to 25 feet.
b. It is commonly found in dense, scrubby woodlands in hilly regions that experience seasonal dryness.
c. During extremely arid periods, it may shed its leaves.
d. It requires complete dryness for processing, which is challenging since it is usually harvested during the rainy season.
e. Typically, it takes 40 to 50 years for the trees to bear fruit.

· **Geographical distribution**:
a. It is recognized as an Indian native plant, found exclusively in the Western Ghats region, spanning the states of Kerala, Karnataka, Tamil Nadu, and southern Maharashtra.
b. Among the nine cycad species identified in India, six are native to the country.

· **Applications**– It is a valuable plant used for nutrition by many local communities in the Western Ghats.

UPSC Prelims point: Cycas circinalis

10. Taeniogonalos deepaki
Context:
Recently, a new species of parasitoid wasp was discovered in the Western Ghats by scientists at ATREE, Bengaluru.

About Taeniogonalos deepaki

The Hindu

· **About:** It was discovered in the Belgaum region of Karnataka. The genus Taeniogonalos belongs to the family Trigonalyidae of the order Hymenoptera.

· **Category:** The Trigonalyidae family comprises hyperparasitoids, a type of insect that "sneak into" parasitoids or insects whose larvae grow on or inside other insects' bodies.

Note: A parasitoid is an organism that lives in close association with its host, but at the host's expense. Unlike typical parasites (such as fleas or ticks), parasitoids eventually result in the death of their host.

· **Distribution:** The Taeniogonalos genus is distributed in Afrotropical, oriental, eastern palaearctic, nearctic, Australian and neotropical regions. 6 of the species have been reported earlier from India and 20 from China.

· **Distinguish features:** A combination of features, including the head, antenna, and fore-wing, distinguishes the new species from other Taeniogonalos species found in India.

UPSC Prelims point: Taeniogonalos

11. Rajasthan to classify orans (sacred groves) as deemed forests
Context:
Villagers in western Rajasthan are worried about the State's plan to classify orans (sacred groves) as deemed forests.

About orans

ICCAS

· Orans are traditional sacred groves found primarily in Rajasthan, India.

· They are community-conserved sacred spaces rich in biodiversity and usually include a water body.

· **Importance:** The community has a close relationship with orans holding cultural, religious, social and ecological significance:

· **Religious:** Orans are often associated with local deities and are barred from cutting and felling trees due to spiritual and religious connections to the Orans.

· The places of worship, last rites, and religious events take place inside the Oran and are related to the trees, water bodies, and other entities of the sacred groves.

· **Ecological:** They are among the last natural habitats of the Great Indian Bustard. The open stretch of land receives long hours of sunlight and brisk winds and has become a hub of green energy with windmills and solar photovoltaic dotting it.

· **Social:** Orans are used for livestock grazing and are also places for communal congregations, festivals, and other social events. The villagers also use gum, timber, forest produce, and wild vegetables from orans for their livelihood and daily use.

· **Challenges and Concerns:**

· Orans face threats due to current categorization as wastelands.

· Large portions of land are allocated for solar plants, impacting biodiversity and livelihoods.

· The recent declaration of Orans as deemed forests raises concerns about access to reContext:s and movement restrictions.

12. Golden langurs

Context:

The latest survey of the primate has revealed that there are an estimated 7,396 golden langurs in India.

About Golden langurs

Context:-Wikipedia

Aspect	Details
Description	It is an Old World monkey found in a small region of Western Assam, India and in the neighbouring foothills of the Black Mountains of Bhutan
Characteristics	1) They are most easily recognized by the colour of their fur, after which they are named.
	2) They are highly dependent on trees, living in the upper canopy of forests. They are also known as leaf monkeys.
Habitat	It is endemic to western Assam, India, and southern Bhutan.Their habitat is restricted to the region surrounded by four geographical landmarks: the foothills of Bhutan (North), Manas river

(East), Sankosh river (West), and Brahmaputra river (South).

Population distribution

The northern extended population, which encompasses the western part of the Manas Biosphere Reserve. It extends from the Sankosh River to the Manas river up to the India-Bhutan border.

Protection status

IUCN List of Threatened Species: EndangeredConvention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Appendix IWildlife Protection Act, 1972 : Schedule I

Threats

1) Restricted Habitat-Their habitat is restricted by natural boundaries, further increasing the threat of extinction.
2) Habitat Fragmentation-Their habitat in Assam has fragmented drastically, especially after a thrust on rural electrification and massive deforestation.
3) Inbreeding-Obstructions such as wires, and gaps in the forest due to felling, have increased the threat of inbreeding among golden langurs.

UPSC Prelims point: Golden langurs

13. Blue Leaders Alliance

Context:

The Blue Leaders High-Level Event on Biodiversity Beyond National Jurisdiction was held in Belgium on March 7, 2024.

About Blue Leaders

blueleaders
30x30

Blue leader

· **About:** It is an alliance of countries calling for urgent action to save the global ocean in the face of the climate crisis, overfishing, pollution, and other threats.

· **Members:** There are 24 member countries of blue Leaders. Belgium, Costa Rica, Ecuador, Germany, Italy, Netherlands, Spain are some of the key members of this alliance.

· **Note:** India is not the member of this alliance.

· **Goals:** The Blue Leaders are committed to two major goals:

· Securing a new international target to protect at least 30% of the global ocean through a network of highly and fully protected marine areas by 2030.

· The rapid and successful conclusion of a new High Seas Treaty that provides for establishment of fully and highly protected marine areas in the high seas and strengthens management of human activities outside protected areas.

· What does "highly" and "fully" protected actually mean:

· Highly protected means only light extractive activities, such as subsistence or small-scale fishing with minimal impact, are allowed.

· Fully protected means that no extractive or destructive activities are allowed.
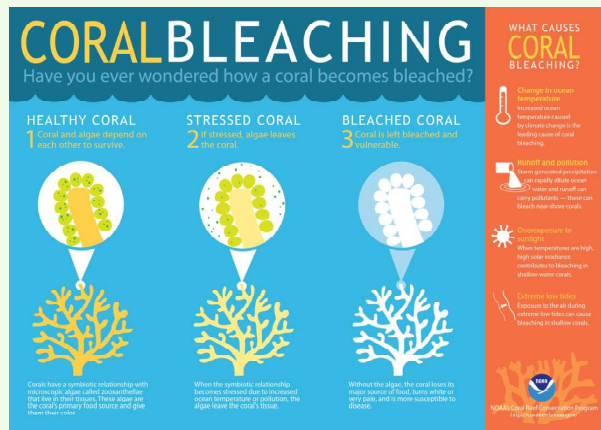
UPSC Prelims point: Blue leader event

14. Fifth mass coral bleaching event

Context:

The Great Barrier Reef is experiencing its fifth mass coral bleaching event in eight years.

About Coral bleaching

Context:: NOAA

·   **About:** When corals are stressed by changes in conditions such as temperature, light, or nutrients, they expel the symbiotic algae living in their tissues, causing them to turn completely white. This is called coral bleaching.

·   **Causes:** Change in ocean temperature caused by climate change, run-off and pollution storm, overexposure to sunlight, extreme low tides cause coral bleaching.

·   **Impact on wildlife:** Coral reefs support some of the most biodiverse ecosystems on the planet:

·   Coral reefs are vital ecosystems supporting diverse marine life, including sea turtles, fish, crabs, and more.

·   They offer shelter, breeding grounds, and protection, crucial for many species' survival. Reef collapse threatens this biodiversity, risking extinction for at-risk species.

·   **Impact on Humans:** It threatens livelihoods, food security, and safety.

·   Reefs act as natural barriers, protecting coastal communities from waves and storm surges. Without them, costly and less effective seawalls become necessary, harming the environment.

·   Bleaching exacerbates overfishing by disrupting the food web and depriving species of vital habitats for spawning.

This impacts those reliant on marine reContext:s for income and sustenance.

·   Reef tourism is a multi-billion-dollar industry faces jeopardy as bleached reefs deter visitors and impact local economies and jobs.

UPSC Prelims point: Coral Bleaching

15.   Challenges with nuclear waste: How is nuclear waste generated?"

Context:

How nuclear waste is created in nuclear reactors and the challenges of managing it. It explains the methods used to handle, store, and treat nuclear waste, including the reprocessing of spent fuel. **Challenges with nuclear waste**

What is nuclear waste:

·   Nuclear waste is the byproduct of nuclear reactors, like when uranium-235 splits into barium-144 and krypton-89. These leftover elements can't undergo fission, so they become waste. This waste is very radioactive and needs careful storage to avoid environmental harm.

The challenges with nuclear waste:

·   **Storage Duration:** Nuclear waste requires isolation for millennia, far longer than modern humans have existed.

·   **Accident Risks:** For instance, an accident at the Waste Isolation Pilot Plant in the U.S. in 2014 released radioactive materials.

·   **Environmental Impact:** Concerns about contamination, like in Germany's Asse

II salt mine, where nuclear waste possibly affected water reContext:s.

·   **Cost**: Managing nuclear waste is expensive, adding $1.6-7.1 per MWh to nuclear energy costs.

·   **Liquid Waste Management**: Challenges include how to safely treat and store liquid waste, as highlighted by issues with vitrification plants.

The best practices of nuclear waste management:

·   **Cooling and Dry Cask Storage**: Spent fuel is initially cooled underwater for decades, then transferred to dry casks for safer, long-term storage.

·   **Liquid Waste Treatment**: Treatment and controlled release into the environment, like Japan's disposal of Fukushima's treated water into the Pacific Ocean.

·   **Geological Disposal:** Burying waste underground in special containers, away from human activities, in stable geological formations like granite or clay.

·   **Reprocessing**: Separating fissile material from spent fuel for further use, reducing waste volume and increasing fuel efficiency, as practiced in India's reprocessing plants in Trombay, Tarapur, and Kalpakkam.

How does India handle its nuclear waste:

·   **Reprocessing Plants:** India has facilities in Trombay, Tarapur, and Kalpakkam. Trombay reprocesses fuel for plutonium production, while Tarapur and Kalpakkam handle spent fuel from power reactors.

·   **On-Site Management:** Nuclear power stations in India manage low and intermediate-level waste on-site, treating and storing it in specialized facilities.

·   **On-Site Management**: Nuclear power stations in India manage low and intermediate-level waste on-site,

treating and storing it in specialized facilities.

·   **Operational Challenges:** There are concerns about the efficiency of these plants. For example, the delays in the PFBR project suggested operational issues at Tarapur and Kalpakkam, with a combined capacity factor of around 15%.

·   **Future Complications:** Handling waste from the PFBR will introduce new challenges due to its unique fission product and transuranic element composition.

UPSC Prelims & Mains point: Nuclear waste

16.   Global Methane Tracker 2024
Context:

According to the International Energy Agency's (IEA) Global Methane Tracker 2024, methane emissions from fuel usage in 2023 nearly reached their highest level ever, totaling 120 million tonnes (Mt).

Context:-DownToEarth

About Global methane Tracker

1.   It is an annual report released by the International Energy Agency (IEA).

2.   It uses the latest data on methane emissions from the energy sector and includes new scientific studies, measurements, and satellite data.

The Key findings of the Global Methane Tracker 2024:

·   **Record-high methane emissions:**

a.   In 2023, methane emissions from fuel use were nearly the highest

ever, reaching 120 million tonnes (Mt). This represents a slight increase compared to 2022.

b. Out of the 120 Mt of methane released into the atmosphere, approximately 80 million tons came from only 10 countries.

·   **Top emitters**– The United States tops the list in methane emissions from oil and gas operations, with Russia following closely. Meanwhile, China leads in emissions from coal operations.

·   **Additional emission**– Bioenergy, produced from plant and animal waste, resulted in an additional 10 million tons of emissions.

·   **Emission Trends**– Although studies indicate that emissions are declining in certain areas, the overall emissions remain excessively high to achieve the world's climate objectives.

·   **Actions needed:**

a. The world must reduce methane emissions from fossil fuels by 75% by 2030 to meet the Paris Agreement target of limiting warming to 1.5°C.

b. The IEA estimated that this goal would require about $170 billion in spending. This is less than 5 percent of the income generated by the fossil fuel industry in 2023.

Note- Methane contributes to about 30% of the global temperature increase since the preindustrial era. The energy sector, covering oil, natural gas, coal, and bioenergy, makes up more than one-third of human-caused methane emissions.

UPSC Prelims point: Global Methane Tracker

SCIENCE AND TECHNOLOGY

1.   Lancet study on Global Obesity rates

Context:

According to Lancet study on Global Obesity rates, the obesity rates among children and adolescents worldwide have increased four times from 1990 to 2022. Meanwhile, obesity rates among adults have more than doubled.

