



# ENLITE IAS

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**FORTNIGHTLY CURRENT AFFAIRS MAGAZINE**

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**Mission Aditya L1**

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## POLITY

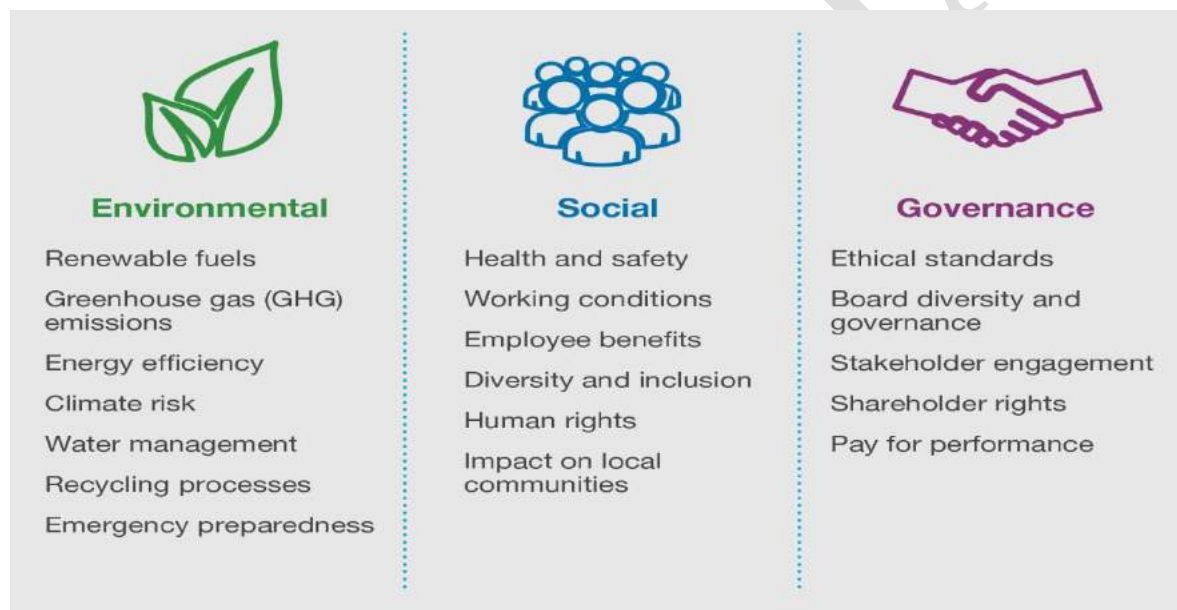
### 1. Environmental, Social or Governance (ESG) Schemes

#### In News

International Financial Services Centres Authority (IFSCA), with the aim to establish GIFT-IFSC as a hub for various sustainable finance related activities, has issued/notified the regulatory frameworks/requirements regarding ESG

#### **What is environmental, social and governance (ESG)?**

- ESG investing means investing based on not just traditional financial factors like potential Return on Investment (RoI) but *also non-financial environmental, social and governance factors*.
- By 2025, *over a third of assets* under management globally, shall pertain to ESG.



### International Financial Services Centres Authority

- IFSCA was established by the central government to regulate all financial services, financial products and financial institutions in the *International Financial Services Centre (IFSC)* headquartered at *GIFT City, Gandhinagar Gujarat*.
- It is a statutory body established under the *International Financial Services Centres Authority Act, 2019*
- The International Financial Services Centres Authority will consist of *nine members*, appointed by the central government.
  - ✓ They will include *chairperson* of the authority, a member each from the *RBI, SEBI, the Insurance Regulatory and Development Authority of India (IRDAI)*,

*and the Pension Fund Regulatory and Development Authority (PFRDA); and two members from the Ministry of Finance. In addition, two other members will be appointed on the recommendation of a Selection Committee.*

- ✓ Term: All members of the IFSC Authority will have a term of **three years, subject to reappointment.**

## **2. Securities Appellate Tribunal (SAT)**

### **In News**

SAT gives relief to NSE in co-location case of 2019.

### **About SAT**

- Securities Appellate Tribunal is a **statutory body** established under the **Securities and Exchange Board of India Act, 1992.**
- SAT deals with the cases related to **SEBI,IRDAI,PFRDA**
- SAT consists of one Presiding Officer and Judicial and Technical Members as the Central Government may determine.
- The tenure for Presiding Officer or the Judicial or Technical Member will be **five years** from the date of appointment.
- They shall be **eligible for re-appointment** for another term of maximum five years.
- The Securities Appellate Tribunal shall have the **same powers as vested in a civil court** under the code of civil procedure.

## **3. Finance Commission**

### **In News**

Process to set up Sixteenth Finance Commission set to kick off soon.

### **What is Finance Commission?**

- The Finance Commission is constituted by the **President under article 280** of the Constitution.

### **Duty of the Commission**

- To make recommendations to the President on:
  - ✓ The distribution between the Union and the States of the net proceeds of taxes.
  - ✓ The principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India.
  - ✓ The measures needed to augment the Consolidated Fund of a State to supplement the resources of the Municipalities and Panchayats.

### **Appointment of Finance Commission**

- The Finance Commission is appointed by the President under **Article 280** of the Constitution.
- The commission has *a chairman and four members*.
- The Chairman of the Commission is selected from among persons who have had *experience in public affairs*.

## **4. Electoral Bonds Scheme**

### **In News**

The Supreme Court to examine on whether petitions on electoral bonds scheme need to be referred to Constitution Bench.

### **About the Scheme**

- Electoral bonds are money *instruments like promissory notes* that can be bought by companies and individuals in India.
- The electoral bond does *not bear the name of the donor* and is, in effect, *anonymous*.
- The bonds are available for purchase at any SBI branch in multiples of ₹1,000, ₹10,000, ₹1 lakh, ₹10 lakh and ₹1 crore and can be bought through a KYC-compliant account.
- There is *no limit on the number of electoral bonds that a person or company can purchase*.

### **Constitution bench of Supreme Court**

- Constitution bench is the name given to the benches of the Supreme Court of India which consist of *at least five judges* of the court.
- It decides any case “*involving a substantial question of law as to the interpretation*” of *the Constitution of India*.
- This provision has been mandated by *Article 145 (3)* of the Constitution of India.
- The Chief Justice of India has the power to constitute a Constitution Bench and refer cases to it.



## ENVIRONMENT

### 1. Graded Response Action Plan

#### In News

Stage III of GRAP revoked with immediate effect in entire NCR as overall AQI improves.

#### About GRAP

- GRAP is a set of *emergency measures* that kick in to prevent further deterioration of air quality once it reaches a certain threshold.
- Stages of GRAP:
  - ✓ Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300).
  - ✓ Stage 2 is when it's in the 'Very poor' category (301-400)
  - ✓ Stage 3 is when the AQI is the 'Severe' category (401-450)
  - ✓ Stage 4 is when it rises to the 'Severe +' category (more than 450).
- GRAP was formulated after several meetings held by Environment Pollution Control Authority (EPCA) with state government representatives and experts.

### 2. Neelakurinji

#### About Neelakurinji

- *Strobilanthes kunthiana*, known as Neelakurinji in Malayalam and Tamil is found in the *shola forests* of the *Western Ghats* in Kerala, Karnataka and Tamil Nadu.
- It is a purplish blue flower blossoms *only once in 12 years*
- It is a *monocarpic plant* ie. it flower *only once in their lifetime, set seeds and die.*
- The Union government has included Neelakurinji on the list of protected plants from Kerala.

## Eravikulam National Park



#### **Eravikulam National Park**

- Location - Kannan Devan Hills of the Southern Western Ghats in Idukki District, Kerala.
- It was declared as Eravikulam-Rajamala Wildlife Sanctuary in 1975 and was elevated to the status of a National Park in 1978.
- The main body of the park comprises a high rolling plateau with a base elevation of about 2000 m from mean sea level.
- Three major types of plant communities found in the park are: Grasslands, Shrub Land and Shola Forests
- Flora - It houses the special Neelakurinji flowers that bloom once every 12 years and the next sighting is expected to be in 2030.
- Fauna - The park holds the largest viable population of the endangered Nilgiri Tahr



### 3. Sambar Deer

#### In News

Fishermen rescue Sambar deer swimming in sea

#### **About Sambar Deer**

- The sambar also known as *Rusa unicolor* is a large deer ***native to the Indian subcontinent and Southeast Asia.***
- They are ***nocturnal*** or crepuscular animals and rest during the day under the cover of heavy forest.
- They prefer to live in tropical dry forests, open scrub, tropical seasonal forests, subtropical mixed forests etc.
- It is listed as a ***vulnerable*** species on the IUCN Red List since 2008.

### 4. Air Quality Monitoring System (AI-AQMS v1.0)

#### In News

MeitY launches ***Technology*** for Air Quality Monitoring System (AI-AQMS v1.0)

- ***Ministry:*** Ministry of Electronics & IT
- Air Quality Monitoring System (AI-AQMS v1.0) developed under the ‘National programme on Electronics and ICT applications in Agriculture and Environment (AgriEnIcs).
- It was developed by Centre ***for Development of Advanced Computing*** (C-DAC), Kolkata.



# SAFAR System



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## Why in news?

