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The Road Map to Mussoorie...



Prelims EDGE – 18/10/2024

WORLD ENERGY OUTLOOK

Context: The World Energy Outlook 2024 was recently released by the International Energy Agency (IEA).

World Energy Outlook 2024

About World Energy Outlook 2024:

- It presents a **detailed analysis of global energy trends**, focusing on clean energy transitions, rising energy demand, and the impacts of geopolitical conflicts.
- **Ongoing conflicts**, such as the Russia-Ukraine war and tensions in the Middle East, continue to **threaten global energy security**.
- Clean energy investments have reached record highs, particularly in solar

and wind power.

- In 2023, over **560 GW of renewable energy capacity was added globally**, marking a significant leap towards reducing reliance on fossil fuels.
- **By 2030, renewable energy will become the dominant source of electricity** across the world.
- Solar photovoltaic (PV) and wind energy are driving this shift, and low-emission energy sources, including nuclear power, are projected to generate over 50% of the world's electricity by the end of the decade.

Findings regarding India:

- India is set to experience the **highest increase in energy demand globally over the next decade**, driven by rapid economic growth and urbanisation.
- By 2035, total **energy demand is expected to rise by nearly 35%**, with sectors such as transportation, construction, and manufacturing contributing significantly.
- Despite its ambitious renewable energy targets, **coal remains a critical part of India's energy mix**.
- By 2030, India will add nearly 60 GW of coal-fired capacity, with coal continuing to generate more than 30% of India's electricity, even as solar PV installations expand rapidly.
- India's industrial sector is poised for major growth by 2035. **Iron and steel production is expected to rise by 70%**, while cement production is projected to increase by 55%.

- The stock of **air conditioners in India is projected to grow more than 4.5 times by 2035**, causing electricity demand from cooling to surge.
- India is making major progress in expanding renewable energy. India is on track to nearly **triple its renewable electricity generation capacity to 1,400 GW by 2035**.
- By 2030, India is set to have the world's **3rd-largest installed battery storage capacity**, which is crucial for integrating variable renewables like solar and wind.

About International Energy Agency (IEA)

- ✓ IEA was **created in 1974 by member countries of the OECD** (Organisation for Economic Co-operation and Development) to help nations respond to the major 1973-1974 oil crisis.
- ✓ Since then, its work has expanded to cover energy security, economic development, and clean energy.
- ✓ The IEA is an **autonomous forum** that provides analysis, data, and policy recommendations to help countries provide secure and sustainable energy.
- ✓ **Headquartered in Paris, France.**
- ✓ The IEA family is made up of 31 full member countries, **13 association countries including India**, and 4 accession countries.
- ✓ A candidate country to the IEA must be a member country of the OECD.

Source: India faces higher increase in energy demand over next decade: IEA (Hindustan Times)

INDIA AI MISSION

Context: The IndiaAI Mission has selected 8 Responsible AI Projects against the Expression of Interest (EoI) floated under the Mission.



About IndiaAI Mission:

- The IndiaAI Mission will establish a comprehensive ecosystem catalysing AI innovation through strategic programmes and partnerships across the public and private sectors.
- Under this scheme, the government will allocate funds towards subsidising private companies looking to

set up AI computing capacity in the country.

- **To be implemented by:** IndiaAI independent business division under **Digital India Corporation**.

Key Features:

- **IndiaAI Compute Capacity:** Aims to build a high-end scalable AI computing ecosystem to cater to the demands of India's AI start-ups.
 - The ecosystem will comprise AI compute infrastructure of **10,000 or more Graphics Processing Units (GPUs)**, built through public-private partnerships.
 - Further, an AI marketplace will be designed to offer AI as a service and pre-trained models to AI innovators.
 - It will act as a one-stop solution for resources critical for AI innovation.
- **IndiaAI Innovation Centre:** The IndiaAI Innovation Centre will undertake the development and deployment of indigenous **Large Multimodal Models (LMMs)** and domain-specific foundational models in critical sectors.

- **IndiaAI Datasets Platform:** The IndiaAI Datasets Platform will streamline access to quality non-personal datasets for AI Innovation.
- **IndiaAI Application Development Initiative:** It will promote AI applications in critical sectors for the problem statements sourced from Central Ministries, State Departments, and other institutions.
 - It aims at the adoption of impactful AI solutions with the potential for catalysing large-scale socio-economic transformation.
- **IndiaAI FutureSkills:** It is conceptualised to mitigate barriers to entry into AI programmes and will increase AI courses in undergraduate, Masters level, and Ph.D. programmes.
 - **Data and AI Labs** will also be set up.
- **IndiaAI Startup Financing:** The IndiaAI Startup Financing pillar is conceptualised to support and accelerate deep-tech AI startups and provide them with streamlined access to funding to enable futuristic AI projects.
- **Safe & Trusted AI:** For responsible development, deployment, and adoption of AI, the Safe & Trusted AI pillar will enable implementation of responsible AI projects including the development of indigenous tools and frameworks, self-assessment checklists for innovators, and other guidelines and governance frameworks.