The key findings of the Study:

THE OBESITY MAP						
India				**World**		
	1990	**2022**			**1990**	**2022**
Men	1.1	26		Men	67	374
Women	2.4	44		Women	128	504
Boys	0.2	7.3		Boys and girls (total)	31	160
Girls	0.2	5.2				
Source: Lancet				*All figures in million*		

Source- The Indian Express

· **Study conducted by–** NCD Risk Factor Collaboration (NCD-RisC), in collaboration with the World Health Organization (WHO).

Note– NCD Risk Factor Collaboration (NCD-RisC) is a global network of health scientists offering thorough and prompt data on risk factors for non-communicable diseases (NCDs)

· **Worldwide Figures–** More than one billion people worldwide are living with obesity. Specifically, in 2022, there were 159 million children and adolescents, as well as 879 million adults, who were obese.

India's findings

· **Children and adolescents–** The obesity rate for girls rose from 0.1% in 1990 to 3.1% in 2022, while for boys, it increased from 0.1% to 3.9%.

Note– In terms of obesity rates among girls and boys, India ranked 174th globally in 2022.

· **Adults–** Among women, the obesity rate surged from 1.2% in 1990 to 9.8% in 2022, while among men, it rose from 0.5% to 5.4%.

· **Methodology used:**

a.   More than 1,500 researchers from 190+ countries analyzed weight and height data from over 220 million individuals aged five and older.

b.   They used body mass index (BMI) to study global changes in obesity and underweight from 1990 to 2022.

· **Significance of the study:**

a.   This discovery is important given India's existing high rates of non-communicable diseases, including heart disease, strokes, and diabetes.

b.   Obesity significantly increases the risk of developing these diseases, including Type 2 diabetes in teenagers, at an early age.

Note– Obesity, as per the World Health Organization (WHO), refers to an excessive accumulation of fat that can be harmful to health. A body mass index (BMI) over 25 is considered overweight, and over 30 is classified as obese.

2.   India's first indigenously developed hydrogen fuel cell ferry

Context:

Prime Minster recently launched India's first indigenously developed hydrogen fuel cell ferry. It was manufactured by the Cochin Shipyard Limited (CSL) under the Harit Nauka initiative.

Key features:

Source- The Indian Express

· **Design–** It is a 24-meter catamaran which can accommodate 50 people in its air-conditioned passenger area. The accommodation is made of high-quality fiberglass reinforced plastic, resembling metro train coaches.

· **Propulsion–** This boat uses a 50-kilowatt PEM (proton-exchange membrane) fuel cell along with Lithium-Ion Phosphate batteries. PEM fuel cells have the advantage of quickly adjusting their output to match power demands.

· **Energy Context:–** This boat has five hydrogen cylinders that hold 40kg of hydrogen, providing support for eight hours of operations. Additionally, the vessel is equipped with a 3-kilowatt solar panel.

   Note– A hydrogen fuel cell creates electricity using the chemical energy in hydrogen and only emits pure water, without releasing pollutants.

· **Indigenous components–** CSL developed the vessel automation system and power management system. The hydrogen fuel cell system was developed by KPIT Technologies, Pune, in collaboration with the Council of Scientific and Industrial Research Labs.

· **Significance:**
   a. **Environment Friendly–** It produces zero emissions or noise, and it is energy-efficient. It will also make urban mobility smooth and easy.

   b. **Low maintenance cost–** Since it has no moving parts, the ferry needs less maintenance than combustion vessels.

Harit Nauka Initiative:
   1. In January 2024, the shipping ministry unveiled the Harit Nauka guidelines for inland vessels.
   2. According to the guidelines, all states must aim to use green fuels for 50% of inland waterways passenger fleets within the next decade and 100% by 2045.
   3. This aims to cut greenhouse gas emissions according to the Maritime Amrit Kaal Vision 2047.

UPSC Prelims point: Harit Nauka initiative

3.   Haemophilia A

Context:

   Recently, India has conducted the first human clinical trial of gene therapy for 'haemophilia A' at Christian Medical College – Vellore.

Haemophilia A:
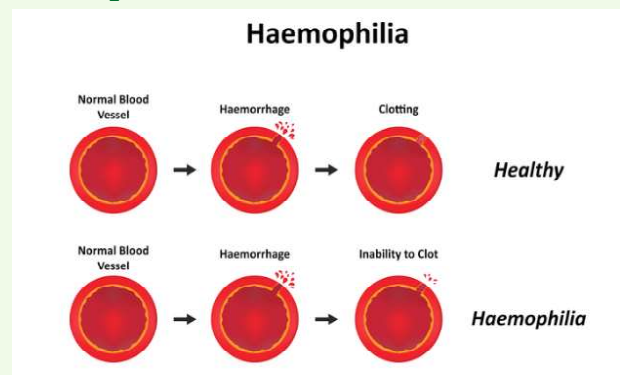
Source- Medicineplus

· **About–** It is a genetic bleeding disorder caused by a deficiency in clotting factor VIII (blood-clotting protein), which is necessary for blood clotting.

· **Sex-linked:**
   a. It is a sex-linked disorder determined by the X and Y chromosomes. The gene for hemophilia is found on the X chromosome.

b. Hemophilia is much more common in males than in females.

· **Symptoms–** Prolonged bleeding after injuries, surgeries, or spontaneous bleeding into muscles and joints.

· **Treatment:**

a. It includes replacement therapy, where clotting factor concentrates are infused into the bloodstream to assist blood clotting.

b. Other treatments may involve medications to encourage clotting or surgery to mend bleeding-related damage.

Most common types of Hemophilia :

1. Hemophilia A (Classic Hemophilia)– This type is caused by a lack or decrease of clotting factor VIII.

2. Hemophilia B (Christmas Disease)– This type is caused by a lack or decrease of clotting factor IX.

About Gene therapy:

· Gene therapy is the introduction, removal or change in genetic material (typically means DNA and RNA) in the cells of a patient to treat an inherited or developed disease.

· Gene therapy replaces a faulty gene or adds a new gene in an attempt to cure disease or improve human body's ability to fight disease.

UPSC Prelims point: Gene therapy & Haemophilia

4.   Roen olmi mushroom

Context:

Researchers in Goa have claimed to have synthesized gold nanoparticles from the Roen olmi mushroom. It is a wild mushroom species that is widely consumed as a delicacy in the coastal state.

Roen olmi mushroom:

Source- Times of India

· **About:**

a. It is a mushroom of the Termitomyces species.

b. It grows on termite hills and is called 'roen olmi' in Goa.

c. It is a wild mushroom loved by Goans and eaten during the monsoons.

· **Association with Termites–** These mushrooms rely solely on their association with termites for growth and cannot exist independently.

a. Termites provide mushrooms the organic material they need to grow.

b. Termites eat them to obtain enzymes and nitrogen.

· **Habitat–** It is found only in the Western Ghats, where the dense forests and high humidity create perfect breeding conditions

· **Significance–** It is crucial as a strong decomposing fungus in forests and grasslands, turning 50% of dead plant material into nutrient-rich soil.

· **Concern–** It's over exploitation can cause outbreak of new forest diseases such as Kyasanur Forest Disease (KFD)

Termitomyces species

· All Termitomyces species are edible and valued for their texture, flavour, nutrients, and health benefits.

· They have a variety of beneficial antioxidant and antimicrobial properties.

Other types of Mushrooms in Goa

Local Name	Name derived from their characteristics
Khut olmi	Shape- Long stem
Fugo olmi	Balloon-shaped
Tamdi olmi	Red colour
Shith olmi	Fruiting season- winter

UPSC Prelims point: Roen olmi mushroom

5. Benefits and Challenges of the Genome India Project – Decoding the script

Context:

`The Genome India Project, which sequenced 10,000 Indian genomes to create a reference for Indian DNA.

Genome India Project:

· The Genome India Project, backed by the Department of Biotechnology, is a significant scientific initiative that has successfully sequenced the complete genomes of 10,000 Indian individuals. This project aims to construct a comprehensive reference for the Indian human genome.

Benefits of the Genome India Project:

· **Creation of a Reference Genome:** The project has sequenced 10,000 Indian genomes, creating a crucial reference for understanding the genetic diversity in India.

· **Disease Research:** It aids in identifying genetic links to diseases. For instance, the discovery of the MYBPC3 genetic variant, prevalent in 4% of Indians, is associated with heart failure.

· **Personalized Medicine:** The findings can lead to tailored healthcare solutions based on genetic information.

· **Understanding Genetic Complexity:** It sheds light on the unique genetic makeup due to India's diverse population and endogamy practices, helping in future genetic research and healthcare planning.

The challenges faced by the Genome India Project:

· **Representative Diversity:** Sequencing 10,000 genomes is not fully representative of India's over one billion diverse population, which includes around 4,500 population groups.

· **Complex Genetic Landscape:** India's history of endogamy within castes has preserved rare, potentially harmful genetic variants, complicating genetic analysis.

· **Monogenic Disease Focus Limitations:** Most diseases are not monogenic (caused by a single gene), challenging the simplification of genetic research to direct disease links.

· **Affordability of Treatments:** Even when genetic causes of diseases are identified, treatments, if available, are often too expensive for many who need them.

· **Data Accessibility:** Ensuring that the project's findings are widely accessible and not confined to academic circles is a significant challenge.

Way forward:

· To progress, Genome India should sequence more than 10,000 genomes, reflecting India's diverse population. The project must engage various experts, including scientists, students, and ethicists, ensuring findings are not confined to academia. This approach will deepen India's self-understanding and foster broader applications of the research.

UPSC Prelims and Mains point: India Genome Project

6. Juice jacking

Context:

Recently, the Reserve Bank of India (RBI) has issued a warning to mobile phone users regarding the risk of juice jacking.

About Juice jacking:

- **Term coined–** The term "juice jacking" was first coined in 2011 by investigative journalist Brian Krebs.
- **About–** It is a form of cyberattack where hackers manipulate public USB charging ports to steal data from connected devices by infecting them with malware or altering hardware.
- **Hackers target–** Hackers utilize this attack to steal users' passwords, credit card details, addresses, and other sensitive data stored on the targeted device.

Source- The Hindu Businessline

- **Common places of incidents–** This form of attack has become increasingly concerning, with reported incidents occurring in various public spaces including airports, hotels, and shopping centers.
- **RBI directive–** RBI stressed the need to safeguard personal and financial data when using mobile devices.

How to prevent from such cyber attacks:

- Mobile phone users should utilize their personal chargers and refrain from connecting their devices to public USB ports.
- Additionally, employing a virtual private network (VPN) and ensuring devices are equipped with the latest security updates can aid in reducing the vulnerability to cyberattacks.

UPSC Prelims point: Juice jacking

7. Very Short-Range Air Defence System (VSHORADS)

Context:

The Defence Research and Development Organisation (DRDO) successfully conducted two flight tests of the Very Short-Range Air Defence System (VSHORADS) missile. The test was conducted from the Integrated Test Range off Odisha's Chandipur.

About Very Short-Range Air Defence System (VSHORADS):

PIB

Aspects	Description
About	The VSHORADS missile system is a fourth generation man-portable air-defense system (MANPADS).**Note:** MANPADS (Man-portable air-defense systems) are portable surface-to-air missiles designed to be operated by an individual or a small team.
Developed by	Research Centre Imarat (RCI) in collaboration with other DRDO laboratories and other industry partners
Features	1. It is meant for neutralising low altitude aerial threats at short ranges. 2. The missile has many novel technologies including Dual-band IIR Seeker, miniaturised Reaction Control System and integrated avionics.

3. It is more portable and lightweight than the other missile systems in the Army's arsenal.

UPSC Prelims point: Very Short-Range Air Defence System (VSHORADS)

8. India's plan for semiconductor production- India's microchip leap: Now for the hard part

Context:

India's plan to set up three semiconductor foundries with foreign partnerships, including a major project by Tata Electronics and Taiwan's Powerchip.

India's plan for semiconductor production:

- India aims to establish three semiconductor foundries with private sector involvement. A significant partnership involves Tata Electronics and Taiwan's Powerchip Semiconductor Manufacturing Corporation.
- The total investment in these semiconductor projects exceeds 71.5 trillion.
- The objective is to create a comprehensive semiconductor ecosystem in India, covering design, fabrication, assembly, testing, marketing, and packaging.
- These efforts are driven by the desire for strategic autonomy in semiconductor technology and to reduce reliance on foreign chip suppliers.

The potential benefits of India's plan for semiconductor production:

- **Establishing a semiconductor ecosystem:** The foundries will develop a full value chain from design to packaging.
- **Strategic autonomy:** Reducing dependence on foreign chip suppliers enhances India's self-sufficiency in key technologies.
- **Economic boost:** The combined investment of over 71.5 trillion is expected to strengthen India's global economic ranking.

- **Job creation:** The project will generate about 20,000 direct and 60,000 indirect jobs, impacting employment positively.
- **Technological advancement:** By producing chips of 28 nanometres, these foundries will contribute to India's technological progress, although they are behind the global curve of 3nm chip production.