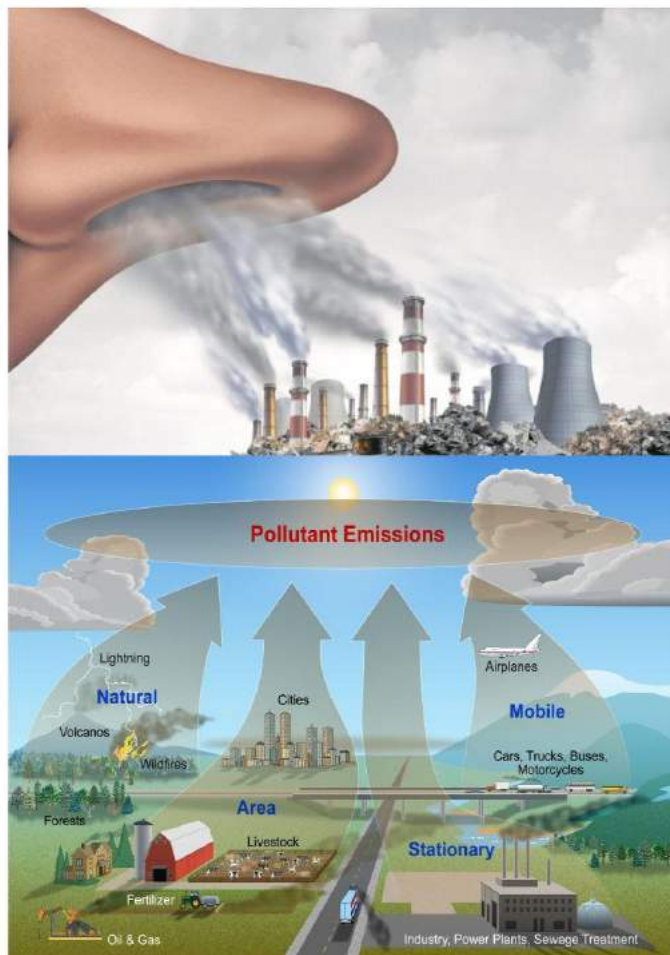
- The Air Quality Index (AQI) in the national capital was recorded 381 recently, as per the System of Air Quality and Weather Forecasting and Research (SAFAR) and the air quality remained in the 'very poor category'.

## SAFAR System

- SAFAR is an air quality monitoring system.
- Ministry - Ministry of Earth Sciences (MoES)
- Aim - To provide location specific information on air quality in near real time and its forecast upto 3 days in India.
- Developed by- Indian Institute of Tropical Meteorology (IITM), Pune, along with India Meteorological Department (IMD) and National Centre for Medium Range Weather Forecasting (NCMRWF).
- Objective: To increase awareness among the general public regarding the air quality changes in their city well in advance so that appropriate mitigation measures and systematic action can be taken up for betterment of air quality and related health issues.
- The World Meteorological Organization has recognised SAFAR as a prototype activity on the basis of the high quality control and standards maintained in its implementation.

## Air Quality Index (AQI)

- AQI is calculated based on the average concentration of a particular pollutant measured over a standard time interval (24 hours for most pollutants, 8 hours for carbon monoxide and ozone).
- Eight individual pollutants are monitored for the calculation of AQI in India. These are PM10, PM2.5, nitrogen dioxide, sulphur dioxide, carbon monoxide, ground-level ozone, ammonia, and lead.
- To calculate AQI, data for a minimum of three pollutants must be present, of which one should be either PM10 or PM2.5.



## 5. Indian Star Tortoise

### In News

Indian star tortoise faces twin challenges of habitat loss and genetic diversity, finds study.

### About Indian Star Tortoise

- The Indian star tortoises are found in the *arid and dry forests in India, Pakistan and Sri Lanka*.
- Its name comes from the star-like patterns that feature on its high-domed shell.
- It has been listed as **Vulnerable** on the IUCN Red List since 2016.

- It is listed under *Appendix I of the CITES* (Convention on International Trade in Endangered Species) list.
- Conservation group *TRAFFIC* found 6,040 were seized globally that were intended to be sold in the pet trade.

## 6. Low-Level Basalt Plateau

### In News

New plateau type discovered from *Maharashtra* could prove to be a repository of information to study climate change effects on species survival.

### **About new Low-altitude basalt plateau**

- Researchers recently discovered a rare Low-altitude basalt plateau in Manjare village, Thane district.
- It is located at the *Northern western Ghats and is standing 156 m above mean sea level.*
- This is the *fourth type of plateau* to be identified in the region. The other three are laterites at high and low altitudes and basalt at high altitudes.

## 7. Bandipur Tiger Reserve

### In News

Bandipur Yuva Mitra educational programme for children to be jointly organised by National Museum of Natural History (NMNH) and Banipur Tiger Reserve.

- Bandipur Tiger Reserve is the part of *Bandipur National Park, Karnataka.*
- It was established as a tiger reserve under *Project Tiger in 1973.*
- It is part of the *Nilgiri Biosphere Reserve since 1986.*
- *It is surrounded by Mudumalai Tiger Reserve in the South, Wayanad Wildlife Sanctuary in the South West & on the North West Side the Kabini Reservoir separates the Bandipur and Nagarahole Tiger Reserve.*



## 8. Purse Seine Fishing

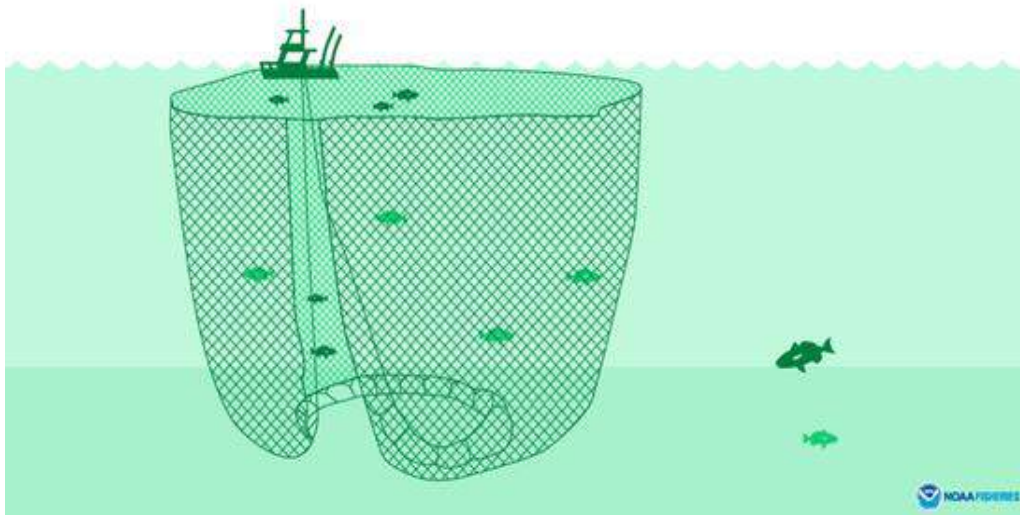
### In News

Supreme Court allows purse seine fishing twice a week outside Tamil Nadu's territorial waters.

### **About Purse Seine**

- Purse seines are used in the *open ocean* to target *dense schools fishes* like tuna and mackerel.
- It has a vertical net curtain used to surround the school of fish, the bottom of which is then drawn together to enclose the fish, rather like tightening the cords of a drawstring purse.

- Purse-seine fishing in open water is generally considered to be an **efficient form of fishing**.
- It has **no contact with the seabed** and can have low levels of **bycatch** (accidental catch of unwanted species).
- The fisheries using purse seines must ensure that they leave enough fish in the ocean to reproduce.
- In some States, this technique linked to concerns about the decreasing stock of small, pelagic shoaling fish such as sardines, mackerel, anchovies and trevally.



## 9. Indus Water Treaty (IWT)

### In News

India sends notice to Pakistan to amend 1960 Indus Water Treaty after Pakistan unilaterally decided to approach a court of arbitration at The Hague to resolve disputes over the Kishenganga and Ratle hydropower projects

### About the Treaty

- It was signed in 1970 between India and Pakistan and **brokered by the World Bank**.
- It fixed and delimited the rights and obligations of both countries concerning the use of the waters of **the Indus River system**.
- The Treaty gives control over the **waters of the three Eastern Rivers (Beas, Ravi and Sutlej) to India and the Western Rivers (Indus, Chenab and Jhelum) to Pakistan**.
- It provided for the funding and building of **dams, link canals, barrages, and tube wells**.
- It created a **Permanent Indus Commission, with a commissioner from each country**.
- The Indus River rises in the southwestern Tibet and flows through Kashmir region and then into Pakistan to **drain into the Arabian Sea**.





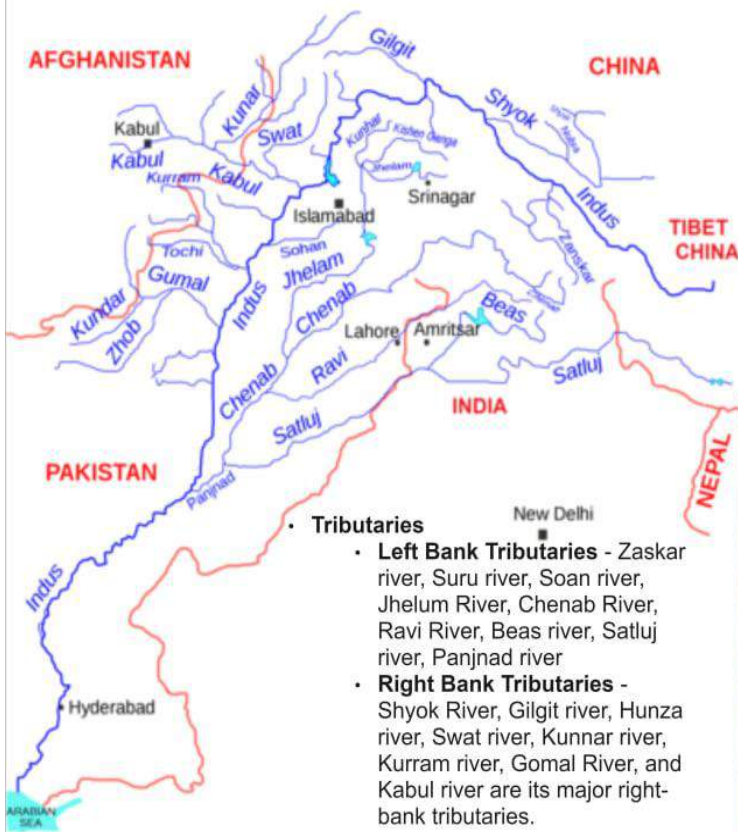
## Indus River and Indus Water Treaty

### Why in news?

- India announced on Friday that it wants to modify the 62-year old Indus Waters Treaty (IWT) with Pakistan, citing what it called Pakistan's "intransigence" in resolving disputes over the Kishenganga and Ratle hydropower projects, both in Jammu and Kashmir.

