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Institute for CSE Examination

# PRELIM POINTERS

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### Tato-I Hydroelectric Project



#### Overview:

*The Cabinet Committee on Economic Affairs recently approved investing Rs 1750 crores for the Tato-I Hydro Electric Project (HEP) in Arunachal Pradesh's Shi Yomi District.*

#### About Tato-I Hydroelectric Project:

- The project, estimated at Rs. 1750 crore, will be located in Shi Yomi District of **Arunachal Pradesh**.
- The project, with an installed capacity of **186 MW (3 x 62 MW)**, is expected to be completed in 50 months and will generate 802 million units (MU) of electricity annually.
- The power generated will improve the power supply in Arunachal Pradesh and contribute to balancing the national grid.
- It will be developed through a **joint venture between the North Eastern Electric Power Corporation Ltd. (NEEPCO) and the Arunachal Pradesh government**.
- The central government will provide ₹77.37 crore for infrastructure such as roads, bridges, and transmission lines, along with ₹120.43 crore in financial assistance for the state's equity share.
- **Arunachal Pradesh will receive 12% of the generated power for free**, with an additional 1% allocated to a Local Area Development Fund (LADF).

#### Q1: What is North Eastern Electric Power Corporation Ltd. (NEEPCO)?

NEEPCO is a Miniratna CPSE under the Ministry of Power, Government of India for generation of electricity from hydro, thermal & renewable energy sources.

## What is AUKUS?



### Overview:

*The Chinese ambassador to New Zealand cautions that joining AUKUS could harm NZ-China relations.*

### About AUKUS:

- It is a **trilateral security partnership** between the **United Kingdom, the United States of America, and Australia** agreed in 2021 that focuses on **technology sharing in the Indo-Pacific region**.
- The alliance is widely understood to be a strategic buildup in response to, and a **deterrence against, Chinese aggression** and ambitions in that strategically important area.
- AUKUS is intended to strengthen the ability of each government to support security and defense interests, building on longstanding and ongoing bilateral ties.
- It consists of **two key pillars**.
  - **Pillar 1** focuses on **supporting Australia to acquire its first conventionally armed, nuclear-powered submarine fleet**. It **does not involve the transfer of nuclear weapons** to Australia.
  - **Pillar 2** focuses on **cooperation in eight advanced military capability areas**: artificial intelligence (AI), quantum technologies, innovation, information sharing, and cyber, undersea, hypersonic, counter-hypersonic, and electronic warfare domains.
- **Submarine Component:**
  - It is designed to **equip Australia with nuclear-powered attack submarines (SSNs)**.
  - In total, Australia will end up with **eight** of the new nuclear submarines, called **SSN-AUKUS**.

- These submarines will be based on a **British design** but have **American technology** or an American combat system.
- AUKUS will make Australia the **seventh country** in the world **to be armed with nuclear-powered submarines** and the **second, after the United Kingdom, with whom the United States has shared this technology.**
- It will significantly enhance Australia's undersea capabilities in the Indo-Pacific as nuclear-powered submarines offer many advantages, such as extended range, endurance, and stealth—features.
- These countries, however, made it clear that their aim is **not to arm** the new submarines **with nuclear weapons.** This is because **Australia is a signatory to the Nuclear Non-proliferation Treaty (NPT),** which bans it from acquiring or deploying nuclear weapons.

**Q1: What is the Nuclear Non-proliferation Treaty (NPT)?**

The NPT is an international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament. The Treaty represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States. A total of 191 States have joined the Treaty, including the five nuclear-weapon States. India has not signed the NPT, citing concerns about the discriminatory nature of the treaty as it perpetuates the nuclear weapons monopoly of the five recognized nuclear weapon states (China, France, Russia, the UK, and the USA).

## Eklavya Digital Platform



### Overview:

Recently, the chief of the Indian Army launched an online learning platform for the Indian Army nicknamed as "Eklavya".