The challenges of India's plan for semiconductor production:

- **Limited technological edge:** The plants will initially produce 28 nanometre chips, while the global standard is advanced at 3 nanometres.
- **Modest job creation:** The projects are expected to generate 20,000 direct and 60,000 indirect jobs, which may not significantly impact the unemployment crisis.
- **Skilled labor shortage:** Concerns about the availability of adequately trained workers for these specialized operations.
- **Infrastructure challenges:** Questions about the assurance of uninterrupted power and clean water supply, crucial for semiconductor manufacturing.
- **Geopolitical risks**: U.S. export controls and India's reliance on high-tech imports could affect operations. Additionally, domestic political factors, especially with investments focused in Gujarat, which lacks a strong tech base, present potential business risks.

Way forward

- To progress, India should focus on developing more advanced semiconductor technology, addressing the skilled labor gap, ensuring stable infrastructure, and navigating geopolitical challenges. Strengthening partnerships, like the one with Tata Electronics and Taiwan's Powerchip, is also key to enhancing India's semiconductor industry.

9.   Semiconductor fabrication

Context:

Recently, the Union Cabinet approved three semiconductor plant proposals. Two semiconductor plant will be set up in Gujarat and one will be set up in Assam.

About Semiconductor fabrication

·   **About:** Semiconductor device fabrication is the intricate process used to create integrated circuits (ICs) which are the building blocks of modern electronic devices.

·   The fabrication process is the toughest part in manufacturing semiconductors, as it requires clean rooms to maintain sterile conditions and prevent contamination by air particles.

·   It's a very lengthy process to manufacture the final product of a semiconductor, which includes around 500 and 1,500 steps in the overall manufacturing process of semiconductor wafers.

·   This process also conducts various inputs like silicon wafers, commodity chemicals, speciality chemicals along with clean water supply and uninterrupted power supply.

·   **Technology used in semiconductor fabrication:** In semiconductor fabrication, various technologies come together to transform raw silicon wafers into intricate integrated circuits (ICs).

·   **Wafer Preparation**: The process starts with a wafer, which is typically made of pure single-crystal semiconducting material (usually silicon). The wafer undergoes several steps, including thermal oxidation and thin-film deposition, gradually forming electronic circuits.

·   **Photolithography**: This step involves masking and exposing the wafer to light. This creates intricate patterns on its surface which define the locations of transistors, capacitors, and other components.

·   **Ion Implantation**: In the process of Ion Implantation, high-energy ions are precisely implanted into the wafer to alter its electrical properties. This step helps create doped regions necessary for transistor operation.

·   **Etching**: In this process, unwanted material is selectively removed from the wafer using chemical etchants. This process shapes the various components.

·   **Thin-Film Deposition**: Thin layers of materials (such as silicon dioxide or metal) are deposited onto the wafer which serve as insulators, conductors, or gate oxides.

·   **Annealing and Activation**: In this process, the wafer is heated to activate dopants and repair any damage caused during previous steps. The wafer's surface is polished to achieve a flat and smooth finish.

·   **Die Singulation**: The wafer contains multiple integrated circuits, known as dies. In this process, these dies are separated from the wafer in a process called die singulation or wafer dicing.

10.   MethaneSAT- A satellite to track Methane

Context:

MethaneSAT, a satellite designed to track and measure methane emissions globally, was launched aboard a SpaceX Falcon9 rocket from California.

MethaneSAT:

Source- eoPortal

Aspect	Details

About

It is an Earth observation satellite designed to monitor and study global methane emissions to aid in combating climate change.

Launch date

March 4, 2024

Agencies Involved

The Environmental Defense Fund (EDF), Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.

Function

1. MethaneSAT will make 15 orbits around the Earth each day, observing the activities of the oil and gas industry.

2. It will generate extensive data to indicate "where methane originates, who is accountable, and whether emissions are increasing or decreasing over time."

3. The data collected by MethaneSAT will be freely available to the public in almost real-time.

Features

1. The satellite, equipped with a high-resolution infrared sensor and a spectrometer, which will help fill important data gaps.

2. It can detect changes in methane levels as small as three parts per billion in the atmosphere, allowing it to identify smaller Context:s of emissions compared to previous satellites.

3. MethaneSAT also boasts a broad camera perspective, covering approximately 200 km by 200 km, enabling it to detect larger emitters known as "super emitters".

Data Analysis

The data collected will be analyzed using cloud computing and AI technology developed by Google, which is a mission partner. This data will be publicly accessible through Google's Earth Engine platform.

The significance:

· The launch of MethaneSAT coincides with a time when the world is adopting stricter methane management policies.

· Over 150 countries signed the Global Methane Pledge in 2021, aiming to reduce their combined methane emissions by at least 30% from 2020 levels by 2030.

· Additionally, at COP 28, more than 50 companies pledged to significantly reduce methane emissions and routine flaring. MethaneSAT will support these efforts by assisting in achieving these targets.
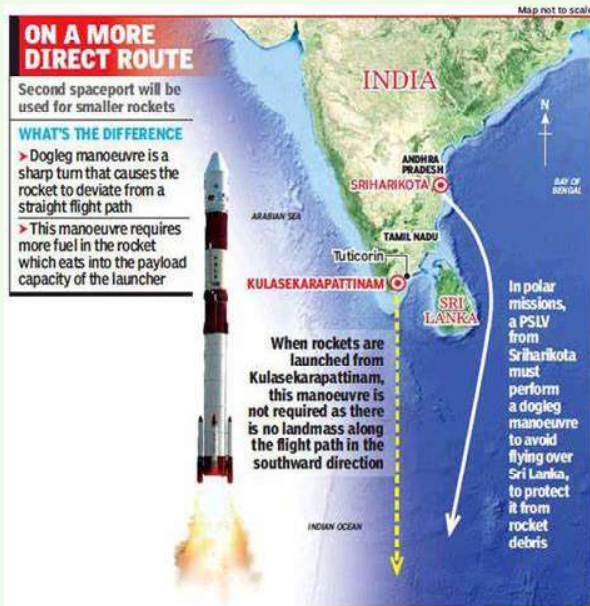
UPSC Prelims point: MethaneSAT

11. India's second spaceport at Kulasekharapattanam (TN)

Context:

Prime Minister Narendra Modi laid the foundation stone for the country's second spaceport at Kulasekarapattinam in in Tuticorin district.

About India's second spaceport

Defenceforum.india

- **About:** A spaceport or cosmodrome is a site for launching or receiving spacecraft, by analogy to a seaport for ships or an airport for aircraft.
- **Location:** India's second spaceport is being established in Kulasekara-pattinam, a coastal village in the Thoothukudi district of Tamil Nadu.

  Note: Kulasekharapatnam situated in the Thoothukudi district, is an ancient port town dating back to the 1st century AD.
- The new spaceport is dedicated to Small Satellite Launch Vehicles (SSLVs) developed by the private sector.
- Indian Space Research Organization launched a Rohini sounding rocket from a mobile launch pad to mark the beginning of work at the site.

Reasons for launching sites are generally located on the Eastern Coast:

- The eastern coast location offers several benefits for rocket launches:
- **Fuel Savings**: Launching rockets from the eastern coast harnesses Earth's rotation, granting them initial velocity and reducing fuel requirements for orbit.

- **Equatorial Position**: The spaceport's proximity to the Equator further enhances launch efficiency. Rockets launched closer to the Equator receive an additional boost from the Earth's rotational speed, making it easier to reach orbit.

The new spaceport advantages over the Sriharikota facility:

- **Eliminating Diversion Due to Sri Lanka's Airspace**:
- Currently, rockets launched from the existing spaceport at Sriharikota (Andhra Pradesh) must head east before turning south. This trajectory is necessary to avoid flying over the airspace of neighboring Sri Lanka.
- Rockets can now take a more direct path without encroaching on Sri Lanka's airspace, enhancing launch efficiency.
- **Proximity to Isro's Propulsion Complex**:
- Isro's propulsion complex is located in Mahendragiri, which is much closer to Kulasekarapattinam (approximately 88 km) than to Sriharikota (approximately 780 km).
- This proximity facilitates the transportation of rocket components, reducing both time and cost.

UPSC Prelims point: Cosmodrome & Kulasekarapattinam

12. Dry ice
Context:

Recently, Dry ice mistakenly provided at a party in a Gurugram restaurant caused severe injuries to people's mouths and food pipes, leading to hospitalization.

About Dry Ice

Source: DownToEarth

· **About:** Dry ice is solid carbon dioxide (CO_2) formed by compressing and cooling carbon dioxide gas.

· **Difference between regular ice and dry ice:** Unlike regular ice, which melts into liquid water, dry ice undergoes sublimation, transitioning directly from a solid to a gas without going through a liquid phase. This sublimation process releases large volumes of CO_2 gas.

· **Applications:**

· Dry Ice is commonly used as a cooling agent for food products like ice cream, frozen desserts etc.

· Dry ice is also used for applications such as preservation and for creating special effects like fog or smoke.

· It also finds use in industrial cleaning processes like dry ice blasting.

· **Hazardous nature:**

   a. Dry ice can be hazardous if ingested because dry ice sublimates rapidly and when it comes in contact with moisture in the mouth or digestive tract it releases CO_2 gas which could pose a danger of breathlessness (hypercapnia).

   b. It may also cause burns, bloating, vomiting, and even life-threatening complications like stomach or intestinal perforation.

UPSC Prelims point: Dry ice

13. Frontier Technology Labs (FTLs)

Context:

· Atal Innovation Mission (AIM) under NITI Aayog and Meta have collaborated to set up Frontier Technology Labs (FTLs) in schools deemed strategically important.

· This partnership aims to make frontier technologies accessible to everyone and encourage innovation among students.

About the Frontier Technology Labs (FTLs):

Souce: India Today

· **About:**

   a. The FTL is an advanced version of the Atal Tinkering Lab, featuring cutting-edge infrastructure that includes all elements found within the Tinkering Lab.

   b. It enables students to innovate using technologies such as Artificial Intelligence, Augmented & Virtual Reality, Blockchain, Cybersecurity, Robotics, 3D Printing, and Internet of Things.

· **Component of Meta's Education to Entrepreneurship initiative–** The FTLs are a component of Meta's Education to Entrepreneurship program, which started in September 2023. This initiative aims to connect students, youth, workers, and micro-entrepreneurs with advanced technologies, bringing digital skills to the grassroots level.

· **Funding–** Meta will finance the FTLs

· **Knowledge Partner–** Atal Innovation Mission

· **About Atal Tinkering Lab (ATL)**

· **About**– It is an initiative by the Atal Innovation Mission, NITI Aayog with the aim of establishing Atal Tinkering Laboratories (ATLs) in schools across India.

· **Objective-** To foster curiosity, creativity and imagination in young minds; and inculcate skills such as design mindset, computational thinking, adaptive learning, physical computing etc.

· **Current Status**– Till date, AIM has established 10,000 Atal Tinkering Labs (ATLs) in schools across 722 districts throughout India.

What are frontier technologies:

· **About**-It is defined as potentially disruptive technology that can address large-scale challenges. It is an intersection where radical forward-thinking and real-world implementation meet.

· **Examples**– AI, robotics, 3D printing, Internet of Things among others.

UPSC Prelims point: Frontier technologies

14. Penicillin G manufacturing to restart in India

Context:

India has decided to resume the manufacturing of the common antibiotic Penicillin G after nearly 3 decades.

About Penicillin G:

· It is a medication used to manage and treat a wide range of infections. This is very effective against gram-positive and gram-negative cocci bacterial infections. For Ex- Susceptible bacterial infections in the stomach.

· It is the active pharmaceutical ingredient (API) used in manufacturing several common antibiotics.

Source-Adobe Stock

About Active Pharmaceutical Ingredients:

· **Description**– These are the active ingredients contained in a medicine. It is that part of the medicine that produces the intended therapeutic effects. For example, in a painkiller, the active ingredient relieves pain.

· **Quantity**– A Small amount of the API is required to produce the effect, and so the medicine contains only the required amount of the API.

· **Largest production**– China is one of the largest producers of Key Starting Material (KSM) and APIs in the world.

Why did penicillin manufacturing stop in India:

· It was phased out of production because of subsidy-driven cheaper Chinese products flooding the market.

· The Drug Prices Control Order ensured that more companies went for cheaper imported products. The Drug Prices Control Order regulates the price of essential medicines in India.

What is a Production Linked Incentive (PLI) Scheme:

· **Objective**– To promote the domestic manufacturing of APIs, drug intermediates and key starting materials (KSMs).

· **Incentive**– The scheme envisages support of 20% for first four years, 15% for fifth year, and 5% for sixth year on eligible sales of fermentation-based bulk drugs such as antibiotics, enzymes, and hormones such as insulin.

· **Implementation–** The scheme will be implemented through a Project Management Agency (PMA) to be nominated by the Department of Pharmaceuticals.

NOTE– After PLI scheme, there has been a decline in the imports of APIs.

UPSC Prelims point: Penicillin G manufacturing

15. IndiaAI Mission

Context:

The Union Cabinet recently approved the IndiaAI Mission with a budget of Rs 10,372 crore for the next five years. This initiative includes funding for private companies to establish AI computing capacity in the country.