### Indus River

- Origin - Bokhar Chu in the Tibetan region in the Kailash Mountain range near the Mansarovar Lake.
- Associated Civilisation - Indus Valley Civilization
- The river flows into the Ladakh region in India from a place called Demchok.
- Mouth - Arabian sea near Karachi
- The blind Indus River Dolphin, a sub-species of dolphin, is found only in the Indus River.



### Indus Water Treaty

The Indus river system is critical to both India and Pakistan. A look at the Indus Waters Treaty of 1960

- The Indus system of rivers comprises the main river and its tributaries, namely Ravi, Beas, Sutlej, Jhelum and Chenab



**Strong currents:** The Beas flowing through Manali in Himachal Pradesh.

- The treaty provides India absolute control of all the waters of the eastern rivers – Ravi, Sutlej and Beas

- Pakistan shall receive for unrestricted use all waters of the western rivers – Indus, Jhelum and Chenab

- India is permitted to use the waters of the western rivers for domestic use, non-consumptive use, agriculture and generation of hydro-electric power subject to certain conditions



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## 10. Cheetah project

### In News

- India inks pact with *South Africa to bring 12 Cheetahs*. Seven male and five female cheetahs are expected to reach Kuno NP by February 2023.

### **About Project Cheetah**

- Cheetahs were formally declared as extinct in 1952 by Government of India.
- Efforts were made to introduce Asiatic Cheetah from Iran, but failed.
- In 2020 India and the Republic of Namibia signed a Memorandum of Understanding (MoU) with the Namibian government agreeing to donate the *eight* Cheetahs to launch the programme.
- Eight cheetahs from Namibia were reintroduced in Kuno National Park, (MP) in Sept 2022
- Recently India has signed *an agreement with South Africa to translocate 12 cheetahs* to the *Kuno National Park in Madhya Pradesh*.
- Cheetahs are listed as “Vulnerable” by the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species.

## 11. Airport Carbon Accreditation (ACA)

### In News

Eight Indian airports get carbon accreditation.

### **What is Carbon accreditation?**

- *Airport Carbon Accreditation (ACA)* is a *global carbon management* certification programme for airports.
- It is a programme for airports of all sizes, extending beyond hubs and regional airports.
- It is also the *only global, airport-specific carbon standard* which relies on internationally recognised methodologies.
- Eight Indian airports have been awarded the *Airports Council International’s* Airport Carbon Accreditation in the Asia Pacific and Middle East region.

## 12. Noble's Helen

### In News

Noble's Helen: Arunachal Pradesh yields *India's newest butterfly*.

### **About Noble's Helen**

- It is a *swallowtail butterfly*.
- Its previous habitat ranges from *Myanmar and southern China to Vietnam*
- This species of swallowtail butterfly was last recorded in 1999.
- It was recorded for the first time in India from three locations in the *Namdapha National Park of Arunachal Pradesh*.



## SCHEMES/INITIATIVES

### 1. Grameen Udyami Scheme

#### In News

Union Minister of State for Skill Development & Entrepreneurship and Electronics & IT Shri Rajeev Chandrasekhar to attend the felicitation programme of 200 tribal women under the Grameen Udyami Scheme.

- **Ministry:** Ministry of Skill Development and Entrepreneurship
- **Aim of the Scheme:** It aims to train tribal students in select states.
- It is funded by **National Skill Development Corporation (NSDC)**.
- It is implemented under **Sansadiya Parisankul Yojana**.
- The project is being implemented in six states - **Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, Jharkhand, and Gujarat**.

### Grameen Udyami Scheme

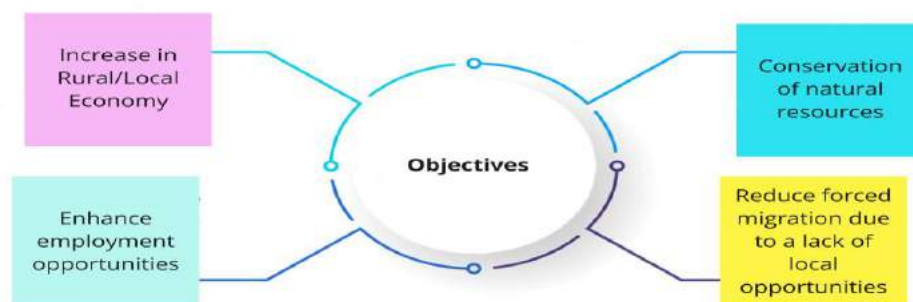


#### Why in news?

- Union Minister of State for Skill Development and Entrepreneurship and Electronics and IT, felicitated over 200 tribal women who have successfully completed training under Phase 3 of the Grameen Udyami Scheme.

#### Grameen Udyami Scheme

- Aim - To expand skill training in tribal communities for their inclusive and sustainable growth and provide multiple skills to India's youth and impart practical skills to them for enabling livelihoods.
- Fund - By National Skill Development Corporation (NSDC)



### ***The National Skill Development Corporation (NSDC)***

- It is a non-profit public limited company established under the Companies Act, 1956.
- The Ministry of Finance established NSDC as a Public Private Partnership (PPP) model.
- The **Government of India**, through the Ministry of Skill Development and Entrepreneurship (MSDE), **owns 49% of NSDC**, while the **private sector owns the remaining 51%**.
- The organisation provides funding to develop scalable and successful initiatives for vocational training.

## **2. Sagar Parikrama**

### **In News**

Department of Fisheries conducts planning meeting for ‘Sagar Parikrama’ Phase III.

- **Ministry:** Ministry of Fisheries, Animal Husbandry & Dairying

### **About Sagar Parikrama**

- It is a **navigation journey** to be conducted in all coastal states/UTs through a pre-decided sea route to demonstrate solidarity with all fisherfolk, fish farmers and concerned stakeholders.
- It is envisioned as a part of ‘Azadi Ka Amrit Mahotsava’ saluting our great freedom fighters, sailors and fishers.
- It envisages creation of **awareness on various other schemes and programs** of the Government of India.
- The Phase –I programme of ‘Sagar Parikrama’ was organized in **Gujarat**.
- Phase III program of ‘Sagar Parikrama’ is being organized in the state of **Maharashtra**.

## **3. Atal Bhujal Yojana**

### **In News**

National Level Steering Committee reviews overall progress of Atal Bhujal Yojana.

- **Ministry:** Ministry of Jal Shakti

### **About the Yojana**

- Atal Bhujal Yojana is a **groundwater management** scheme launched by Prime Minister Narendra Modi on the 95th birth anniversary of former Prime Minister Atal Bihari Vajpayee, in 2019.

- The major objective of the Scheme is to improve the management of groundwater resources in *select water stressed areas in identified states*.
- The convergence will result in incentives to State Governments for suitable investments, aided by strong data base, scientific approach and community participation.

**Implementing Agencies**

- At the central level, **CGWB** under the MoWR, RD&GR will steer the project.
- At the state level, **State Program Implementation Agency (SPIA)** and Technical Support Agency/Nodal agencies will be responsible.
- **District Program Management Unit (DPMU)** will be established in each program district identified, to support the state.



#### 4. **Export Promotion Capital Goods (EPCG) Scheme.**

##### **In News**

EPCG Scheme Relaxed for Sectors Affected by COVID-19 Pandemic

##### **About the Scheme**

- **Ministry: Ministry of Commerce and Industry**
- The EPCG scheme is a trade promotion scheme that allows *duty-free import of capital goods for the purpose of export production in India.*
- The scheme is administered by the **Directorate General of Foreign Trade (DGFT)** and is governed by the Foreign Trade Policy of India.
- It allows import of capital goods for pre-production, production and post-production at *zero customs duty.*
- Capital goods imported under EPCG for physical exports *were exempt from IGST and Compensation Cess.*
- The sectors included for relaxation are Hotel, Healthcare, and Educational sectors.
- **Capital goods** are physical assets *that a company uses in the production* process to manufacture products and services that consumers will later use. It *includes buildings, machinery, equipment, vehicles, and tools*

#### 5. **Ayushman Bharat School Health and Wellness Programme**

##### **In News**

Three years on, Ayushman Bharat School Health and Wellness Programme has less than 50% uptake.