### About Eklavya Digital Platform:

- It has been developed under the aegis of **Headquarters Army Training Command with Army War College** as the sponsor agency.
- The platform has been developed by the "Bhaskaracharya National Institute of Space Applications and Geoinformatics" (BISAG-N), Gandhinagar, along with support from the Directorate General of Information Systems.
- This platform has been **hosted on the Army Data Network** and features a scalable architecture. This enables Headquarters Army Training Command to seamlessly integrate any number of training establishments of the Indian Army, **each capable of hosting an extensive range of courses.**
- This initiative aligns with the Indian Army propelling itself into the "Decade of Transformation" as envisioned by the COAS and also with Indian Army's theme for 2024 as the **"Year of Technology Absorption."**
- Student officers are permitted to register for multiple courses simultaneously.
- There are **three categories of courses** hosted
  - **'Pre-Course Preparatory Capsules':** It has study material for all offline physical courses being conducted at **various Category 'A' training establishments.** The aim is to shift the "basics" to the online courses so that physical courses have more and more contemporary content with a focus on the "application part".

- **Appointment or specific assignment-related courses:** The courses in this category will also enable the **officers to get domain specialisation** in the field of their choice, which will further aid their employment planning.
- **Professional Development Suite:** To include courses on Strategy, Operational Art, Leadership, Organisational Behaviour, Finance, Art of Reading, Power Writing, Emerging Technology etc.
- The Eklavya also has the functionality of a **searchable “Knowledge Highway”**, wherein various journals, research papers and articles etc are uploaded under a single window.
- The platform will go a long way in encouraging continuous professional military education in the officers, decongest and enrich the existing physical course, preparing officers for specialist appointments and encouraging domain specialisation.

**Q1: What is Bhaskaracharya National Institute for Space Applications and Geo-informatics?**

It is an Autonomous Scientific Society registered under the Societies Registration Act, 1860 under the MeitY, Government of India to undertake technology development & management, research & development, facilitate National & International cooperation, capacity building and support technology transfer & entrepreneurship development in area of geo-spatial technology.



## What is OPEC+?



### Overview:

*Recently, crude oil prices stayed steady after an unexpected jump in US gasoline stock supplies and delaying of the OPEC + meeting on output policy.*

### About OPEC +:

- It is a group of **22 oil-exporting countries** which meets regularly to decide how much crude oil to sell on the world market.
- These nations aim to work together on **adjusting crude oil production** to bring stability to the oil market.
- **Origin:** These nations came to an accord towards the end of 2016 "to institutionalize a framework for cooperation between OPEC and non-OPEC producing countries on a regular and sustainable basis."
- At the core of this group are the **12 members of OPEC** (the Organization of the Oil Exporting Countries), which are mainly Middle Eastern and African countries.
- **Members:** It comprises 12 OPEC countries plus Azerbaijan, Bahrain, Brunei, Kazakhstan, Russia, Mexico, Malaysia, South Sudan, Sudan, and Oman.

### What is OPEC?

- It is a permanent intergovernmental organization of **oil-exporting countries**.
- **Formation:** It was **established in 1960** by the five founding members Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela.
- Currently, it has **12 members**, including Algeria, Congo, Equatorial Guinea, Gabon, Libya, Nigeria, and the United Arab Emirates.



- **Angola** withdrew its membership effective **1 January 2024**.
- **Headquarters:** Vienna, Austria.

**Q1: What is Brent Oil?**

It is a light, sweet crude oil extracted from different oil fields in the North Sea. Its unique properties, low density and low sulphur content, make Brent crude oil simpler to process into products such as gasoline. As its supply is water-borne, Brent crude oil is easy to transport to distant locations.





### What is Bar-Tailed Godwit?



#### Overview:

*In an unusual occurrence, five bar-tailed godwits were spotted by a naturalist at Pulicat lake recently.*

#### About Bar-Tailed Godwit:

- It is a remarkable **migratory shore bird renowned for its extraordinary endurance during migration.**
- Scientific Name: *Limosa lapponica*
- **Distribution:**
  - The bar-tailed godwit species is distributed in **northern Europe and Asia, western Alaska, Africa, the Persian Gulf, India, southeast Asia, China, and Australia.**
  - These godwit species **breed in the Arctic region.**
  - In India, wintering bar-tailed godwit species are distributed in the states of Gujarat, Maharashtra, Karnataka, Goa, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, West Bengal, Tripura, and Andaman and Nicobar Islands.
- Bar-tailed Godwits are the **world record holders for non-stop flight:** they have been recorded travelling 13,500 km from Alaska to Tasmania in only 11 days flying at an average of more than 50 km/h, losing almost half of their body weight along the way.
- **Features:**
  - They are quite **large waders**, with **females being bigger than males.**
  - It is mainly **mottled brown above** and lighter and more **uniform buff below.**

- It has **dull white underwings** and a long, slightly upturned bill.
- As the name suggests, the **white tail is barred with brown**.