IndiaAI Mission:

Source- TimesofIndia

· **Background–** During the Global Partnership on Artificial Intelligence (GPAI) Summit in 2023 held in New Delhi, the Prime Minister of India declared India's intention to initiate an artificial intelligence (AI) mission.

· **Aim–** The mission aims to create a comprehensive ecosystem, drive AI innovation, and encourage AI use across sectors. It prioritizes skill development and socio-economic change, in line with the vision of 'Making AI in India' and 'Making AI Work for India'.

· **Nodal Ministry–** Ministry of Electronics and Information Technology

· **Implementing Agency**: 'IndiaAI' Independent Business Division (IBD) under Digital India Corporation (DIC)

The key components of the mission:

· **IndiaAI Compute Capacity**-The objective is to develop an AI compute infrastructure comprising 10,000 or more Graphics Processing Units (GPUs) via partnerships between the public and private sectors. Additionally, an AI marketplace will be developed to provide AI as a service and pre-trained models to AI innovators.

Note– The AI compute infrastructure will be implemented through a public-private partnership with 50% viability gap funding. If compute prices decrease, the private entity must increase compute capacity within the same budget to meet growing demand

· **IndiaAI Innovation Centre–** The Center will create and use its own Large Multimodal Models (LMMs) and domain-specific foundational models in critical sectors.

· **IndiaAI Datasets Platform–** It will simplify access to high-quality, non-personal datasets for AI innovation. It aims to offer Indian startups and researchers a single platform for easy access to non-personal datasets.

· **IndiaAI Application Development Initiative–** This initiative will promote AI applications in critical sectors by addressing problem statements obtained from Central Ministries, State Departments, and other Context:s.

· **IndiaAI FutureSkills–** It aims to reduce barriers to entry into AI programs and will expand AI courses at undergraduate, master's, and Ph.D. levels. Additionally, Data and AI Labs will be established in Tier 2 and Tier 3 cities across India to offer basic level courses.

· **IndiaAI Startup Financing–** This pillar aims to help and speed up deep-tech

AI startups, offering them easier access to funding for futuristic AI projects.

· **Safe & Trusted AI**– This pillar will support the execution of responsible AI projects, which involves creating indigenous tools and frameworks.
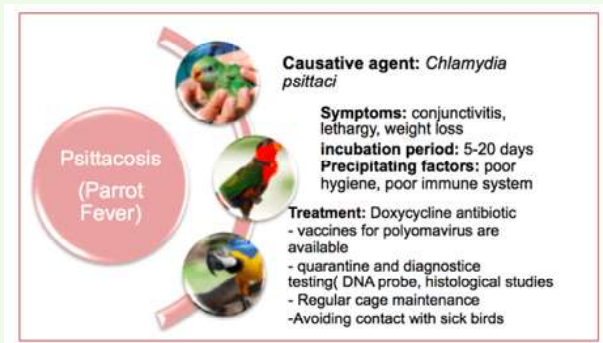
UPSC Prelims & Mains point: India AI Mission

16. Parrot fever disease
Context:

Psittacosis also known as parrot fever has killed five people across Europe this year.

About Parrot fever

Source: Agorapets

Aspect	Details

Description

It is a respiratory bacterial infection.

Caused by

Bacterium Chlamydophila psittaci (C. psittaci)

Is it contagious?

1. It is basically a parrot disease. However, it can also spread to humans. It can be transmitted by inhaling particles from infected parrot feathers, their secretions or dry faeces.
2. There is a low chance of human-to-human transmission of the disease.

Affected regions

It has affected Denmark, Netherlands, Austria, Germany and Sweden.

Symptoms

1. People infected with parrot fever may have pneumonia like symp-

toms including cough, difficulty breathing, and chest pain.2. Fever, muscle ache, headache and gastronomical symptoms may also appear.

Prevention

1. Prevention includes proper hygiene and avoiding contact with sick birds.
2. Awareness and precautionary measures are vital to curbing transmission.

Treatment

Treatment involves antibiotics and supportive care such as adequate rest, hydration, and a nutritious diet can support the body's immune system in fighting the infection.
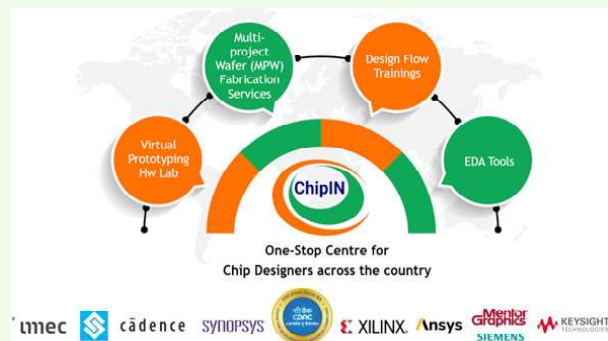
UPSC Prelims point: Parrot fever disease

17. ChipIN Centre
Context:

The Ministry of Skill Development and Entrepreneurship, Electronics and IT started the ChipIN Centre at the Centre for Development of Advanced Computing (C-DAC).

About ChipIN Centre

Source: PIB

· **About:** It has been setup at C-DAC as one-stop centre for providing the centralized access to chip design and fabrication services to domestic start-ups and academia across the country.

· **Aim:** To bring the chip design infrastructure at doorsteps of semiconductor design community in the country.

· **Facilities:** ChipIN facilitates number of services:

· It is a centralized design facility hosting the most advanced tools for entire chip design cycle going up to 5nm or advanced node.

· It also provides aggregate services for fabrication of design at foundries and packaging.

· It is also equipped with a virtual prototyping hardware lab.

About Semiconductor chip

· A semiconductor chip (integrated circuit (IC) or microchip) is a compact electronic device comprising numerous interconnected electronic elements.

· It consists of components like transistors, resistors, and capacitors, semiconductor chips which are fabricated on a small piece of semiconductor material, typically silicon.

· These semiconductors serve as minuscule electrical switches, capable of toggling electrical currents on and off.

UPSC Prelims point: Semiconductors

18. Mission Divyastra: Agni-V Missile with MIRV Technology

Context:

India recently conducted a test of the Agni-V ballistic missile with MIRV technology. The test was carried out by the Defence Research and Development Organisation (DRDO) as part of Mission Divyastra.

Mission Divyastra

Mission Divyastra is the first test flight of India's indigenously developed Agni-5 missile with MIRV technology, led by the DRDO.

Agni missiles:

· **About–** Agni missiles are long-range ballistic missiles designed for surface-to-surface attacks and capable of carrying nuclear payloads.

· **First Variant-**The first missile in the series, Agni-I, was developed as part of the Integrated Guided Missile Development Programme (IGMDP) and tested in 1989.

· **Designated as a special Program**:

a. After its success, the Agni missile program became independent from the IGMDP due to its strategic significance.

b. It was designated as a special program in India's defense budget and received sufficient funds for further development.

Agni missiles variants and range

AGNI MISSILE FAMILY

▫ Agni-I Medium range ballistic missile, 700 – 1200 km range.
▫ Agni-II intermediate range ballistic missile, 2,000-2,500 km range.
▫ Agni-III intermediate range ballistic missile, 3,000 - 5,500 km range.
▫ Agni-IV intermediate range ballistic missile, 3,200-3,700 km range.
▫ Agni-V intercontinental ballistic missile, 5,000 km range.
▫ Agni-VI intercontinental ballistic missile, 10,000 km range (under development)

Source- World-defense

About Agni V missile

Source- TimesofIndia

· **About–** Agni-V is India's inter-continental ballistic missile (ICBM), developed by the Defence Research and Development Organisation (DRDO).

· **Range–** The range of Agni-V extends beyond 5,000 kilometers and can reach most parts of China.

· **Propulsion–** It's a three-stage missile powered by solid fuel. Using composite motor casing in the second and third stages makes it lighter, improving both its range and payload capacity.

· **Latest variant with MIRV tech–** The missile latest variant features MIRV technology, which was developed over five decades ago and is possessed by only a few countries.

About MIRV technology:

· **Full form–** MIRV stands for Multiple Independently Targetable Re-entry Vehicle.

· **About–** It is a missile technology that enables one missile to carry multiple nuclear warheads, each capable of hitting different targets.

· **Other Countries equipped with this technology–** Currently, the United States, Russia, China, France, and the United Kingdom possess MIRV-equipped missiles. These missiles can be launched from either land-based platforms or submarines at sea.

UPSC Prelims point: MIRV technology

19. Hyodol Robot

Context:

The South Korean government has deployed about 7,000 Hyodol dolls to provide companionship and medication reminders for senior citizens.

About Hyodol Robot

Developed by– South Korean company Hyodol

· **About–** It is an AI care robot that offers customized care for seniors.

· **Features:**

· These look like cuddly soft toys, but have advanced features like language processing, emotion recognition, and music playback which provides engagement for seniors.

· It has safety features to alert when there's no movement detected for a while.

· It offers touch interaction, check-ins, health coaching, voice messages, 24-hour reminders, music, quizzes, exercise tips, and more.

· The robot gathers data by interacting with people and having conversations with them. It can engage in full conversations and includes a companion app and web platform for caretakers to monitor from a distance.

· Furthermore, caregivers who have access to the app can send and receive voice messages, create group announcements, and monitor motion detection.

· The robot also checks users' health twice daily with health Q&A sessions. It collects verbal and nonverbal data from users around the clock using AI.

· It can connect to smart home devices and has a user-friendly interface for everyone to use easily.

Technology used

· The AI robot can engage in conversations because it has a large integrated language model.

20. Graphics processing unit (GPU)

Context:

The Graphics Processing Unit (GPU), which has seen a surge in demand as the global community eagerly embraces the latest advancements in AI technology.

Graphics Processing Unit (GPU):

Source- The Hindu

- **About–** It is a computer chip that rapidly calculates mathematical operations to display graphics and images. Similar to a central processing unit (CPU), a GPU is a chip component found in computing devices.
- **Purpose–** GPUs serve purposes in both professional and personal computing. Initially, they were designed for rendering 2D and 3D images, animations, and videos, but now they have a wider use.
- **Applications-** Creative content creation, video editing, high-performance computing (HPC), and artificial intelligence (AI).
- **Key difference between CPU and GPU:**
  a. One key difference is that the GPU is designed to accelerate and manage graphics tasks, displaying graphics content on devices such as PCs or smartphones.
  b. A regular modern CPU has around 8 to 16 "cores," each handling tasks one by one. In contrast, GPUs have thousands of smaller cores that work simultaneously, or "in parallel," for swift processing.

How does a GPU work:

- GPUs operate through parallel processing, employing multiple processors to manage different segments of a single task.
- A GPU also includes its own RAM to store the data it processes. This RAM is tailored to handle the large volumes of information required for intense graphics tasks.
- In graphics applications, the CPU instructs the GPU to render the graphics content displayed on the screen. The GPU carries out instructions simultaneously and rapidly to showcase content on the device, a process known as the graphics or rendering pipeline.

UPSC Prelims point: Graphic Processing Unit

21. March 14-Pi day

Context:

March 14 is celebrated worldwide as Pi Day, commemorating the well-known approximation (3.14) of the mathematical constant Pi. On Pi Day, mathematicians raise awareness about their field through lectures, museum exhibits, and pie-eating contests

Why March 14:

- The value of Pi is approximately 3.14 or expressed as the fraction 22/7.
- When the date is written in the month/day format (3/14), it corresponds to the first three digits of this mathematical constant.

History of its celebration

- Physicist Larry Shaw marked the first Pi Day celebration in 1988 at the San Francisco Exploratorium.
- In 2009, The U.S. House of Representatives designates March 14 (3/14) as National Pi Day.
- In 2019, UNESCO's 40th General Conference officially recognized Pi Day as the International Day of Mathematics.

What is Pi (ð):

- Pi, often denoted by the Greek letter ð, is a well-known mathematical constant.
- It signifies the ratio of a circle's circumference to its diameter, which remains constant regardless of the circle's size.

· Pi is an irrational number, meaning it has an infinite decimal expansion without any repeating pattern.

Discovery of Pi

· Pi has been known for nearly 4,000 years and was discovered by the ancient Babylonians and ancient Egyptians.

· Greek mathematician Archimedes of Syracuse (287 B.C. to 212 B.C.) was among the earliest to calculate pi.

· The mathematical constant pi is represented by the symbol 'ð,' which was created by British mathematician William Jones in 1706.

Applications:

Pi finds utility in a broad array of mathematical and scientific computations, encompassing fields such as geometry, trigonometry, calculus, and beyond.

22.   Devin AI

Context:

Cognition has introduced the world's first AI software engineer- Devin AI.

About Devin AI

Indian express

· **About:** It is the world's first AI software engineer.

· **Features:** It is capable of doing various advanced functions:

· Devin possesses an array of advanced capabilities in software development, including coding, debugging, and problem-solving.