- **Ministry:** Ministry of Health and Family Welfare and Ministry of Human Resource & Development.
- School Health & Wellness Programme was launched under **Ayushman Bharat Programme.**
- Objectives of the Programme
  - ✓ To **provide age appropriate information** about health and nutrition to the children in schools.
  - ✓ To **promote healthy behaviours** among the children that they will inculcate for life.
  - ✓ To detect and treat diseases early in children and adolescents including identification of **malnourished and anaemia.**
  - ✓ To promote use of **safe drinking water** in schools
  - ✓ To promote safe **menstrual hygiene** practices by girls

- ✓ To promote *yoga and meditation* through Health & Wellness Ambassadors.
- ✓ To *encourage research* on health, wellness and nutrition for children.
- It is being implemented in *government and government aided schools*

**Current Status of Programme**

- Only 15 of India’s States have started weekly 40-minute classroom sessions with students.
- Only four States and UTs – Andhra Pradesh, Sikkim, Chandigarh, Dadra and Nagar Haveli – have achieved 100% coverage.

**6. Monument Mitra scheme**

- **Ministry:** Ministry of Culture
- It was launched in 2017 by *Ministry of Tourism and recently transferred to the Ministry of Culture.*

**Revamped Monument Mitra scheme**

- It will be revamped to enable private firms to partner for the upkeep of 1,000 ASI monuments.
- The *new target* is to have MoUs signed with partners for *500 sites* under the revamped Monument Mitra scheme by *August 2023.*

## Monument Mitra Scheme



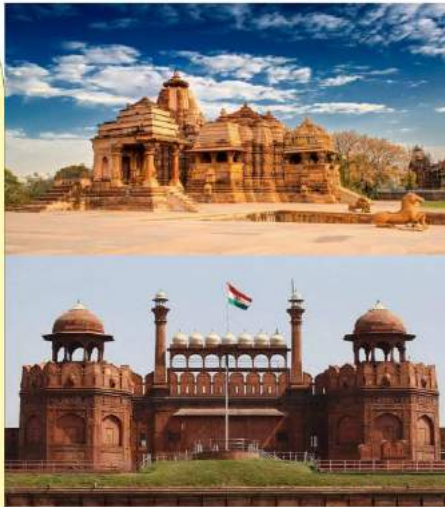
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**Why in news?**

- The Secretary of the Ministry of Culture recently said that the government will hand over around 1,000 monuments under the control of the Archaeological Survey of India to the private sector for their upkeep under the Monument Mitra Scheme.

**Monument Mitra Scheme**

- Ministry - Ministry of Culture
- Aim - Ensuring quality and inclusive provision of amenities and facilities across heritage, natural, and tourist sites through the active participation of private and public sector organizations and individuals.
- Features
  - Corporate entities will take over these monuments as part of their Corporate Social Responsibility.
  - These organizations would be known as "Monument Mitras" for their collaboration initiative.
  - The government has set the target to hand over 500 sites under the revamped Monument Mitra Scheme by the end of Azadi ka Amrit Mahotsav on 15 August 2023.



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## 7. Jal Jeevan Mission In News

11 Crore Rural Households in India now have access to tap Water Connection.

- **Ministry:** Ministry of Jal Shakti
- **Aim of Mission:** To provide all rural households with adequate quantity (55 lpcd) water of prescribed quality in adequate pressure, on regular and long-term basis.

### About the Mission

- Jal Jeevan Mission was started to provide safe and adequate drinking water through individual household tap **connections by 2024 to all households in rural India.** ('Har Ghar Jal'.)
- It is being implemented as a decentralized, demand-driven community-managed programme.
- In 2020 a campaign was launched to provide tap water connection in all schools, anganwadis centres and ashramshalas (tribal residential schools).

# Jal Jeevan Mission



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#### Why in news?

- As per government data the government had provided 11 crore rural households with a tap water connection.
- Data from the Ministry suggest that 56% of the targeted 19.3 crore households had been covered.

#### Key Points

- In September 2022, 53% of the households, or 10.2 crore households, had been covered.
- In villages where the Jal Jeevan Mission (JMM) has reached, the adolescent girls no longer drop out of school to help their mother walk long distances and get water to quench their thirst.

#### Jal Jeevan Mission

- Launch - 2019
- Aim - It envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024.
- Ministry - Jal Shakti Ministry
- Funding - Centrally Sponsored Scheme



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## 8. Open Market Sale Scheme

### In News

Govt. approves proposal for sale of 30 LMT of *wheat* under Open Market Sale Scheme.

### **About Open Market Sale Scheme**

- It is referred to the *selling surplus stocks of wheat and rice by Food Corporation of India* at pre-determined prices *through e-auction* for a maximum quantity of 3000 MT per buyer in the open market from time to time.
- It is to enhance the supply of food grains, especially wheat during the lean season and thereby moderate the open market prices especially in the deficit regions.
- Wheat will also be offered to *State Governments/UTs for their schemes without e-auction.*
- Wheat will be offered at *concessional rates* to *Govt PSUs/cooperatives/Federations, Kendriya Bhandar/NCCF/NAFED etc without e-auction.*

## 9. Nidhi Aapke Nikat 2.0

### In News

EPFO to launch a massive District Outreach Programme, Nidhi Aapke Nikat 2.0.

- *Aim of Programme:* To reach out to all the districts in the country on the same day every month.

### **About Nidhi Aapke Nikat 2.0**

- It will be a *grievance redressal platform.*
- It is also a *information exchange network for the employers and the employees*
- It will also be *a platform for exchange of information with the district level authorities of various State and Central Government departments.*
- It will have a help desk where members will get the online services like filing of online claim etc.



## 10. e-Gram SWARAJ 2.0

### In News

*Ministry of Panchayati Raj* organized Manthan: Charting New Paths, an Industry consultation on e-Gram SWARAJ 2.0

### **About e-Gram SWARAJ**

- The e-Gram Swaraj is a user-friendly *web-based portal* for strengthen *e-Governance in Panchayati Raj Institutions (PRIs) across the country.*
- There is a seamless integration between eGramSwaraj Portal and Local Government Directory (LGD) through Unique Codes allocated to each PRI.
- The Portal is also integrated with Audit Online for auditing as per CAG guidelines.

## **INTERNATIONAL ORGANISATIONS/INITIATIVES**

### **1. Intergovernmental Technical Working Group on Animal Genetic Resources for Food and Agriculture (WG AnGR)**

#### **In News**

*India elected as Vice-Chair* at the 12th session of *FAO's WG AnGR*

#### **About WG AnGR**

- It was established by the *Commission on Genetic Resources for Food and Agriculture*.
- Functions of Working Group:
  - ✓ Review the situation and issues related to *agro biodiversity in the area of animal genetic resources for food and agriculture*.
  - ✓ Consider the progress made in implementing the Commission's programme of work on animal genetic resources for food and agriculture.
- India was elected as Vice-Chair in the recently concluded 12th Session of WG AnGR and represented Asia & Pacific region.

#### **Commission on Genetic Resources for Food and Agriculture**

- It is the *only permanent intergovernmental body that specifically addresses all components of biological diversity for food and agriculture*. It established in 1983 as the Commission on Plant Genetic Resources for Food and Agriculture.
- *Its membership comprises 178 countries and the European Union*.
- It aims to reach international consensus on policies for the *sustainable use and conservation of genetic resources* for food and agriculture and the fair and equitable sharing of benefits derived from their use.

### **2. Non-Aligned Movement**

#### **In News**


India and Egypt reiterate support for Non-Aligned Movement (NAM).

#### **About NAM**

- It is an international organization dedicated to representing the interests and aspirations of developing countries.
- The Non-Aligned Movement was founded and held its first conference (*the Belgrade Conference*) in 1961.
- *It has 120 member countries*.
- It was emerged in the context of the wave of *decolonization that followed World War II*.

- The states of the Non-Aligned Movement *cannot be part of a multilateral military alliance.*
- It does not signify that a state ought to remain passive or even neutral in international politics.
- The Non-Aligned Movement *has no formal constitution or permanent secretariat.*
- All members of the Non-Aligned Movement *have equal weight within its organization.*

## Non Alignment Movement




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Highway to Success

**Why in news?**







- India and Egypt reiterate support for Non - Aligned Movement.

**Non - Aligned Movement**

- After the United Nations, it is the largest grouping of states worldwide.
- The Non-Aligned Movement (NAM) is a forum of 120 developing world states that are not formally aligned with or against any major power bloc.
- The movement originated in the 1950s during Cold War.
- The principles were agreed at the Bandung Conference in 1955, and the Non-Aligned Movement was established in 1961 in Belgrade, Yugoslavia



**Founder Members of Non Alignment Movement**

 01	 02	 03
 04	 05	 06

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### 3. International North–South Transport Corridor (INSTC)

#### In News

Workshop conducted on Linking Chabahar Port with INSTC.

#### About INSTC

- International North-South Transport Corridor (INSTC) is a 7,200-km-long *multi modal transportation*. It has network of *ship, rail, and road route*.
- It was for the purpose of promoting transportation cooperation among the Member States.

- It is for moving *freight between India, Iran, Azerbaijan, Russia, Central Asia and Europe.*

## International North-South Transport Corridor



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**Why in news?**

- The Ministry of Ports, Shipping and Waterways, in association with India Ports Global Ltd, conducted a workshop on the 'Linking Chabahar Port with INSTC' in Mumbai.

**International North-South Transport Corridor (INSTC)**

- It is a multimodal transportation ( sea, road and rail routes) agreement formed with a trilateral agreement between India, Iran and Russia at the Euro-Asian Conference on Transport in 2000.
- It links the Indian Ocean to the Caspian Sea via the Persian Gulf onwards into Russia and Northern Europe.
- The main purpose of the corridor was to reduce carriage costs and transit time between India and Russia. The transit time is expected to reduce to almost half, once the corridor becomes fully functional.
- The agreement has been ratified by 13 countries namely, Azerbaijan, Belarus, Bulgaria, Armenia, India, Iran, Kazakhstan, Kyrgyzstan, Oman, Russia, Tajikistan, Turkey, and Ukraine.