Source: India Commits to Safe and Trusted AI with New EoI initiative (PIB)

SECTION 6A OF CITIZENSHIP ACT, 1955

Context: The Supreme Court has upheld the constitutional validity of Section 6A of the Citizenship Act of 1955, which was enacted as part of the 1985 Assam Accords.



About Section 6A of the Citizenship Act, 1955:

- Section 6A was enacted as part of the **Citizenship (Amendment) Act, 1985**, following the Assam Accord of 1985.
- The Assam Accord was a tripartite agreement between the **Central Govt, the Govt of Assam, and the leaders of the Assam Movement**, which sought to end the influx of illegal migrants from Bangladesh.
- Assam Accords introduced Section 6A, which was meant **exclusively for Assam**. It addresses the issue of large-scale migration preceding the 1971 Bangladesh Liberation War.
- It mandates **detection & deportation of foreigners who entered Assam after March 25, 1971**, marking the creation of Bangladesh.
- The introduction of Section 6A reflects the specific historical and demographic challenges faced by Assam during this critical period.

Provisions and Implications:

- Section 6A created a special provision for Assam by which persons of Indian origin who **came from Bangladesh before 1st January 1966, were deemed to be citizens of India** as of that date.

- Persons of Indian origin who came to Assam **between 1st January 1966, and 25th March 1971**, and who were detected to be foreigners, were **required to register themselves and were granted citizenship** after 10 years of residence, subject to certain conditions.
- Persons who entered Assam after 25th March, 1971, were to be detected and deported under the law.

Source: SC upholds Section 6A of Citizenship Act as valid law (*The Hindu*)

PLACES IN NEWS

Ranthambore Tiger Reserve



- The Rajasthan govt. recently stopped the illegal construction of a buildings in the buffer zone of the Ranthambore Tiger Reserve.

- It lies at the **junction of the Aravali and Vindhya** hill ranges.

- It comprises of the Ranthambore National Park as well as **Sawai Mansingh and Keladevi Sanctuaries**.

- The **Ranthambore fort**, from which the forests derive their name, is strategically located atop hill within the park and is

believed to have been built in 944 AD by a Chauhan ruler.

- As per the 2023 Census by National Tiger Conservation Authority (NTCA), it is **home to 71 tigers**.
- It is mostly covered with **tropical dry deciduous forests**.

Roopkund Lake



- Roopkund Lake is situated at an altitude of **5,029 meters in the Chamoli district of Uttarakhand**.

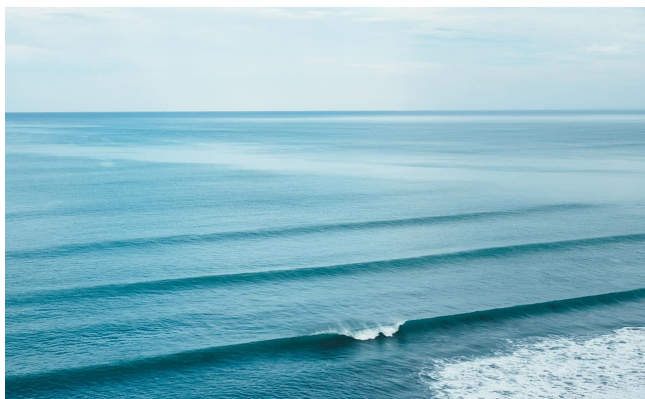
- The lake is commonly referred to as the **“Skeleton Lake”** due to the hundreds of ancient human skeletons found around its edges. These skeletons date back to the 9th century AD, believed to be from a group of travelers or pilgrims. Studies suggest they died due to a sudden hailstorm.

- Roopkund is a **shallow, high-altitude lake, typically around 2 meters deep**, although its size fluctuates with seasonal melting and freezing.

- Roopkund is a **glacial lake**, meaning it was formed by glacial activities, with water revealing the bones during the summer months when the ice melts.
- It holds cultural importance for the local communities, who believe it is **associated with Goddess Nanda Devi**. A Nanda Devi Raj Jat pilgrimage occurs every 12 years, during which devotees travel through this region.