· It uses machine learning algorithms to continuously learn and improve its performance, thus adapting to new challenges over time.

· Devin can build and deploy apps end-to-end and even train and fine-tune its own AI models.

· Devin can handle difficult engineering projects from beginning to end, making many decisions along the journey.

· Cognition can remember important details, learn from experience, and fix errors on its own.

· It actively collaborates with users by reporting progress in real-time, accepting feedback, and working alongside engineers through design choices as needed.

· **Performance:** On the SWE-Bench benchmark, Devin outperformed previous state-of-the-art models.

· It correctly resolved 13.86% of issues unassisted, compared to 1.96% without assistance from the previous model.

· Devin significantly augments efficiency and speed within software development processes, automating repetitive tasks, generating code instantly, and reducing development expenses.

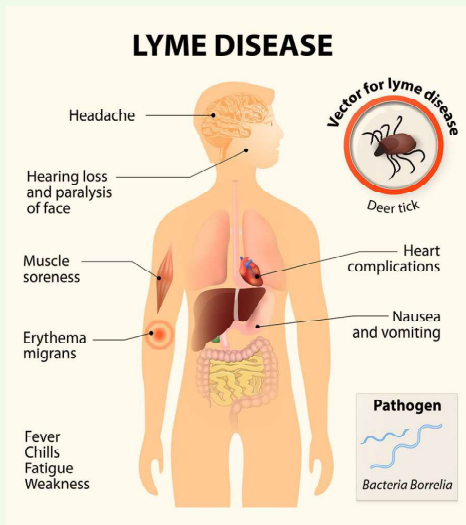· It is immune to human errors or inconsistencies.

UPSC Prelims point: Devin AI

23.   Lyme disease

Context:

Recently, a case of Lyme disease has been reported in the Ernakulam district of Kerala.

About Lyme disease

LYME DISEASE

Source: momjunction

Aspect	Details

Description

It is a vector-borne infectious disease.

Caused by

Bacterium Borrelia burgdorferi

Transmission

1. It is primarily transmitted to humans through the bite of infected black-legged ticks, often referred to as deer ticks.

Affected regions

1. It's commonly found in forests and grasslands around the world, especially when the weather is warmer.
2. It is most commonly reported in North America, Europe, and some parts of Asia.

Symptoms

High-grade fever, pain and swelling in his knee, neck stiffness and superficial ulcers over the scrotum

Treatment

1) The standard treatment for Lyme disease is an antibiotic taken as a pill.
2) The treatment usually lasts 10 to 14 days. Treatment may be longer depending on symptoms.

UPSC Prelims point: Lyme Disease

SOCIAL ISSUES

1. **"Leaked papers and cheating scandals: How to fix India's exams.**

Context:

The article discusses the employment of unfair means in examination process in India and how can it be minimized. Issue of Cheating in Exams in India

. B**ackground** – UP government has ordered the cancellation of the UP Police Constable Recruitment Examination-2023 after allegations of paper leak.

The provisions of The Public Examinations Prevention of Unfair Means Act:

. The act imposes severe penalties on persons resorting to unfair means.They will be imprisoned for not less than 3 years whereas the service providers (who conduct the exam on behalf of the government) are liable for fines upto Rs 1 crore, apart from prison sentences.

The limitation of statutory measures taken by government:

. **Low conviction rate-**Many states like Gujarat, Rajasthan, UP, Uttarakhand, Jharkhand, Chhattisgarh, AP and Odisha have legislation that criminalizes cheating.However,there have been no convictions so far under these Acts.

The challenges in conducting exams in India:

. **Off-line examination: –**

a) L**ogistical Issue-T**here are loopholes in setting question papers and their printing and transport to examination canters.

b) **Lack of auditing-**These processes are not audited by any knowledgeable agency.

. **Online examination: –**

a) **Lack of effective evaluation-**The authorities have started outsourcing the conduct of online exams to service providers. The technology provided by them is not adequately tested.

b) **Vulnerability to cyber-**attack-There is inadequate knowledge or expertise in the government machinery to test the robustness of the IT systems being deployed. This leaves the system vulnerable to hackers and organized cyber criminals.

The way forward:

. **Diminish the importance of exams–** There are high premiums like social recognition and rewards attached with qualification of exams, so there is a need to reduce the importance of the examination itself. This will discourage cheating in examinations. For ex-admissions into the best foreign universities take the qualifying exam scores as just one of the inputs to decide the candidature of students.

. **Dedicated investigating body–** There is a need to create a special investi-gation agency that has the power to investigate all types of examination offences and quickly bring culprits to justice.

Mains point:The challenges and implica-tions of the current examination system for students in India.

2. **"Patanjali controversy and the lure of a magic cure: Safety standards dangerously fail consumers.**

Context:

The article highlights the lack of safety standards for Ayurvedic medicines and the issue of misleading advertisements. Issue of patent and proprietary medicine in India – Lure of a magic cure

. **Background –** The Supreme court has criticized Patanjali Ayurveda, for making misleading claims in advertisements about its products curing diseases.

The difference between classical and patent and proprietary medicine:

. The difference between classical medicine and patent and proprietary medicine is explained in Drugs and Cosmetics (D&C) Act.

. **Classical ASU medicine-It** refers to drugs that are manufactured strictly in accordance with the authoritative ancient texts (granthas or samhitas) listed under the D&C Act.

. **Patent and Proprietary (P&P) medicine-I**t refers to manufacture of ASU drugs by modifying the classical recipe and introducing new combinations. Patanjali and several other companies have been proactively promoting their Patent and Proprietary (P&P) drugs.

The regulations regarding Patent Proprietary (P&P) drugs:

. Advertising drugs intended to treat or cure certain diseases is prohibited under Drugs and Magic Remedies (Objectionable Advertisements) Act 1954, which applies to all systems of medicine.

. Drug manufactures have to follow the Good Clinical Practice Guidelines issued by the Ministry of Ayush. This is done to document evidence of safe and effective use.

. To obtain a manufacturing license, citing scientific sources is essential and if unavailable, pre-clinical or clinical trials are required to be produced.

. The Ayush Ministry had mandated the registration of all medical research projects with the Indian Council of Medical Research's CTRI — Clinical Trials Registry of India database without distinction between allopathic or ASU (Ayurveda, Siddha and Unani) research.

The issues associated with the regulation of Patent and Proprietary (P&P) drugs:

. **Limitation of Drugs and Magic Remedies Act–** It does not have the power to check the license of products, to check if the products are evidence based or not.

. **Misconception in minds of consumers– T**he consumer assumes that all ASU products are natural and consequently safe. Attracted by advertisements, consumer purchases P&P medicine over the counter without consulting any Vaidya or medical practitioner.

. **No requirement of license-**Unlike allopathic drugs, selling ASU medicine requires no sale license and all pharmacists, and even general stores and groceries, can sell these drugs without any knowledge of the drug use and dosage.

. **Lax implementation by state drug controllers–** The two Drug Acts are not administered properly by state drug controllers due to vacancies or mishandling by non-qualified persons.

The way forward:

. The country needs a unified structure and system for regulating and administering the licensing, manufacture, sale, and drug advertising of ASU drugs.

Mains point:The issues in regulation of Ayurvedic drugs? What steps can be taken to address the issue.

3. Challenges Faced by Women in Reverting to Maiden Name After Divorce.

Context:

Recently a woman has filed a petition to the Delhi High Court. The petition is against the process of reverting to woman's maiden name (or removal of husband's surname) after divorce. Challenges Faced by Women in Reverting to Maiden Name After Divorce.

Name Change After Divorce

The government guidelines for reverting to maiden name after divorce:

. As per the government notification, women need to provide divorce papers or a no-objection certificate (NOC) from husband to revert to her maiden name, after divorce.

. The process depicts gender bias. It also highlights legal and societal challenges women face in asserting their identity.

The issues in present process of reverting to maiden name after divorce:

. **Violates fundamental rights:** The process violates fundamental rights under Articles 14 (Right to Equality), 19 (Right to Freedom), and 21 (Right to Life and Personal Liberty) of the Indian Constitution.

. **Gender disparity:** The case sheds light on the broader issue of gender disparities in India, where women are often marginalized and their roles and capabilities circumscribed by patriarchal norms.

. **Legal disparity:** A Woman, who decides, not to use here husband's surname, face several legal challenges. For example, in opening a joint bank account, or during a child's admission in school, or applying for a passport.

Way forward:

. The United Nations identifies gender equality and the empowerment of women and girls as the most significant human rights challenge globally.

. Therefore, there is a need for legislative support and social frameworks that promote gender equality and respect for individual choices, free from discrimination and bias.

Prelims point:challenges Faced by Women in Reverting to Maiden Name After Divorce

4. Green jobs and the problem of gender disparity.

Context:

The article highlights the issue of inadequate representation of women in Green jobs. Gender parity in Green jobs.

Green jobs and Gender disparity

A Green Job:

. As per International Labour Organization, it is a decent job that contributes to preservation or restoration of the environment. They can be in traditional sectors such as manufacturing and construction or in new segments linked to green energy.

The status of women participation in green jobs market:

. Despite tremendous increase in India's renewable energy capacity, women comprised only 11% of workers in the solar rooftop sector.

. The Annual Survey of Industries 2019-20 shows that women workers are mostly concentrated in industries such as apparel, textile, leather, food, and tobacco.

The reasons behind their low participation in the green jobs market:

. **Gender Stereotypes-**There is a general belief that women are unsuitable for certain technical roles. There are also concern about the safety of women.

. **Low participation in manufacturing and engineering sector–** In India, Women constitute 42.7% of the total STEM graduates (science, technology, engineering, and mathematics). However, they represent only 30.8% in engineering, manufacturing and construction programmes which are the key sectors for green transition.

. **Lack of robust data– Th**ere are no periodic gender analysis and gender statistics on green jobs.

. **Lack of proper training–** A Skill Council for Green Jobs study indicated that 85% of the training for green skills was imparted to men. Due to lack of green skill, their participation is restricted.

. **Lack of women friendly policies–** There are no dedicated Gender-focused financial policies and products which could cater to the requirements of women entrepreneurs.

The significance of enhanced women participation in green jobs:

. **Foster gender equality–** It can address the gender biases in the Indian labour market and improve women's labour force participation rates.

. **Sustainable economy–** It would help in unlocking the benefits of a low-carbon and environmentally sustainable economy.

The way forward:

. **Plugging data gap–** There is a need to conduct gender analysis, collecting gender statistics on green jobs through periodic labour force surveys to emphasize women's role in the green transition.

. **Address structural barriers-T**here is a need to address issues like low participation of women in manufacturing and engineering field and lack of adequate skill development training for women.

. **Women friendly policies–** The government should devise ways to ensure collateral-free lending, financial literacy training to unlock the true potential of women. COP 28's 'Gender-Responsive Just Transitions and Climate Action Partnership' with a focus on improved data, targeted finance, and skill development is a step in right direction.

. **Leadership –** There is a need to bring more women into leadership positions to incorporate gender-specific needs in low-carbon economy.

. M**ulti-stake holder participation–** There should be partnerships across government, private sector and other stakeholders to ensure the availability of technology and finance for women entrepreneurs and workers.

. Businesses must recognize the centrality of gender justice and ensure equity throughout the process of green transition by mitigating existing barriers.

Mains point:The women under-represented in green jobs. What steps can be taken to address this issue.

5. The National Credit Framework makes education system more flexible.

Context:

This article discusses a new education system in India, where students can earn and transfer credits for various learning activities, including online courses and internships, through a

digital platform called Academic Bank of Credits (ABC). This approach, part of the National Credit Framework (NCrF), makes education more flexible and diverse.

The National Credit Framework (NCrF):

· **About–** It is a unified meta-framework that accumulates credits earned from school education, higher education, and vocational and skill education. Under this system, credits will be assigned to academic learning.

· **It consists of three verticals:**
   a. National School Education Qualification Framework (NSEQF)
   b. National Higher Education Qualification Framework (NHEQF)
   c. National Skills Qualification Framework (NSQF).

The challenges with traditional credit systems in India:

· **Credit Incompatibility Issues:** A major challenge in India has been the incompatibility of credits among different educational institutions and programs, hindering student mobility.

· **Limited Flexibility in Pre-NEP Systems:** The Choice Based Credit System (CBCS) and semesterisation, implemented before the National Education Policy (NEP), lacked sufficient flexibility. They did not fully enhance the options available to students or provide adequate autonomy for diverse academic pursuits.

· **Criticism of the CBCS:** The CBCS was criticized for not allowing students to explore a wide range of learning objectives, highlighting a need for a more adaptable credit-earning approach.

The Importance of Credits in Education:

· **Measuring Learning Effort and Achievement:** Credits are fundamental units for capturing effort and achievement in academic activities, including both classroom learning and extracurricular activities. It will promote a broad and enriched learning environment.

· **Monitoring Academic Progress:** They enable students to systematically track their academic progress towards educational objectives.