**Chabahar Port**

- Location - Southeastern Iran in the Gulf of Oman
- It is the only Iranian port with direct access to the ocean.



## ECONOMY

### 1. Expected Loss-Based model

#### In News

RBI moots *Expected Loss-based model for provisioning by banks*. Presently, banks are required to make loan loss provisions based on an '*incurred loss*' approach, which used to be the standard globally till recently.

#### About Expected Loss-based model

- Banks now have to *assess expected loss* on their overall financial assets and *make provisions after assessment, rather than making it after the loan turns into a non-performing asset (NPA)*.
- *Prior to this*, banks used to make loan loss *provisions based on an 'incurred loss' approach*. In this method, banks need to make provisions for losses incurred on loans.
- Under the new framework, banks need to classify their financial assets into one of three categories, viz., Stage 1, Stage 2, and Stage 3, depending on the assessed credit losses on them.
- As of now, these norms are meant for *only scheduled commercial banks, excluding regional rural banks*.
- The *impact* of adopting the *forward looking expected credit loss approach* to estimating loss provisions, is likely to *result in excess provisions* as compared to shortfall in provisions

### 2. Windfall Tax

#### In News

Centre cuts windfall tax on oil, export of diesel, ATF.

#### What Is a Windfall Tax?

- A windfall tax is a *tax levied by governments against certain industries* when economic conditions allow those industries to *experience significantly above-average profits*.
- The U.S. Congressional Research Service (CRS) defines a windfall as an "*unearned, unanticipated gain in income through no additional effort or expense*".
- Windfall taxes are primarily levied on companies in the targeted industry that have *benefited the most from the economic windfall*, most often commodity-based businesses.
- It is generally imposed to companies in situations such as wartime, commodities shortages, and other situations and events that drive up prices.
- *Individuals may also be taxed on windfalls*, such as those from inheritances or lottery winnings.

## Windfall Tax in India

- India **first imposed windfall profit taxes in 2022**
- The tax rates are **reviewed every fortnight based on average oil prices** in the previous two weeks.
- The government levies tax on windfall profits made by oil producers on any price they get above a threshold of \$75 per barrel.

## 3. Passive debt funds

### In News

Navigating passive debt funds.

### What are Passive debt funds?

- Passive debt funds are **fixed income mutual fund schemes which track debt or money market instruments**.
- These funds **invest in debt or money market instruments like Government Securities (Gilts / G-Secs)**, State Development Loans (SDL), PSU bonds, and Tri Party Repos (TPTs) etc.
- It will work as a more tax-efficient alternative to fixed deposits and small savings schemes.

## 4. Sovereign Green Bonds

### In News

RBI says **no foreign investment cap on sovereign green bonds**.


### What is sovereign green bonds?

- A green bond is a **debt security** that is issued to **raise capital to support climate-related or environmental projects**, according to the World Bank.
- Sovereign green bonds are **issued by governments** to raise resources to support climate-related or environmental projects.
- It is a part of the government's overall market borrowings in 2022-23.
- It will be issued for mobilising resources for green infrastructure.
- The government released the framework for sovereign green bonds in 2022.
- The framework listed investments in solar, wind, biomass, and hydro energy projects, and urban mass transportation projects.
- **The government excluded projects such as fossil fuels, nuclear power generation, and direct waste incineration.**
- The sovereign green bonds issued by the Indian government **will not have any restrictions on foreign investment**.



- It will be counted as specified securities under the *fully accessible route*.

## Sovereign Green Bonds



ENLITE IAS

**Why in news?**


- The sovereign green bonds issued by the Indian government will not have any restrictions on foreign investment, the Reserve Bank of India said.
- Such securities will be counted as specified securities under the fully accessible route, the central bank said.

**What is a Bond?**

- A bond is a fixed-income instrument that represents a loan made by an investor to a borrower (typically corporate or governmental).
- Bonds are used by companies, municipalities, states, and sovereign governments to finance projects and operations.
- Owners of bonds are debtholders, or creditors, of the issuer.

**Sovereign Green Bonds:**

- It is a type of fixed-income instrument that is specifically earmarked to raise money for climate and environmental projects.
- History
  - The first green bond was issued in 2007 by the European Investment Bank, the EU's lending arm.
  - This was followed a year later by the World Bank.
  - In India it is announced as part of Budget 2022 speech



**Aims and Objectives of SGB:**

- They are aimed at energy efficiency, pollution prevention, sustainable agriculture, fishery and forestry, the protection of aquatic and terrestrial ecosystems, clean transportation, clean water, and sustainable water management.
- They also finance the cultivation of environmentally friendly technologies and the mitigation of climate change.



## HISTORY/ART & CULTURE

### 1. Purana Qila

#### In News

Archaeological Survey of India all set to begin Excavation at Purana Qila again.

#### About Purana Qila

- The Purana Qila is a monument that stands on the South Eastern part of the present city of New Delhi.
- It was **built by the Mughal Emperor Humayun as a part of his new city of Dinpanah in the 16th century.**
- Purana Qila is often called the "**Pandavon ka Qila**".
- It is a conglomerate of various structures that lie scattered over an area of more than 300 acres.
- It was surrounded by a wide moat that was linked to **the river Yamuna.**
- It has three Gateways:
  - ✓ The **Bada Darwaza**, acts as the main and only point of entry to the fort today.
  - ✓ The **Humayun Darwaza** is the southern entry to the fort complex.
  - ✓ The **Talaqi Darwaza or the Forbidden Gate**, is located on the northern side of the complex.
- **Qila-e-Kuhna mosque** is a prominent structure of the Purana Qila built by **Sher Shah in 1542 CE.**
- It also have Sher Mandal, baoli, hammam.
- During the Partition of India in 1947, hundreds of refugees are said to have camped at the Purana Qila for several months.

#### Excavations in Purana Qila

- Excavations at this site revealed a few shards of pottery belonging to the Painted Grey Ware (PGW), that historians trace to the Mahabharata period (1500-1000 BCE).

### 2. Sammed Shikhar

#### In News

NCM chief claims Jains pacified by govt. decision on Sammed Shikhar.

#### About Sammed Shikhar


- **Sammed Shikhar** also known as **Shikharji**, is **one of the Holiest pilgrimage sites for Jains, in Giridih district, Jharkhand.**
- It is located on **Parasnath hill**, the **highest mountain** in the state of **Jharkhand.**

- It is the **most important Jain Tirtha (pilgrimage site) for both Digambara and Śvētāmbara.**
- It is the place *where twenty of the twenty-four Jain tirthankaras (supreme preachers of Dharma) along with many other monks attained Moksha.*
- It is one of the five principal pilgrimage destinations of Jains.

**The five main pilgrimage destinations for Jains are:**


- **Shikharji** - located in **Jharkhand**, India and considered the most sacred site for Jains.
- **Palitana** - located in **Gujarat**, India and known for its thousands of Jain temples.
- **Sammed Shikharji** - located in **Jharkhand**, India and considered one of the most important pilgrimage sites for Jains.
- **Pawapuri** - located in **Bihar**, India and the site where Lord **Mahavira** attained kaivalya.
- **Mount Abu** - located in **Rajasthan**, India and home to the famous Dilwara Temples, a complex of Jain temples.

## Parsanath Hill



**Parsanath Hill**

- The Parasnath Hills are a range of hills located in the Giridih district of Jharkhand, the highest of which is 1350 meters high.
- This hill has been named Parasnath after the 23rd Jain Tirthankara.
- As per Jain Religion, Parsanath Paravath is where 20 Tirthankaras out of 24 Jain Tirthankaras, attained Kaivalya .
- For each of these a temple (Gumti or Tuk) has been built on the hill
- Both Digambara and Svetambara consider it to be the most significant Jain Tirtha (pilgrimage destination)
- Jains call it Sammed Shikhar.( Sammed Shikharji Jain Temple)



**Recent Development at Sammed Shikhar**

- In 2019, the Union Environment Ministry notified **an eco-sensitive zone around the Parasnath Sanctuary.**
- Union government approved eco-tourism activities in pursuance of the proposal submitted by the state government.
- The state government moves to promote religious tourism at Parasnath Hill.

- Recently the Centre and the Jharkhand government have decided that the Sammed Shikharji will remain a place of pilgrimage and not be converted into a tourism hub.

### 3. Charaideo moidams

In News

Ahom burial sites to vie for UNESCO tag.

#### About Charaideo Moidams

- The Charaideo moidams are *royal burial sites of the Ahom dynasty*.
- They ruled over much of *Assam and the North East from 1228 to 1826 AD*.
- Central government has decided to put forth the name of Assam's Charaideo moidams burial sites for addition to UNESCO World Heritage Sites list.

## Charaideo Moidam



#### Why in news?

- The Central Government has decided to send a proposal to UNESCO nominating Charaideo Moidam of Ahom Kingdom as a World Heritage Site.

#### Charaideo Moidam

- Location - At the foothills of Nagaland , Assam.
- Charaideo commonly known as 'Pyramids of Assam' was the original capital of the Ahom Kings.
- Charaideo remained the symbolic center of Ahom Kingdom even though the capital of the kingdom moved many times.
- It was built by Chaolung Sukhapa the founder of the dynasty in about 1229 CE.
- Architecture
  - It comprises a massive underground vault with one or more chambers having domical superstructure and covered by a heap of earthen mound and externally it appears a hemispherical mound.