- **IUCN Red List: Near Threatened**

**Q1: Where is Pulicat Lake located?**

Pulicat Lake is the second-largest brackish water lake in India, located on the east coast of the country. It spans the borders of Andhra Pradesh and Tamil Nadu, playing a crucial ecological and economic role for the region.



## What is Japanese Encephalitis?



### Overview:

*The national capital has reported an "isolated" case of Japanese Encephalitis, official sources said recently.*

### About Japanese Encephalitis:

- It is a potentially **severe viral zoonotic disease** caused by **the Japanese Encephalitis(B) virus**.
- **Transmission:**
  - The virus is **transmitted from animals** – particularly pigs and birds belonging to the Ardeidae family, such as cattle egrets, pond herons, etc. – **to humans by the Culex mosquito of the Vishnui group**.
  - There is **no human-to-human transmission** of the virus.
- The disease is **most common in rural areas of Asia**, particularly **during monsoon seasons** when mosquito breeding is prevalent.
- **Symptoms:**
  - It **affects the brain**, leading to **symptoms like fever, headache, vomiting, and neurological signs** such as confusion, seizures, and paralysis.
  - While many infected individuals may show mild or no symptoms, **severe cases can lead to permanent brain damage or death**.
- **Prevention and Treatment:**
  - **Vaccination** is the **most effective prevention strategy**, particularly in endemic regions.
  - Early diagnosis and supportive treatment can help manage symptoms, but there is **no specific antiviral treatment** for Japanese Encephalitis.

- According to the **central government guidelines, two doses of the vaccine** have been a **part of the Universal Immunisation Programme since 2013.**

**Q1: What is a Virus?**

A virus is an infectious microbe consisting of a segment of nucleic acid (either DNA or RNA) surrounded by a protein coat. A virus cannot replicate alone; instead, it must infect cells and use components of the host cell to make copies of itself. Often, a virus ends up killing the host cell in the process, causing damage to the host organism. Well-known examples of viruses causing human disease include AIDS, COVID-19, measles and smallpox.



## Girnar Wildlife Sanctuary



### Overview:

*The Earth Observation (EO) data of Girnar Wildlife Sanctuary reveals that while the settlements increased from 2000 to 2020 at or near the main temple area, a large area of dense forest was converted to open forest during the same period of time.*

### About Girnar Wildlife Sanctuary:

- It is located in the **Junagadh district of Gujarat**.
- It spans the rugged terrain of the **Girnar hills**, which are a part of the **Saurashtra region**.
- It was declared a wildlife sanctuary in 2008.
- Situated around the Girnar hills, this sanctuary is home to several endangered species, including the Asiatic lion.
- **Flora:**
  - Predominantly **dry deciduous forests** with species like teak, dhak, acacia, and other drought-resistant plants.
  - The sanctuary supports a **mix of dense forest, open scrub, and grasslands**.
- **Fauna:**

- It is filled with abundant wildlife, including **Asiatic lions, spotted deer, Sambar, Chousinghas, Chinkaras**, leopards, Indian golden jackals, and around 300 species of birds, which include both resident and migratory.
- It serves as an **extension of the Gir National Park's lion population**.

**Q1: What are Deciduous Forests?**

A deciduous forest is a biome dominated by deciduous trees which lose their leaves seasonally. The Earth has temperate deciduous forests, and tropical and subtropical deciduous forests, also known as dry forests.





## Rengma Naga Tribe



### Overview:

*The Rengma Naga tribe concluded a two-day celebration of the Ngada festival-cum-Mini Hornbill Festival at the Tseminyu RSA ground in Nagaland recently.*

### About Rengma Naga Tribe:

- The Rengma Naga are a **Tibeto-Burman ethnic group** inhabiting the Northeast Indian states of **Nagaland and Assam**.
- According to the 2011 Census of India, the population of Rengmas in Nagaland stands at 62,951 and the population of Rengmas in Assam is around 22,000.
- They **call themselves** by the names of "**Njong**" or "**Injang**".
- They belong to the **Mongoloid racial stock**.
- It is **believed that Rengmas**, along with other Naga tribes, **migrated from Southeast Asia** across the Yunnan Mountain ranges and settled down on the upper Burma region.
- **Slavery used to be practised** among the Rengmas, and the slaves were most commonly known by the names menugetenyu and it sakesa.
  - By the time the Britishers/ British arrived in the Naga region, slavery was a declining practice, and no Rengma appears to have been a slave during that time.
- **Economy:**
  - The Rengma tribes are **agriculturalists**.
  - They **grow paddy through Jhum cultivation** and **wet cultivation**. Besides paddy staple crops, seasonal crops and fruits are also grown.