TERMS IN NEWS

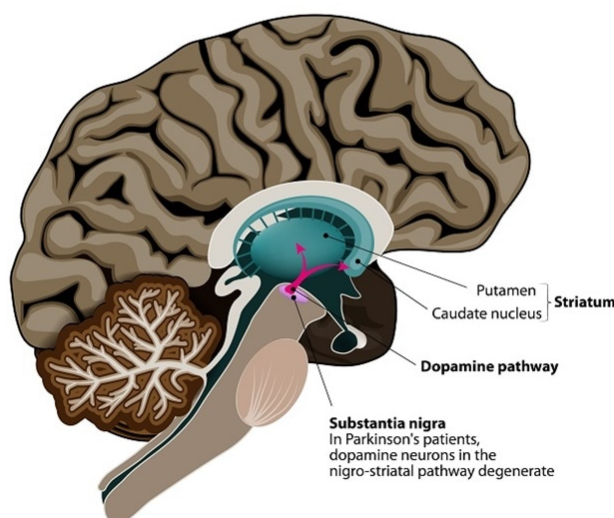
Swell Waves



- A **swell** is the formation of **long wavelength waves** on the surface of the seas. Swell waves organize themselves into groups of similar heights, and then travel long distances without much change. **They are not caused by local winds.**
- Unlike waves caused by local winds (wind waves), swells are known for their **smoother, more regular appearance and longer wavelengths.**
- They are **generated by distant weather systems** and can travel thousands of miles from their origin, retaining energy over vast distances.
- The **Swell Surge Forecast System** was **launched by the Indian National Centre for Ocean Information Services (INCOIS)** in 2020 — it gives a warning seven days in advance.

Parkinson's Disease

PARKINSON'S DISEASE



genetic and environmental factors.

- Parkinson's disease is a **progressive neurodegenerative disorder** that impairs movement and **can lead to immobility and dementia** over time.
- It usually occurs in older people. **Men are affected more often than women.**
- Its prevalence has doubled in the past 25 years. **India shares around 10% of the global burden** of the disease.
- The **exact cause of Parkinson's disease is not fully known** yet, but it is believed to involve a combination of

- It is primarily characterized by the **loss of dopamine-producing neurons** in the brain, leading to **motor and non-motor symptoms**.
 - Motor symptoms include slow movement, tremors, & rigidity.
 - Non-motor symptoms include cognitive issues, mental health disorders, sleep disturbances, pain, and sensory problems.
- **There is no cure** for the disease, but medicines, surgery and rehabilitation can reduce symptoms.

SPECIES IN NEWS

Great White Pelican



- According to a recent study, great white pelicans are increasingly **avoiding Indian wetlands due to habitat destruction**.
 - The great white pelican, also known as the eastern white pelican, rosy pelican or simply 'white pelican' is a bird in the pelican family.
 - It **breeds from southeastern Europe through Asia and Africa**, in swamps and shallow lakes.
- The great white pelican is a huge bird. It measures 140 to 180 cm in length with a 28.9 to 47.1 cm enormous pink and yellow bill.
 - The **wingspan measures 226 to 360 cm** - the latter measurement is one of the highest ever recorded among extant flying animals.
 - **IUCN Status: Least Concern**

PRACTICE QUESTIONS

Q1. Consider the following statements regarding the IndiaAI Mission:

1. It aims at catalysing AI innovation through strategic programmes and partnerships across the public and private sectors.
2. The Department of Science & Technology is the implementing agency for the Mission.
3. AI computing infra of 100,000 or more Graphics Processing Units (GPU) is an integral part of the IndiaAI Mission.

How many of the afore mentioned statements are correct ?

- A. Only one statement
- B. Only two statements

- C. All three statements
- D. None of the statements

Q2. Consider the following statements regarding the International Energy Agency (IEA):

1. The IEA works under the supervision of the UN General Assembly.
2. The IEA releases the annual “Global Energy Outlook Report”.
3. India has had full membership of the IEA since 2017.

Which of the above statements are correct ?

- A. 1 and 2
- B. 2 only
- C. 2 and 3
- D. 1 only

Q3. Consider the following tiger reserves in India and the states they are located in:

1. Satkosia: Odisha
2. Ranthambore: Rajasthan
3. Kawal: Telangana
4. Pakke: Assam

How many of the afore mentioned pairs are correctly matched ?

- A. Only one pair
- B. Only two pairs
- C. Only three pairs
- D. All four pairs

Q4. Which of the following statements about the Assam Accords is *incorrect* ?

- A. It was signed between the Union Govt. and Govt. of Assam only.
- B. It aims to detect and deport illegal immigrants from Bangladesh.

- C. It mandated an amendment to the Citizenship Act, 1955.
- D. It created a 3-tier system for classifying immigrants into India.

Q5. Consider the following lakes located in India and their significance:

No.	Lake	Location	Significance
1	Roopkund	Uttarakhand	Glacial Lake
2	Lonar Lake	Maharashtra	Volcanic Lake
3	Lake Tsomgo	Arunachal Pradesh	Glacial Lake
4	Kanwar Taal	Bihar	Oxbow Lake

In which of the afore mentioned rows is all the information correctly matched ?

- A. 1 and 3
- B. 2 and 3
- C. 2 and 4
- D. 1 and 4

Answers:

1. A
2. B
3. C
4. A
5. D