#### 4. **Buddhist monastery complex at Bharatpur**

##### **In News**

Excavations reveal Buddhist monastery complex at *Bharatpur of Bengal*.

##### **Unique feature of the excavation site**

- *Only Buddhist sites with the presence of a large stupa*, along with a monastery complex and black and red ware pottery, from the Chalcolithic or Copper Age.

#### 5. **Amrit Udyan**

##### **In News**

*Mughal Gardens will now be called as Amrit Udyan.*

##### **About Amrit Udyan**

- The iconic Mughal Gardens at the *Rashtrapati Bhavan (President's House) in Delhi* have been renamed to Amrit Udyan.

##### **History of Mughal Gardens**

- It has *rectilinear layouts, divided in four equal sections*.
- These gardens can be found across lands previously ruled by the Mughals.
- The gardens surrounding *Humayun's Tomb in Delhi to the Nishat Bagh in Srinagar*, all are built in this style.
- A defining feature of these gardens is the *use of waterways*, often to demarcate the various quadrants of the garden.
- The waterways are crucial to maintain the flora of the garden, they also were an important part of its aesthetic.
- *They have fountains, symbolising the "cycle of life."*

##### **Mughal Gardens in Rashtrapati Bhavan**

- It was designed by *Edwin Lutyens*.
- It is spread across 15-acres
- It *incorporates both Mughal and English landscaping styles*.
- The main garden has two channels intersecting at right angles dividing the garden into grid of squares.
- It is called a *Charbagh (a four cornered garden) - a typical characteristic of the Mughal landscaping*.

## 6. Vitasta programme

### In News

PM praises Vitasta programme showcasing rich culture, arts and crafts of Kashmir.

**Ministry: Ministry of Culture**

### About the Programme

- *Vitasta programme* was organised to **showcase rich culture, arts and crafts of Kashmir.**
- The programme extends the historical identity of Kashmir to other states.
- A grand musical event organized to pay tributes to legendary music luminary Pt. Jagan Nath Shivpuri
- It is a symbol of the spirit of 'Ek Bharat Shreshtha Bharat'.

## **SCIENCE AND TECHNOLOGY**

### **1. Doppler Weather Radar Network**

#### **In News**

*Entire Country will be covered by Doppler Weather Radar Network by 2025 to predict extreme weather events more accurately.*

#### **About Doppler Weather Radar Network**

- A Doppler radar network is a **system of multiple radar station** that work together to provide comprehensive coverage of a specific area.
- The system uses the **Doppler effect** to **detect and track moving objects, such as weather systems, aircraft, and vehicles.**

#### **How it works?**

- Each station in the network includes a **radar transmitter and a radar receiver**, for sending out and detecting the reflected signal.
- **The radar signal reflects off any moving objects in its path.**
- The **change in frequency of the signal due to the Doppler effect** is used to determine the **speed and direction of the moving object.**
- **Doppler effect :**  
The Doppler effect is the **change in frequency** or pitch of a wave (such as sound or light) caused by the **relative motion** between the source of the wave and an observer. If the **source is moving towards the observer, the frequency will appear higher**, and if the source is moving away, it will appear lower. It is commonly experienced when a siren on a moving ambulance changes pitch as it approaches and passes by.

#### **Applications of Doppler radar network**

- Weather forecasting and severe weather warning, tracking of aircraft and vehicles, and also used in meteorology and atmospheric sciences.
- Information about storm systems, including the location, size, and movement of thunderstorms, tornadoes, and other severe weather events.

### **2. National aquifer mapping**

#### **In News**

National aquifer mapping to be completed in a year, says Clean Ganga official.

#### **About aquifer mapping**

- **An aquifer is a body of rock and/or sediment that holds groundwater.**

- ***Aquifer mapping is a scientific process***, wherein a combination of geologic, geophysical, hydrologic and chemical field and laboratory analyses are applied to characterize the quantity, quality and sustainability of ground water in aquifers.

### **Advantages of Aquifer mapping**

- Systematic aquifer mapping is expected to improve our understanding of:
  - ✓ Geologic framework of aquifers
  - ✓ Hydrologic characteristics
  - ✓ Water levels in the aquifers and how they change over time

### **National Project on Aquifer Management**

- ***Central Ground Water Board (CGWB)*** is the implementing agency of ***National Project on Aquifer Management (NAQUIM)***.
- It was ***launched in 2012*** on the basis of the recommendations of the 12th Plan Working Group on Sustainable Groundwater Management.

## **3. ChatGPT**

### **In News**

Does ChatGPT have an ethics problem?

### **What is it?**

- ChatGPT is a large ***language model chatbot developed by OpenAI based on GPT-3.5***.
- ChatGPT was created by San Francisco-based artificial intelligence ***company OpenAI***.
- It has a remarkable ability to ***interact in conversational dialogue form and provide responses***.
- In ChatGPT large language models perform the ***task of predicting the next word in a series of words***.
- ***Reinforcement Learning with Human Feedback (RLHF)*** is an additional layer of training that uses human feedback to help ChatGPT learn the ability to follow directions and generate responses.

### **Features of ChatGPT**

- ChatGPT is ***versatile***.
- ChatGPT attempts to ***reduce harmful and deceitful responses***.
- ChatGPT ***remembers previous prompts given to it*** in the same conversation.

### **Limitations of ChatGPT**

- It sometimes ***writes plausible-sounding but incorrect or nonsensical answers***.
- It is designed around human oversight, can be over-optimized and thus hinder performance



- ChatGPT has limited knowledge of events that occurred after 2021.
- It suffers from algorithmic bias, which may be revealed when ChatGPT responds to prompts including descriptors of people.

#### 4. Shukrayaan I

##### In News

**ISRO likely to push *Venus mission 'Shukrayaan I' to 2031.***

##### About Shukrayaan I

- Shukrayaan-1 is a planned orbiter to Venus by the Indian Space Research Organisation (ISRO) ***to study the surface and atmosphere of Venus.***
- The idea was born in 2012.
- Shukrayaan I will be an orbiter mission.
- Optimal launch windows from earth to Venus occur once around every 19 months.

##### Why it is postponed?

- It was originally scheduled for a 2023 launch but now the 2031 window is better.
- ***More optimal windows which reduce the amount of fuel required at lift-off, come around every eight years.***
- ***U.S. and the European space agencies' Venus missions VERITAS and EnVision are planned for 2031.***

# Shukrayaan I Mission



## Why in news?

- The Indian Space Research Organisation (ISRO) is yet to receive approval from the Indian government for the Shukrayaan I and that the mission could as a result be postponed to 2031.

## Shukrayaan I Mission

- It is also called the Venus Mission.
- The Shukrayaan I mission will be an orbiter mission.
- Aim - Study geological and volcanic activity, emissions on the ground, wind speed, cloud cover, and other planetary characteristics from an elliptical orbit.
- Payload - A high-resolution synthetic aperture radar and a ground-penetrating radar.
- Optimal launch windows from Earth to Venus occur once every 19 months.

## Venus

- Venus is often called "Earth's twin" because they're similar in size and structure.
- It rotates very slowly on its axis – one day on Venus lasts 243 Earth days.
- The thick atmosphere of Venus traps heat creating a runaway greenhouse effect making it the hottest planet in our solar system.
- It is named after the Roman goddess of love and beauty.
- It is the second planet from the Sun and sixth in the solar system in size and mass.
- It is the second brightest natural object in the night sky after the Moon.
- Venus and Uranus spin clockwise on their axis.

## 5. Dark-Sky Reserve

### In News

The dark sky is a natural resource, and too much light is polluting it.

### About Dark-Sky Reserve

- Dark Sky Reserve is a **public or private land possessing an exceptional or distinguished quality of starry nights and nocturnal environment.**
- It should be an area whose skies were free of light pollution.

### Dark-Sky Reserve in India

- The district administration of **Ladakh** designated six hamlets within the **Changthang Wildlife Sanctuary** a “dark-sky reserve”.
- The sanctuary spreads across 1,073 square kilometres (sq km) of area surrounding the high-altitude Indian Institute of Astrophysics (IIA) facility called **Indian Astronomical Observatory (IAO)**.
- Dark Sky Reserve aims to lower light pollution in the region.
- It is an initiative by the Ladakh Autonomous Hill Development Council (LAHDC), the Union Territory administration, and the Indian Institute of Astrophysics, Bengaluru.

## Dark Sky Reserve

### Dark Sky Reserve

- Announced by - Department of Science & Technology (DST)
- Location - Hanle, Ladakh
- Other Place Near to it -Changthang Wildlife Sanctuary.

### What is it and who designates it ?

- It is a designation given to a place that has policies in place to ensure that a tract of land or region has minimal artificial light interference.
- The International Dark Sky Association is a U.S.-based non-profit that designates places as International Dark Sky Places, Parks, Sanctuaries and Reserves

### Why the designation is significant?

- Boost astro tourism that result in generation of employment for youth.
- Enhance region based astronomical studies.
- Astronomical knowledge and skill for local people.



## 6. Norovirus

### In News

Two students in Kerala infected with Norovirus.

### What is Norovirus?

- Norovirus is a very **contagious virus that causes vomiting and diarrhea.**
- **People of all ages** can get infected and sick with norovirus.
- Norovirus is sometimes called the **stomach flu or stomach bug.**
- The most common symptoms are Diarrhea, Vomiting, Nausea, Stomach pain.
- It **transmits from one person to other by:**
  - ✓ Having **direct contact with an infected person**
  - ✓ **Consuming contaminated food or water**
  - ✓ The virus spreads through the faecal-oral route.