· **Facilitating Educational Flexibility:** Credits aid in informed decision-making, especially when transferring between institutions or programs, enhancing the educational experience.

· **Centralized Credit Management:** The Academic Bank of Credits (ABC) platform serves as a centralized repository for academic credits, streamlining their accumulation, storage, and retrieval. This system significantly enhances the flexibility and diversity of education.

The initiatives has India taken towards credit systems:

· I**ntegrates various educational levels:** Launched in April 2023, the National Credit Framework (NCrF) integrates various educational levels, including school, higher, and vocational education from grades I to VIII.

· **Establishing the Academic Bank of Credits (ABC):** A digital platform for managing credit accumulation, storage, and retrieval, ABC supports the NCrF. It has seen significant participation, with over six crore students registered.

· **Collaboration with Stakeholders:** The NCrF was developed in consultation with various stakeholders, including

the IIT Council, ensuring a comprehensive approach.

Way forward

. The way forward involves fully embracing the National Credit Framework (NCrF) and the Academic Bank of Credits (ABC), ensuring seamless credit transfer and flexible learning pathways. This approach will enhance educational diversity, accommodate varied student needs, and align with contemporary interdisciplinary learning demands.

Mains point:The role of the Academic Bank of Credits (ABC) and the National Credit Framework (NCrF) in addressing the challenges and limitations faced by India's previous credit systems.

6.   Linkage of malnutrition and obesity in India

Context:

The article highlights the significance of investing in adolescent girls and young women health to minimize possibilities of obesity and diabetes in future.

The obesity and how is it measured:

. **Obesity-** According to the World Health Organization (WHO), it is defined as an abnormal or excessive accumulation of fat that poses health risks.

It is measured in following ways-

. Adults over the age of 20 years

. **Obese**- Body Mass Index (BMI) of 30 kg/m2 or more.

. **Underweight**- Body Mass Index (BMI) is less than 18 kg/m2.

. **NOTE-** BMI is a person's weight in kilograms divided by the square of height in meters.

The malnutrition and obesity linked in India:

. **Deposition of fat-** Indians deposit most fat in and around the abdomen. The highest glucose levels were found in individuals having the lowest BMI and the highest waist measurement. Indians

have low BMI and high glucose-insulin metabolism. This increases their vulnerability to obesity and diabetes.

. **Intrauterine Programming-**This can be defined as the impact of malnutrition on babies when they are still in the mother's womb. This alters the structure and function of the developing organs, reducing their capacity to cope with stress. For ex-overnutrition, inactivity, psycho-social stress, migration etc.

. **Role of blood chemistry– T**he blood chemistry of an Indian newborn may indicate future risk of diabetes. Due to lack of adequate and balanced nutrition from the mother, there is reduction in the deposition of protein-rich tissues. Many of these mothers also suffer from **"gestational diabetes"** which adds to the baby's fat and increases the chances of obesity and diabetes.

The way forward:

. There is a need to improve maternal health, nutrition, and metabolism. This will ensure that the babies born will be more resilient and enjoy a healthy life.

Mains point:The maternal health and vulnerability to obesity linked in India.

7.   Financial literacy is key: Beti bachao, Vitt sikhao.

Context:

The article discusses the importance of financial literacy for women in India. It highlights progress in women's education and survival rates since 1947, but stresses the need for women to learn about finance. It suggests financial knowledge is crucial for true empowerment and mentions government initiatives supporting this goal.

The current status of women's empowerment in India:

. Since 1947, there's been significant progress in reducing female infant mortality and increasing women's literacy. Female infant mortality

dropped from 213 to 31 deaths per 1,000 live births between 1972 and 2021.

. Female literacy rose from 54.2% in 2001 to 65.5% in 2011.

The financial literacy important for women:

. **Essential for True Empowerment:** Financial literacy is viewed as a crucial step beyond basic education for women's empowerment, enabling them to make informed financial decisions.

. **Gap in Financial Knowledge:** Women lag behind men in both financial knowledge and access to financial products, highlighting the need for focused financial education.

The financial empowerment be achieved:

. **Women-Specific Banking Services:** Initiatives like women-only bank branches introduced by nationalized banks can create a more accessible financial environment for women.

. **Leveraging Digitalization:** The digitization of the economy allows women to access financial products from home, promoting convenience and wider reach.

. **Government-led Programs:** The Jan Dhan Yojana, which makes direct cash transfers to women's bank accounts, helps in enhancing financial inclusion among women.

. **Supporting Women Entrepreneurs:** Platforms like the Open Network for Digital Commerce help women entrepreneurs market their products online, boosting their financial independence and skills.

. **Self-Help Groups:** Models like Kerala's Kudumbashree demonstrate the effectiveness of self-help groups in empowering women financially.

Way forward

. The way forward involves integrating financial education into existing programs like **'Beti bachao, Beti padhao'.** This will ensure women not only receive education but also learn vital financial management skills, crucial for their complete empowerment and equal participation in India's development.

Mains point:The strategies and initiatives aimed at promoting financial empowerment among women in India.

8. **Women in India's justice system- Can a justice system without women bring justice to women?**

Context:

The article discusses the low number of women in India's justice system, including police, judiciary, and prisons. It highlights the gender gap, lack of women in high positions, and institutional biases against women, emphasizing the need for more gender diversity.
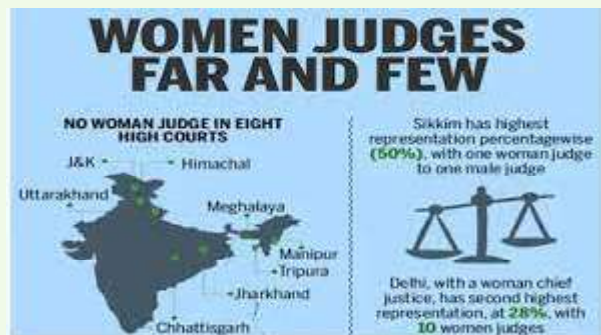
The current state of women in India's justice system:

. **Low Female Representation**: The India Justice Report indicates only about 300,000 women in the justice delivery system, highlighting a wide gender gap.

. **Judiciary Disparity:** Women hold 35% of subordinate judiciary roles, drop to 13% in high courts, and there are only three women judges in the Supreme Court.

. **Lack of Leadership Roles:** No woman has ever been the Chief Justice of India, and only 16 women have served as chief justices in high courts in over 70 years.

. **Human Rights Commissions' Gender Gap:** As of 2022, only six commissions had female members or secretaries, with no women chairpersons.

. **Policing and Prison Administration:** Women constitute about 12% of police personnel and 14% in prison administration, mainly in lower ranks.

It important to reduce the gender gap in India:

. The absence of a female Chief Justice of India and few women in high court chief justice's positions limits women's influence in judiciary leadership.

. The minimal presence of women in human rights commissions could lead to insufficient attention to gender-specific issues.

. With low representation in police and prison administration, there's a risk of gender biases affecting law enforcement and prison management.

. The overall low representation of women implies an institutional bias, potentially impacting justice delivery and equality within the system.

Way forward:

. **Promote Women to Leadership Roles**: Encourage more women to take up roles like Chief Justice of India and high court chief justices, going beyond the current limited history of 16 women chief justices in over 70 years.

. **Address Systemic Biases:** Tackle institutional biases that hinder women's advancement, learning from the exceptions of successful women like Justice Ruma Pal and Kiran Bedi.

. **Empower Women in Policing and Prisons**: Increase the percentage of women in police and prison administration beyond the current 12% and 14%, respectively, to ensure a balanced and inclusive approach in these sectors.

. **Implement Supportive Policies**: Develop and enforce policies that support gender equality and address the specific needs and challenges faced by women in the justice system.

Mains point:The current state of gender representation in India's justice system and the importance of reducing the gender gap.

9. **Gender equality as the plank of sustainable development.**

Context:

This article discusses how gender equality and women's involvement are crucial for sustainable energy development.

The gender equality important in energy development:

. **Crucial Role in Household Energy Management:** Women primarily manage household energy for cooking, heating, and lighting, showing their integral role in energy consumption.

. **Impact of Energy Inequality on Health:** Limited access to clean energy forces women to use harmful alternatives like biomass, leading to significant health risks and deaths.

. **Economic and Environmental Benefits:** Gender equality in the energy sector can drive economic growth and environmental sustainability.

. **Innovative Solutions and Productivity**: Increasing women's participation in energy can lead to more innovative approaches, improved productivity, and enhanced social outcomes.

. **Global Impact:** Closing the gender gap could boost global GDP by trillions of dollars, showing the vast potential of women's empowerment in energy.

The challenges in achieving gender equality in the energy sector:

. **Limited Energy Infrastructure Access:** Women often receive energy access last, impacting their ability to manage household energy needs efficiently.

. **Reliance on Harmful Energy Sources:** Due to inadequate access to modern

energy, women resort to using traditional sources like biomass and kerosene. This leads to significant health risks, with household air pollution causing 3.2 million premature deaths annually, 60% of whom are women and children.

. **Low Representation in the Energy Sector:** The energy sector is not gender diverse. Only 32% of employees in renewable energy and 22% overall are women, compared to 48% in the global workforce. In India, only 10% of technical energy jobs are held by women.

. **Educational and Skill Disparities:** Women face barriers in accessing education and training needed for technical roles in energy, further widening the gender gap.

Way forward:

. **Change Perceptions:** Alter societal views on women's roles in the energy sector to recognize their potential as key contributors.

. **Mainstream Gender in Energy Policies:** Integrate gender considerations at sub-national, national, and international policy levels to ensure women's needs and contributions are addressed.

. **Support Women-led Initiatives:** Back programs like the Women at the Forefront and the Energy Transitions Innovation Challenge (ENTICE), which encourage women's entrepreneurship in sustainable energy.

. **Promote Educational and Skill Development:** Facilitate women's access to education and training, especially in technical fields within the energy sector.

. **Implement Distributed Renewable Energy (DRE) Projects**: Utilize DRE to provide quick, affordable energy access, reducing women's workload

and enhancing productivity, as seen in initiatives like Solar Mamas in India.

Mains point: The gender equality contributes to sustainable energy development and what challenges hinder achieving gender equality in the energy sector.

10. **The relationship between nutrient intake and household expenses.**

Context:

The article highlights the need for complementing Nationwide studies on dietary patterns with the findings of Household Consumer Expenditure Survey to better address the issues of malnutrition in India.

HOUSEHOLD CONSUMER EXPENDITURE SURVEY

The findings of the recently released Household Consumer Expenditure Survey (HCES):

. It points to a shift in the food consumption pattern of Indian household. The household consumption basket consisted of three major categories — food items, consumables and durable goods.

Some of the important observations are as follows-

. **The average monthly per capita expenditure (MPCE)** was Rs 3,773 for rural and Rs 6,459 for urban households. The percentage of expenditure on food items has decreased below 50 % for urban as well as rural areas.

. **Significance of this data–** For the first time the share of expenditure on food for rural households has come down to less than 50 per cent. This means that

they can spend more on other consumer goods, indicating a better standard of living.

. The proportionate share of expenditure on cereals has also come down along with better dietary diversity including other food groups.

The limitation of MPCE data:

. The MPCE data shows only the consumption pattern of the entire household and does not throw light on intra-household allocation of food. It does not talk about food and nutrient intake of different sections of the population. For ex-women, adolescent girls.

. It does not talk about actual intake of salt and sugar, because there is no way of estimating the amount of salt and sugar consumed through processed foods and beverages. This assumes importance in the backdrop of increasing risk of obesity, diabetes and hypertension in India.

The way forward:

. **Awareness-** Front-of-pack food labelling should make consumers aware of the composition of processed foods, with a traffic light system indicating high salt, fat or sugar content.

. Nutrition literacy will educate consumers about healthy eating practices and lifestyle modification.

. **Imposition of health tax –** Since the practice of eating out is increasing in India, NITI Ayog has recommended imposition of 20% to 30 % health tax in addition to GST on high fat, sugar and salt (HFSS) foods.

. **Expanding the basket of low-cost eateries run by the government–** Along with affordable nutritious meals, there should also be availability of healthy alternatives such as buttermilk in these centres.

. **Provision of nutritious food in Anganwadi –**There should be greater

allocation of vegetables in government Anganwadi, and school noon meal schemes to promote healthy eating habits and improving nutrition.

. **Diversifying PDS basket –** The PDS basket should be expanded to provide greater diversity of foods to ensure nutritional security.

. Along with steps, there is an urgent need for diet surveys to estimate the actual nutrient intake.

Mains point: Highlights the steps that can be taken to ensure nutritional security in India.

11. Gender equality as the plank of sustainable development"

Context:

This article discusses how gender equality and women's involvement are crucial for sustainable energy development.

The gender equality important in energy development:

. **Crucial Role in Household Energy Management**: Women primarily manage household energy for cooking, heating, and lighting, showing their integral role in energy consumption.