- **Religion:** Traditionally, Rengma tribes are **worshippers of supernatural beings**. Now most of the Rengma tribes are **Christians**.
- **Festivals:**
  - Rengma Tribes celebrate a lot of seasonal festivals that are related to their agriculture.
  - "**Ngada**" is the most important festival of Rengma tribes.

**Q1: What is Jhum cultivation?**

Jhum cultivation is a traditional agricultural practice primarily found in the northeastern states of India and other parts of Southeast Asia. It is also known as shifting cultivation or slash-and-burn agriculture. This method involves clearing forested areas, usually by cutting and burning the vegetation, and then planting crops for a short period before moving to a new plot of land.





### Siberian Demoiselle crane



#### Overview:

*A Siberian Demoiselle crane, nicknamed Sukpak, has broken the record for the longest migratory flight to Rajasthan, India, covering over 3,676km.*

#### About Siberian Demoiselle crane:

- It is the **smallest of crane species** which is both solitary and social in behavior.
- This bird is symbolically significant in the culture of India, where it is known as **Koonj or Kurjaa**.
- These cranes are **migratory birds**, travelling long distances from their breeding to their wintering grounds.
- **Habitat:** It inhabits fields, **deserts, steppes, and plains** with water in general vicinity.
- **Distribution:** They are found in **central Eurosiberia**, ranging from the Black Sea to Mongolia and Northeast China.
- **Breeding range:** They breed in **Central Eurasia, from the Black Sea** to North East China and Mongolia. It winters in the Indian **subcontinent and sub-Saharan Africa**.
- While Demoiselle cranes typically travel **through Himalayan valleys** and enter India via Nepal, Sukpak took a different route, flying through Russia, Kazakhstan, Turkmenistan, Afghanistan, and Pakistan before entering India through Jaisalmer.
- **Conservation efforts in India:** **Khichan** is a key stop for migratory birds in Rajasthan also it has become **India's first reserve dedicated to this species**.
- **Conservation status**
  - **IUCN:** Least Concern
- **Threats:** They are threatened by drainage of wetlands and habitat loss, illegal pet trade and suffer hunting pressure.

#### Q1: What is the role of the International Union for Conservation of Nature?

Its primary role involves assessing the conservation status of species, providing data and analysis on the state of biodiversity worldwide, and offering guidance and frameworks for conservation efforts.



### K-4 ballistic Missile



#### About K-4 ballistic Missile:

- It is a **nuclear-capable ballistic missile** with a range of **around 3,500 km**.
- It is a **solid-fuelled missile** which was tested at least five times in the last few years from submersible platforms.
- The successful launch of the K-4 missile adds another **layer of strength to India's nuclear triad**, which includes land-based missiles, air-launched nuclear weapons, and submarine-launched platforms.
- It is developed by the [Defence Research and Development Organisation \(DRDO\)](#).
- **Significance:** It provides a major boost to India's nuclear deterrence and strategic capabilities.

#### Key facts about the INS Arighaat

- It was commissioned in **August 2024**.
- It is India's second nuclear-powered ballistic missile submarine (SSBN), following India's first nuclear submarine, INS Arihant.
- It was constructed at the **Indian Navy's Ship Building Centre (SBC)** in Visakhapatnam.
- It can carry up to four nuclear-capable K-4 SLBMs (Submarine Launched ballistic Missile) with a range of over 3500 kilometers or twelve conventional warhead K-15 SLBMs with a range of about 750 kilometers.

#### Q1: What is the Defence Research and Development Organisation (DRDO)?

The DRDO is an agency of the Government of India responsible for the research and development of technology and equipment related to defense and military applications. Established in 1958, DRDO operates under the Ministry of Defence and plays a crucial role in enhancing India's defense capabilities by developing advanced technology, systems, and products.