## Norovirus

### Why in news?

- Kerala report two cases of norovirus.

### Norovirus

- It is a group of viruses that leads to gastrointestinal illness.
- Effect
  - It causes inflammation of the lining of the stomach and intestines, in addition to severe vomiting and diarrhoea.
- Transmission
  - The virus can be transferred from an infected to a healthy individual through contaminated surfaces or food.
  - The virus can primarily be transmitted from oral-faecal.
- Vulnerable Group
  - Children, the elderly and people with comorbidities.



- Symptoms
  - Diarrhoea, Vomiting, Stomach ache, Gastrointestinal problems etc are the symptoms.
- Treatment
  - While there is no specific treatment available to cure the virus, generic medications for diarrhoea and vomiting can help cure the disease.

## 7. BharOS

### In News


Dharmendra Pradhan tests indigenously developed 'BharOS'.

### About BharOS

- The '**BharOS**' is a **Made In India mobile operating system developed by IIT Madras**.
- It aims to reduce the dependence on foreign OS in smartphones and promote the use of locally developed technology.
- It a new mobile operating system focused on **privacy and security**.
- It is an **Indian government-funded project to develop a free and open-source operating system (OS) for use in government and public systems**.
- The OS can be **installed on commercial off-the-shelf handsets**.
- The poor people of the country will be the main beneficiary of a strong, indigenous, dependable & self-reliant digital infrastructure.

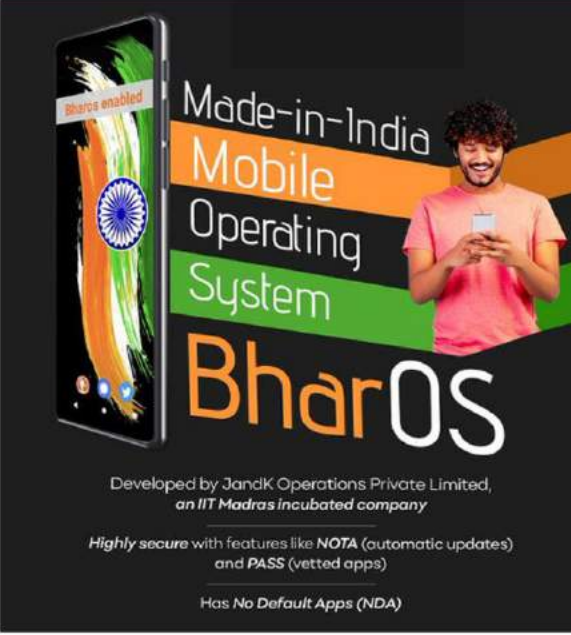


- It has a **No Default Apps (NDA) setting, meaning that users do not have to keep or use pre-installed apps** in this mobile operating system
- It would **offer Native Over The Air (NOTA) updates, ie. the security updates and bug fixes** will be automatically installed.

BharOS


**BharOS**

- BharOS is a mobile operating system similar to Android or iOS
- It is based on an AOSP (Android Open Source Project) operating system and does not use any Google apps or services.
- It would support Native Over The Air (NOTA) updates as well as No Default Apps (NDA).
- It has a minimalistic home screen with the Indian flag, a list of app categories, and a selection of apps that have passed the OS's trust and security standards.
- It will employ the Private App Store Services (PASS) system to examine and curate apps that are safe for users.
- These systems enable smartphone users to interact with their devices and access their features while also ensuring their safety.
- Current status: The current version of BharOS includes third-party apps such as DuckDuckGo and Signal by default.



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## 8. Scandium Nitride

### In News

Artificial synapse developed for brain-like computing with industry-compatible Nitride Semiconductors.

### About Scandium Nitride (ScN)

- It is a **binary III-V indirect bandgap semiconductor**.
- It is composed of the **scandium cation and the nitride anion**.
- It forms crystals that can be grown on tungsten foil through sublimation and recondensation.

- It is also an effective gate for semiconductors on a silicon dioxide (SiO<sub>2</sub>) or hafnium dioxide (HfO<sub>2</sub>) substrate.
- It is a semiconducting material with supreme stability and Complementary Metal-Oxide-Semiconductor (CMOS) compatibility.

### Application of ScN

- The scandium nitride (ScN) was used to *develop brain-like computing*.
- This invention can provide a new material for stable, CMOS-compatible optoelectronic synaptic functionalities at a relatively lower energy cost.
- ScN was used to develop a *device mimicking a synapse that controls the signal transmission as well as remembers the signal*.
- ScN is *more stable, CMOS compatible*, and can be seamlessly integrated with existing Si technology.

## 9. Aditya-L1

### In News

*India's first mission to study the sun to begin by June-July 2023.*

### Scientific Objectives of Aditya-L1

- The major science objectives of Aditya-L1 mission are:
  - ✓ *Study of Solar upper atmospheric (chromosphere and corona) dynamics.*

### About Aditya-L1 mission

- ✓ Aditya L1 will be *the first space based Indian mission to study the Sun*.
- ✓ The spacecraft carries *seven payloads to observe the photosphere, chromosphere and the outermost layers* of the Sun (the *corona*).
- ✓ Four payloads carry out remote sensing of the Sun and three of them carrying in-situ observation.
- ✓ The spacecraft will be placed in a *halo orbit around the Lagrange point 1 (L1) of the Sun-Earth system*.

### Advantages of Lagrange point 1 (L1)

- A satellite placed in *the halo orbit around the L1 point can continuously view the Sun without any occultation/eclipses*.
- At L1, four payloads directly view the Sun and the remaining three payloads carry out in-situ studies of particles and fields at the Lagrange point L1.



## Visible Emission Line Coronagraph (VELC)

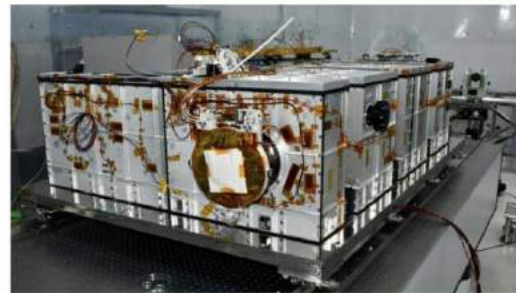


### Why in news?

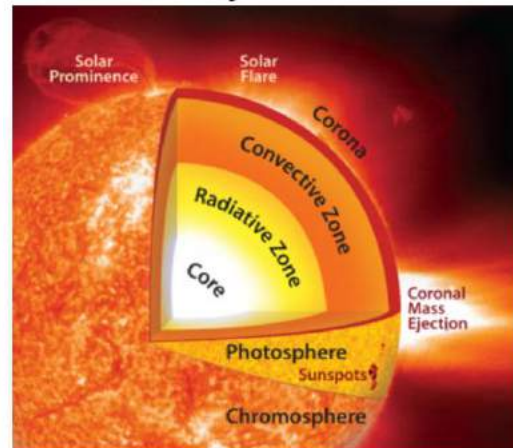
- The handover ceremony of the Visible Emission Line Coronagraph (VELC) which is the primary payload of Aditya-L1 Mission was held recently.

### Visible Emission Line Coronagraph (VELC)

- It is the largest payload that would fly on the Aditya-L1 mission.
- It is an internally occulted solar coronagraph capable of simultaneous imaging, spectroscopy and spectro-polarimetry close to the solar limb.
- The VELC consists of a coronagraph, spectrograph, polarimetry module and detectors, aside from auxiliary optics.
- It is built by the Indian Institute of Astrophysics (IIA) at its CREST (Centre for Research and Education in Science and Technology) campus at Hosakote, Karnataka.
- Purpose:
  - It will observe the solar corona, which is the tenuous, outermost layer of the solar atmosphere.
  - It will analyze the coronal temperature, plasma velocity, density, etc.
  - It will also study Coronal Mass Ejections (CMEs) and the solar wind.



### Layers of Sun



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## 10. iNCOVACC

### In News

Union Health Minister unveils *world's first intranasal COVID19 vaccine, iNCOVACC.*

### **Intranasal Vaccine**

- It is a vaccine administered to a person *via the nose and does not require a needle.*
- It *induces immunity through the inner surface of the nose*, a surface that naturally comes in contact with many airborne microbes.
- Administering a vaccine via the nose is *painless, non-invasive and easier* to perform than using a needle.

### About iNCOVACC

- iNNCOVACC is the *world's first intranasal COVID19 vaccine* to receive approval for the primary 2-dose schedule.
- It can use as a heterologous booster dose.
- It is *developed by Bharat Biotech International Limited (BBIL) in collaboration with Biotechnology Industry Research Assistance (BIRAC).*
- *iNNCOVACC or BBV154 - A novel adenovirus vectored*, intranasal vaccine for COVID-19
- An *intranasal vaccine stimulates a broad immune response – neutralizing IgG, mucosal IgA, and T cell responses.*
- *Immune responses at the site of infection* (in the nasal mucosa) – essential for *blocking both infection and transmission* of COVID-19.

## DEFENCE/MILITARY EXERCISES

### 1. INS VAGIR

#### In News

Fifth *Kalvari Class Submarine Vagir* to be commissioned on Jan 2023.

#### About INS VAGIR

- *INS Vagir (S25) is the fifth submarine* of the first batch of *six Kalvari-class submarines* for the Indian Navy.
- It was launched and named ‘Vagir’ in 2020.
- It is *a diesel-electric attack submarine* based on the *Scorpène class*.
- The Scorpene Submarines have advanced stealth features and are also equipped with both long range guided torpedoes as well as anti-ship missiles.
- These submarine have a state of the art SONAR suite and sensor suite permitting outstanding operational capabilities.
- It was *designed by French naval defence* and energy group Naval Group and manufactured by Mazagon Dock Limited, Mumbai, Maharashtra.