. **Impact of Energy Inequality on Health**: Limited access to clean energy forces women to use harmful alternatives like biomass, leading to significant health risks and deaths.

. **Economic and Environmental Benefits**: Gender equality in the energy sector can drive economic growth and environ-mental sustainability.

. **Innovative Solutions and Productivity**: Increasing women's participation in energy can lead to more innovative approaches, improved productivity, and enhanced social outcomes.

. **Global Impact**: Closing the gender gap could boost global GDP by trillions of dollars, showing the vast potential of women's empowerment in energy.

The challenges in achieving gender equality in the energy sector:

. **Limited Energy Infrastructure Access**: Women often receive energy access last, impacting their ability to manage household energy needs efficiently.

. **Reliance on Harmful Energy Sources:** Due to inadequate access to modern energy, women resort to using traditional sources like biomass and kerosene. This leads to significant health risks, with household air pollution causing 3.2 million premature deaths annually, 60% of whom are women and children.

. **Low Representation in the Energy Sector:** The energy sector is not gender diverse. Only 32% of employees in renewable energy and 22% overall are women, compared to 48% in the global workforce. In India, only 10% of technical energy jobs are held by women.

. **Educational and Skill Disparities:** Women face barriers in accessing education and training needed for technical roles in energy, further widening the gender gap.

Way forward:

. **Change Perceptions:** Alter societal views on women's roles in the energy sector to recognize their potential as key contributors.

. **Mainstream Gender in Energy Policies:** Integrate gender considerations at sub-national, national, and international policy levels to ensure women's needs and contributions are addressed.

. **Support Women-led Initiatives:** Back programs like the Women at the Forefront and the Energy Transitions Innovation Challenge (ENTICE), which encourage women's entrepreneurship in sustainable energy.

. **Promote Educational and Skill Development:** Facilitate women's access to education and training, especially in technical fields within the energy sector.

. **Implement Distributed Renewable Energy (DRE) Projects:** Utilize DRE to provide quick, affordable energy access, reducing women's workload and enhancing productivity, as seen in initiatives like Solar Mamas in India.

Mains point:Discuss how gender equality contributes to sustainable energy development and what challenges hinder achieving gender equality in the energy sector.

MISCELLANEOUS ISSUES

1.   Challenges in PM-JANMAN housing Scheme.

Context:

The lack of data regarding the estimated total population of the Particularly Vulnerable Tribal Groups (PVTG) has posed challenges in implementing the housing component of the PM-JANMAN Scheme.

The challenges in PM-JANMAN housing Scheme:

.   The Union government aimed to sanction 2.5 lakh out of nearly five lakh planned houses by February 15. However, after the deadline passed, only 1.59 lakh houses received sanction.

.   **Absence of reliable population data for PVTG:**

The Union government depended on the PM Gati Shakti portal to estimate the total population of PVTG across the country.

.   State governments were asked to conduct their surveys, but some States have submitted incomplete surveys data to the center.

.   There are several discrepancies between the data held by the Tribal Affairs Ministry and that of the states.

.   The states stated that the population of PVTG is never static. Since these groups are among the most vulnerable, they regularly migrate in search of employment.

The PM-JANMAN Scheme:

Specifications	Details
Full Form	Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan
Announced in	Budget 2023-24
Aim	To improve the socio economic conditions of Particularly Vulnerable Tribal Groups (PVTGs).
Type	It comprises both Central Sector and Centrally Sponsored Schemes.
Implementation	The scheme will be implemented by Nine Ministries which also includes the Ministry of Tribal Affairs.
Features	The scheme comprises of 11 critical interventions which are part of existing schemes. These are: Pucca housing, road connectivity, piped water supply, mobile medical units, hostel construction, Anganwadi Centers, skill development centers, electricity connections, solar street lighting, Van Dhan Vikas Kendra, and mobile towers.

The Particularly Vulnerable Tribal Groups (PVTG):

Specifications	Details
Who are they	PVTGs are the more vulnerable groups among tribal communities
Origin	In 1973, the Dhebar Commission created Primitive Tribal Groups (PTGs) as a separate category, which are less developed among the tribal groups. In 2006, the Government of India renamed the PTGs as PVTGs.
Criteria for Identifying PVTGs	1)Pre-agricultural level of technology 2)Low level of literacy 3)Economic backwardness 4)A declining or stagnant population.
PVTGs in India	1) Currently, there are 75 PVTGs in India. Of these, the highest number of PVTGs are found in Odisha (13), followed by Andhra Pradesh (12). 2) The largest PVTG is Odisha's Saura community.

Prelims point:PM-JANMAN housing Scheme

2.   India-Malaysia Bilateral Maritime Exercise: Samudra Laksamana.

Context:

The Indian Navy and the Royal Malaysian Navy are participating in the bilateral exercise 'Samudra Laksamana'. It is taking place from February 28 to March 2, 2024, at or off Visakhapatnam.

About Exercise Samudra Laksamana:

Source- PIB

. **Aim**– The exercise aims to strengthen ties and improve coordination between the Indian and Royal Malaysian Navy.

. **Command under it is conducted**– Visakhapatnam-based Eastern Naval Command

. **Edition**– This is the 3rd Edition of this exercise which includes harbor professional interactions followed by the operational phase at sea.

. **Harbour Phase**– The exercise will involve a harbor phase featuring professional interactions, Subject Matter Expert Exchange on topics of mutual interest, social events, interactions with locals, and various sports activities.

. **Sea Phase–** During the sea phase, units will collectively refine their skills while performing various sea operations.

. **Participating ships-** Indian Naval Ship Kiltan and Royal Malaysian Ship KD Lekir

Note– INS Kiltan is a Kamorta-class anti-submarine warfare corvette of the Indian Navy.

Prelims point:Exercise Samudra Laksamana

3.   170 People "Executed' In Attacks On 3 Villages In Burkina Faso: Report"

Context:

As per a report, 170 people were executed in an attack on 3 villages namely Komsilga, Nodin and Soroe in Yatenga province in Burkina Faso.

About Burkina Faso

Source- BBC

Source- Wikipedia

. **Location**
   1. Burkina Faso lies between the Sahara desert to the north and the Gulf of Guinea to the south.
   2. It is situated south of the loop of the Niger River.

. **Neighbours**
   1. Burkina Faso shares borders with six neighbouring countries: Benin, Ivory Coast, Ghana, Mali, Niger, Togo.
   2. It has no coastline or maritime claims.

. **Capital**
   Ouagadougou

. **Terrain**
   1. Most of central Burkina Faso is a savanna plateau.
   2. The plateau features fields, brush, and scattered trees.

3. The highest peak in Burkina Faso is Ténakourou.

. **Language**
   1. Burkina Faso is a multilingual country.
   2. It boasts a rich linguistic tapestry with approximately 70 languages spoken, of which about 66 are indigenous.

. **Religion**
   Majority of the people in Burkina faso follow Islam.

. I**nternational Affiliatio**n
   1. Burkina Faso enjoys good relations with the European Union.
   2. Burkina Faso is a member of the ICC and has a bilateral immunity agreement with the United States military, as covered under Article 98.

. **Distant features**
   1. Burkina Faso is home to several game preserves, including Arly, Nazinga, and W National Park.
   2. These preserves harbor diverse wildlife, including lions, elephants, hippopotamuses, monkeys, common warthogs, and antelopes.
   3. The endangered painted hunting dog (Lycaon pictus) was once found in Burkina Faso but is now considered extirpated.

4. DefConnect 2024: Raksha Mantri launches ADITI scheme to promote innovations in critical & strategic defence technologies"

Context:

Recently, the Acing Development of Innovative Technologies with iDEX (ADITI) scheme was launched by Department of Defence Production.

Firstpost

About Acing Development of Innovative Technologies with iDEX (ADITI):

Aspect	Details
Description	The Department of Defence Production launched the ADITI scheme during the annual Defence Innovation Event – DefConnect 2024 held in New Delhi.
Objective	To create an ecosystem for fostering innovation and technology development in defence and aerospace by engaging industries, startups and academia.
Concerned Ministry	Department of Defence Production
Funding	Rs 750 crore
Salient features	1. ADITI specifically focuses on promoting innovations in critical and strategic defence technologies such as ammunition and explosives, armaments, aerospace, surveillance, sensors, propulsion, artificial intelligence and other future technologies. 2. It aims to develop about 30 deep-tech critical and strategic technologies in the proposed timeframe.3. Technology Watch Tool aims to bridge gap between armed forces' requirements and innovation ecosystem capabilities
Benefits	The ADITI scheme is expected to provide major benefits to the defence

sector in multiple ways:i) The scheme will reduce import dependence in critical technologies and help India to be self-reliant.ii) The development of advanced technologies will boost defence capabilities and prepared-ness.iii) The collaboration between industry, academia and armed forces will lead to knowledge enhance-ment.iv)The scheme will stimulate technology innovation, manufacturing and job creation.

Prelims point:the Acing Development of Innovative Technologies with iDEX (ADITI) scheme

5. INS Jatayu: India's new naval base in Lakshadweep

Context:

The Indian Navy will officially commission Naval Detachment Minicoy as INS Jatayu on March 6, 2024.

INS Jatayu:

- **About:**
  a. INS Jatayu is the second Naval base in Lakshadweep after INS Dweeprakshak in Kavaratti, which was commissioned in 2012.
  b. The existing Naval Detachment Minicoy, which is under the operational command of the Naval Officer-in-Charge (Lakshadweep), will be commissioned as INS Jatayu.

  Note– Naval Detachment Minicoy was set up in the 1980s.

- **Facilities–** A naval detachment provides administrative, logistics, and medical support. INS Jatayu will become a naval base with more facilities like an airfield, housing, and personnel once it gets the necessary clearances.

Its Significance:

- **Strategic location–** The establishment of INS Jatayu enhances Navy surveillance and operations. Situated on Lakshadweep's southernmost

island, Minicoy, overlooks vital Sea Lines of Communication (SLOCs) in the Arabian Sea. It provides a strategic vantage point for monitoring maritime traffic.

- **Note– Sea Lines of Communication (SLOCs)– I**t refers to the main maritime routes between ports, essential for trade, logistics, and naval activities.

- **Maritime Security and Operational Range–** The commissioning of INS Jatayu broadens the Navy's operational range, enhancing anti-piracy and anti-narcotics efforts in the Western Arabian Sea. It underscores India's commitment to maritime security in a vital area for global trade and energy supplies.

- **Geopolitical dynamics–** Given the changing geopolitical landscape, especially China's growing influence in the Indian Ocean region, the establishment assumes greater significance.

About the Lakshadweep Islands:

Source- Royal Maldives family

- Lakshadweep archipelago consists of 36 islands situated between 220 km and 440 km from Kochi. Only 11 of these islands are inhabited, covering a total area of just 32 sq km.

- The Lakshadweep islands are part of a series of coral islands in the Indian Ocean, stretching southward to the Maldives and the Chagos archipelago beyond the equator.

. Minicoy, the southernmost island of Lakshadweep, lies along crucial **Sea Lines of Communication (SLOCs),** the main global maritime pathways. These include **the Eight Degree Channel (between Minicoy and Maldives**) and the **Nine Degree Channel (between Minicoy and the main Lakshadweep islands).**

Prelims point:INS Jatayu

6. e-Kisan Upaj Nidhi.

Context:

Recently, the union Minister for Consumer Affairs, Food & Public Distribution, Commerce and Industry and Textiles launched 'e-Kisan Upaj Nidhi' (Digital Gateway).

The 'e-Kisan Upaj Nidhi':

Aspect   Details

About

It is a digital gateway of Warehousing Development and Regulatory Authority (WDRA).

Objective

To ease the farmers' warehousing logistics and aid the farmers in receiving fair prices for their produce.

Nodal ministry

It is an initiative of the Department of Consumer Affairs, Ministry of Consumer Affairs, Food, and Public Distribution and Commerce and Industry and Textiles

Salient features

1) E-Kisan Upaj Nidhi' platform with its simplified digital process can ease the procedure of farmers' storage at any registered WDRA warehouse for a period of 6 months at 7% interest per annum.

2) It will integrate **e-Kisan Upaj Nidhi and e-NAM** to enables farmers to leverage interconnected markets, extending benefits beyond government Minimum Support Price (MSP).

Significance

This initiative with no collateral, extra security deposit policy aims to prevent distress sales by farmers, enabling better post-harvest storage opportunities.

Warehousing Development and Regulatory Authority (WDRA):

. **About–** WDRA operates as a statutory authority under the Department of Food and Public Distribution. Its headquarter is at New Delhi.

. **Established– It** was established in October 2010 under the Warehousing (Development and Regulation) Act, 2007.

. **Aim– t**o develop and regulate warehouses, promote negotiability of warehouse receipts, and facilitate orderly growth of the warehousing business in India.

Prelims point:The 'e-Kisan Upaj Nidhi

7. PM Modi unveils multiple metro projects, including Kolkata underwater corridor

Context:

Prime Minister Narendra Modi recently inaugurated India's first underwater metro line in Kolkata.

About India's first Underwater Metro line:

. **About–** This underwater Metro line is a part of the Howrah Maidan-Esplanade section of Kolkata Metro's East-West corridor.

· **Length of the section–** Howrah Maidan-Esplanade section is 4.8 km long and goes under the Hooghly River through India's first underwater transportation tunnel.

· **Tunnel specification-T**he tunnel is 13 meters below the riverbed and 33 meters below ground level. Its total length is 520 meters.

· **Connecting Places–** This section connects Kolkata and Howrah, located

on the east and west banks of the Hooghly River, respectively.

. **Deepest metro Station**-This section will also have the distinction of having the deepest metro station in India at Howrah, which is 30 meters deep.

History of Kolkata Metro:

. **About-It is India's first rapid transit system**, serving Kolkata and the wider Kolkata Metropolitan Region in West Bengal.

. **Started & Current Status**– It was first operationalized in 1984. As of January 2023, it is the second busiest and fourth longest metro network in India.

Key facts about Hooghly River:

. **About–** The Hooghly River, also called the Bhagirathi-Hoogly and Kati-Ganga River, is a major river in West Bengal.

. **Length–** It is a branch of the Ganges River, spanning approximately 260 kilometers.

. **Course:**

   a. It originates in Murshidabad, where the Ganga River divides into two branches.

   b. The branch that flows through Bangladesh is known as the Padma, while the other branch, the Hooghly, flows through a densely industrialized region of West Bengal.

. **Rivers drain into Hooghly–** Ajay, Falgu, Jalangi and Churni to the north and Rupnarayan, Mayurakshi, Damodar and Haldi to the south.

. **Important cities near it–** Jiaganj, Azimganj, Murshidabad, and Baharampur.

Prelims point: About India's first Underwater Metro line.

8.   Dying declaration.
Context:

Recently, Supreme court gave judgement on the matter of dying declaration.

About Supreme Court Judgement:

. The Supreme Court held that the conviction of the accused can be sustained solely based on the dying declaration if the declaration made by the victim inspires the confidence of the court and proves to be trustworthy.

. The victim must have been in a fit state of mind when providing the dying declaration. The court ensures that the statement was not a result of imagination or coercion.

About Dying Declaration:

. The Dying Declaration is the statement of a person who had died explaining the circumstances of his death.

. A dying declaration is considered credible and trustworthy evidence, based upon the general belief that most people who know that they are about to die, do not lie.

. **Section 32 of the Indian Evidence Act** deals with the cases related to that person who is dead or who cannot be found.

. Anyone can record the dying declaration of the deceased as per law. The law does not compulsorily require the presence of a Judicial or Executive Magistrate to record a dying declaration.

Prelims point:About Dying Declaration

9.   Cabinet approves Uttar Poorva Transformative Industrialization Scheme, 2024"
Context:

Recently, Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade proposed Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024).

About Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024):

Source- PIB

Aspect	Details
Description	i) Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024) is for the development of Industries and generation of employment in the states of North East Region. ii) It is a central sector scheme.
Objective	To generate gainful employment, leading to the overall socio-economic development.
Concerned Ministry	Ministry of Commerce and Industry
Funding	Rs.10,037 crore
Duration	10 years from the date of notification along with 8 years for committed liabilities
Features	i) Commencement of Production or operation: All eligible Industrial Units to commence their production or operation within 4 years from the grant of registration. ii) Districts are categorized in two zones: Zone A (Industrially Advanced Districts) & Zone B (Industrially Backward Districts) iii) Earmarking of funds: 60% of the outlay of Part A has been earmarked to 8 NE states and 40% on First-In-First-Out (FIFO) basis. iv) All new Industrial units and Expanding units would be eligible for the respective incentives.
Benefits	i) It will create productive economic activity in the manufacturing and service sectors. ii) It is anticipated that direct employment opportunities for about 83,000 individuals will be generated during the scheme period, with additional indirect employment.

Prelims point: Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024)

10. Centre tweaks PM Surya Ghar Muft Bijli Yojana.

Context:

The Union cabinet has recently tweaked the new ₹ 75,000-crore PM Surya Ghar Muft Bijli Yojana (Free rooftop solar electricity scheme).

The recent changes:

. **Original plan**– To completely subsidize the installation of 1 kW-3 kW solar systems in one crore households through partnerships with renewable energy service companies.

· **Changed Plan**:

a. Now, the scheme will only cover up to 60% of the installation costs.

b. Households interested in the scheme will need to pay the remaining amount, starting from a minimum of ₹ 20,000, depending on the power capacity of the installed system.

c. Households can get a low-interest, collateral-free loan.

d. Only houses with a suitable roof and an existing grid connection can participate in the scheme.

Consumers must still pay for all the net power they use from the grid.

About Pradhan Mantri Surya Ghar Muft Bijli Yojana:

Source- The Hindu

. **Objective:** To deliver 300 units of 'free electricity' monthly to 1 crore households via rooftop solar setups.

. **Department:** Ministry of New & Renewable Energy

. **Central subsidy:**

   a. 60% of installation costs for 2 kW systems

   b. 40% of costs for systems ranging from 2-3 kW capacity

   Note- Systems with higher wattage are ineligible.

   c. At present rates, there will be a subsidy of Rs 30,000 for 1 kW systems, Rs 60,000 for 2 kW systems, and Rs 78,000 for 3 kW systems or higher.

. **National Portal** – It will facilitate subsidy applications and assist in finding a suitable vendor for installing rooftop solar. Additionally, it will aid decision-making by providing relevant information as needed.

Prelims point: Pradhan Mantri Surya Ghar Muft Bijli Yojana:

11.   Sea Defenders-2024

Context:

The United States Coast Guard's (USCG) Bertholf ship reached Port Blair ahead of the 'Sea Defenders-2024' joint exercise.

Sea Defenders-2024:

Source- Zee Business

. **About–** It is a joint exercise between the Indian Coast Guard (ICG) and the United States Coast Guard (USCG).

. **Location–** It is scheduled to take place on March 9-10 near Port Blair's coast of Andaman and Nicobar Islands.

. **Focus of the Joint Exercise**: Maritime piracy and other threats, simulated drone attacks on merchant ships, joint search and rescue at sea, firefighting, pollution response, and counter-drug operations.

. **Emergency preparedness-**The event will also include a simulated medical evacuation to improve preparedness in emergency situations.

Key details about Indian Coast Guard (ICG):

. **About–** It is an armed force safeguarding India's maritime interests, enforcing maritime law in its territorial waters, including the contiguous zone and exclusive economic zone.

. **Establishment–** It was officially founded in 1978 under the Coast Guard Act, becoming an independent Armed force of India.

. **Nodal Ministry–** It operates under the Ministry of Defence.

. **Headquarter–** New Delhi
. **Working :**
   a. The ICG collaborates with other Union agencies, institutions, and authorities to protect India's maritime interests and security, aid vessels and fishermen in trouble, and preserve the marine environment.
   b. The Indian Coast Guard (ICG) also functions as the Central Coordinating Authority for response to Oil spills in Indian waters.

Prelims point:Sea Defenders-2024

12. Report turns spotlight on India's 'zero-food children.

Context:

A recent study had ranked India as having the third-highest percentage of children who had not eaten any food for 24 hours.

About Zero-food children:

Source-DTE

. It refers to those children who did not consume any animal milk, formula, or solid or semi-solid food during the last 24 hours.
. This category is critical because, at approximately six months of age, breastfeeding alone is insufficient to meet the nutritional needs of a child.

Findings of recent studies:

. As per the study published recently in the peer-reviewed **JAMA Network Open journal,** India ranks third highest globally, with 19.3% of children not receiving food, following Guinea (21.8%) and Mali (20.5%). In terms of numbers, India has the highest number of zero-food children at more than six million.
. **As per the study of Lancet Discovery Science,** Uttar Pradesh alone accounts for 28.4% of zero-food children in India followed by Bihar (14.2%), Maharashtra (7.1%), Rajasthan (6.5%), and Madhya Pradesh (6%).

The steps taken by government to curb malnutrition in India:

. **Integrated Child Development Services (ICDS) Scheme:** It was launched in 1975 to provide food, preschool education, primary healthcare, immunization, health checkups, and referral services to children under 6 years old and their mothers.
. **Pradhan Mantri Matru Vandana Yojana (PMMVY):** It is a Centrally Sponsored DBT scheme with a cash incentive of [1] 5000/- (in three instalments) being provided directly in the bank/post office account of Pregnant Women and Lactating Mothers.
. **National Nutrition Mission (NNM):** The government of India has launched the National Nutrition Mission (NNM), also known as POSHAN Abhiyaan, to eradicate malnutrition by the year 2022.
. **Anaemia Mukt Bharat Abhiyan:** The mission was launched in 2018 to accelerate anaemia decline by one to three percentage points annually.
. **Mid-day Meal (MDM) scheme:** It aims to improve nutrition levels among school children in addition to increasing enrolment, retention, and attendance.

. **National Food Security Act (NFSA), 2013:** It ensures food and nutrition security for the most vulnerable section of society.

Prelims Point:About Zero-food children.

13. Introducing a new toll collection system.

Context:

The government is planning to implement a new highway toll collection system based on the global navigation satellite system.

The objective of introduction of new tolling system:

. Its objective is to provide users the benefit of paying toll only for the actual distance travelled on a highway, or pay-as-you-use. In future, the system may allow barrier-free movement.

The new proposed highway tolling system, and how will it work:

. The tolling system will use the global navigation satellite system. It will provide more accurate location and navigation information.

. Its implementation will involve an **On-Board Unit (OBU)**, or a tracking device, fitted inside a vehicle whose location can be mapped using GAGAN, the Indian satellite navigation system. It will have an approximate accuracy of 10 metres.

. T**he co-ordinates of the entire length of the country's national highways** will be logged with the help of digital image processing. Software will be used to assign the toll rate on a particular highway, calculate the toll amount for a vehicle as per the distance travelled by it, and then deduct it from a wallet linked to the OBU.

. The system will additionally have gantries, or arches mounted with CCTV cameras, at various points on a highway for enforcement purposes.

FASTags be discontinued:

. The new tolling system will co-exist with the FASTag-based toll collection. The government has not taken any decision on whether OBUs will be made mandatory for all vehicles or only for new vehicles.

14. Citizenship Amendment Act rules notified, four years after the law was passed"

Context:

The Home Ministry has recently notified the Citizenship Amendment Act (CAA) rules, 2024. These rules enable the implementation of the Citizenship Amendment Act (CAA) passed by the Parliament in 2019.

Citizenship Amendment Act (2019): Key provisions:

. **About–** The objective of the Citizenship Amendment Act, 2019 is to modify the Citizenship Amendment Act of 1955. It provides Indian citizenship to particular categories of illegal migrants.

. **Eligible categories**- It proposes that six minorities–Hindus, Sikhs, Buddhists, Jains, Parsis, and Christians from Afghanistan, Bangladesh, and Pakistan won't be considered illegal immigrants if they enter India without proper documents on or before December 31, 2014.

. **Objective–** The main goal is to help non-Muslim migrants from India's neighboring Muslim-majority countries (Afghanistan, Pakistan, Bangladesh) to obtain citizenship.

. **Residence requirement reduces–** The amendment reduces the period of residency from 11 years to 5 years, for acquiring permanent citizenship through naturalization.

. **Exemption from criminal cases- I**ndividuals belonging to specified communities are granted immunity from criminal prosecution under the

Foreigners Act of 1946 and the Passport Act of 1920, provided they arrived in India on or before December 31, 2014.

. **Other Exceptions to the Act include:** The provisions on citizenship for illegal migrants will not apply to two categories-

   a. Regions protected by the 'Inner Line Permit'.

   b. Areas covered under the Sixth Schedule of the Constitution.

Online Process for applying:

. **Empowered Committee–** The citizenship application process will be conducted online, with an empowered committee overseeing the scrutiny of all applications through district-level committees.

. **Composition of empowered committee–** Each state's empowered committee will be chaired by the Director of Census Operations and will comprise officers from the Intelligence Bureau, Post Master General, State or National Informatics Centre, along with a representative each from the Department of Home and Divisional Railway Manager as invitees.

. **The district-level committee** will be headed by the Senior Superintendent or Superintendent of Post.

Documents required:

   a. Birth certificates, rental documents, identification papers, licenses, and educational certificates issued by government authorities in Afghanistan, Pakistan, and Bangladesh.

   b. To qualify for citizenship under Section 6B of the CAA, applicants must show they entered India before December 31, 2014. They also need to provide documents like a passport copy, visa, Census enumerator slip, PAN card, electricity bill, or insurance policy. These documents must be issued

by Indian authorities and remain valid even if expired.

   c. Applicants must provide an "eligibility certificate" from a respected local community institution confirming their membership in the Hindu, Sikh, Buddhist, Jain, Parsi, or Christian community.

Prelims point: Citizenship Amendment Act (2019): Key provisions.