#### INS Vagir



#### Why in news?

- INS Vagir, fifth Scorpene submarine, commissioned
- Navy chief says it is the third submarine inducted into the Navy in a short span of 24 months; the sixth submarine, Vagsheer, is expected to be delivered to the Navy by the end of this year

#### INS Vagir

- Built by - Mazagon Dock Shipbuilders Limited (MDL)
- The design of Kalvari class of submarines is based on Scorpene class of submarines of France which have Diesel Electric transmission systems.
- The Kalvari-class submarines have the capability of operating in a wide range of Naval combat including anti-warship and anti-submarine operations, intelligence gathering and surveillance, and naval mine laying.
- It can reach the highest speeds of 11 knots when surfaced and 20 knots when submerged.
- These submarines have the Air Independent Propulsion (AIP)



#### Names of Ships under Project 75

Name of Ship	Origin of Name
INS Kalvari	Tiger Shark
INS Khanderi	Maratha Emperor Chatrapathi Shivaji Maharaj's island fort of Khanderi.
INS Karani	Karanja island of Maharashtra
INS Vela	Name of an Indian fish from the stingray species
INS Vagir	Name of an from the sandfish species
INS Vagsheer	Name of an from the sandfish

#### Air Independent Propulsion (AIP) Technology

- AIP is a mechanism that allows the batteries to be charged even while the boat is submerged.
- However, even with AIP, the submarine needs to surface every three weeks or so.
- It offers the possibility of increasing underwater endurance by a factor of up to 3 or 4, which reduces the indiscretion ratio significantly.


## 2. Exercise Cyclone – I In News

Inaugural Edition of *Indo-Egypt Joint Training Exercise Cyclone - I* Commences in *Rajasthan*.

### About the Exercise

- *Exercise Cyclone-I* is a Joint military between the special forces of the **Indian Army and the Egyptian Army**.
- It is the **first joint exercise** between the special forces of the Indian Army and the Egyptian Army.
- It takes place at **Jaisalmer in Rajasthan**. It is a 14 days long exercise.

### Exercise Cyclone - I








**Why in news?**

- Inaugural Edition of Indo-Egypt Joint Training Exercise Cyclone - I Commences.

**Exercise Cyclone - I**

- Joint military between the special forces of the Indian Army and the Egyptian Army.
- It is the first joint exercise between the special forces of the Indian Army and the Egyptian Army.
- Place - Rajasthan
- Aim of the Exercise
  - To bolster defence co-operation between the two nations.
  - To focus on sharing professional skills and interoperability of Special Forces in desert terrain.
- Features
  - It will undertake counter terrorism, reconnaissance, raids and other special operations.
  - Both will carry out advance special forces skills such as Sniping, Combat Free Fall, Reconnaissance, Surveillance & Target Designation etc.
  - It will also undertake joint planning and drills for Special Forces operations in a mechanised warfare setting as well as surgical strikes.



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## 3. Ops Alert Exercise In News

**BSF starts 'Ops Alert'** exercise ahead of Republic Day.

### About the Exercise

- It is week-long exercise carried out along the borders.



## Objective of the Exercise

- It is to enhance *security along the India-Pakistan border* in *Kutch district of Gujarat and Barmer in Rajasthan*.
- It is being carried out to thwart any ill designs of anti-national elements during the Republic Day celebrations.
- The BSF will carry out special operations in forward and depth areas as well as creeks and *'Harami Nalla'* as part of the exercise.
- There will be a public outreach programmes as part of the exercise.

## 4. TROPEX

### In News

Indian Navy undertaking a mega exercise in Indian Ocean Region.

### About TROPEX

- The *biennial Theatre Level Operational Readiness Exercise (TROPEX)* is an *inter-service military exercise*.
- Aim of Exercise: Validating and refining the *Navy's* concept of operations as well as to test overall combat capabilities.
- It involves the operational level *interaction of the Indian Army, Air Force, Navy and the Coast Guard*.
- The 2023 edition of Indian Navy's major maritime exercise TROPEX, is currently underway in India Ocean Region.

## Exercise TROPEX



### Why in news?

- Indian Navy undertaking a mega exercise in Indian Ocean Region.

### Theatre Level Operational Readiness Exercise (TROPEX)

- It is a biennial inter-service military exercise.
- Aim of Exercise: Validating and refining the Navy's concept of operations as well as to test overall combat capabilities.
- It involves the operational level interaction of the Indian Army, Air Force, Navy and the Coast Guard.
- The 2023 edition of Indian Navy's major maritime exercise
- TROPEX 2023 is being conducted over a duration of three months from January - March 2023.
- The exercise is being conducted in different phases, both in harbour and at sea.
- It provides an opportunity to test the combat readiness of the combined fleets of the Indian Navy to operate in a multi-threat environment.



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## 5. AMPHEX 2023


### In News

*Tri-services Amphibious Exercise, AMPHEX 2023 Concludes.*

### About AMPHEX

- **AMPHEX 2023** is the *biennial tri-services* amphibious exercise took place at **Kakinada in Andhra Pradesh**.
- The exercise was focussed on various facets of amphibious operations to enhance interoperability and synergy.

## AMPHEX 2023




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**Why in news?**

- AMPHEX 2023 Concludes.

**AMPHEX 2023**

- AMPHEX 2023 is the biennial tri-services amphibious exercise,
- Place - Kakinada in Andhra Pradesh
- The exercise was focussed on various facets of amphibious operations to enhance interoperability and synergy.
- It had participation of a number of amphibious ships consisting of Large Platform Dock (LPD), Landing Ships and Landing Crafts, Marine Commandos (MARCOS), helicopters and aircraft from the Indian Navy.
- Indian Army participated in the exercise with over 900 troops.
- IAF Jaguar fighters and C 130 aircraft participated in the exercise.
- It successfully demonstrated the amphibious capabilities and validated the excellent coordination that exists between the three Services.



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## 6. Leopard-2 tanks

### In News

*Leopard tanks to arrive in Ukraine* around late March.

### About Leopard-2 tanks

- It was developed in the 1970s by the West German army.


### Major Features

- It runs on Diesel
- Leopard 2s can accurately fire at a moving target.



- It is equipped with night-vision equipment and a laser range finder that can calculate the distance to a target.
- It has a range of over 500 km (how far they can roll before refuelling) and a top speed of about 70 kmph.

## Leopard 2 Tank

  
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### Leopard 2 Tank


- It is a German made main battle tank.
- Developed by - German weapons manufacturer Krauss-Maffei Wegmann (KMW).
- Historical Link - Leopard was first produced in the late 1990s for the West German army in response to Soviet threats during the Cold War.

### Leopard 2 tanks

Germany is under pressure to give Ukraine Leopard 2 tanks to help it fight Russia. The main battle tank is considered one of the best-performing worldwide.

Max speed 72km/h	Max Range 500km	Weight 62t	Crew 2
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**Armament**  
Rheinmetall 120mm L55 smoothbore gun  
Coaxial 7.62mm machine gun  
7.62mm Anti-aircraft machine gun



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## **INDEX/REPORTS**

### **1. Caste Census**

#### **In News**

SC declines to entertain petitions on caste census

#### **About Caste Census**

- Caste Census is the inclusion of the caste-wise tabulation of India's population.
- **Caste**, a powerful cultural underpinning of Indian culture, was **last included** in the **Indian Census in 1931**.
- **Every census in independent India provided only** data on **Scheduled Castes and Scheduled Tribes** but not on other castes.
- The **Socio-Economic and Caste Census (SECC)** was conducted **in 2011 for the first time since 1931**.
- SECC has the potential to allow for a mapping of inequalities at a broader level.

#### **Why Bihar is doing caste census?**

- It is difficult to estimate the population of Other Backward Classes (OBCs) correctly.
- It will use the data to formulate welfare policies.

### **2. All India Survey on Higher Education (AISHE) 2020-2021**

#### **In News**

Ministry of Education releases All India Survey on Higher Education (AISHE) 2020-2021.

**Ministry: Ministry of Education**

#### **About AISHE**

- All India Survey on Higher Education (AISHE) 2020-2021 was released by Ministry.
- This survey has been **conducted since 2011**.
- It **covers all higher educational institutions** located in Indian Territory.
- It collects detailed information on different parameters such as student enrollment, teacher's data, infrastructural information, financial information etc.
- AISHE 2020-21 have filled data using entirely online data collection platform.
- It used the Web Data Capture Format (DCF) developed by Department of Higher Education through the National Informatics Centre (NIC).

#### **Key Highlights of survey**

- **Enrollment in higher education increased** by 7.5% from 2019-20.
- **Female enrollment reaches 2 crore mark**, increase of 13 Lakh from 2019-20

- **Increase** of 28% in **enrolment of SC** students and 38% in **enrolment of Female SC Students** in 2020-21.
- **Increase** of 47% in **enrolment of ST students** and 63.4% increase in the **enrolment of Female ST Students** in 2020-21.
- **Increase** of 29% in **Student** Enrolment and 34% in Female Student Enrolment in the **North Eastern Region** in 2020-21 since 2014-15.
- **Gross Enrolment Ratio (GER) has improved.**
- **Enrollment in Distance Education has increased** by 7% in 2020-21 from 2019-20
- **Number of Universities has increased** by 70, number of Colleges has increased by 1,453.
- **Gender Parity Index (GPI) has increased** from 1 in 2017-18 to 1.05 in 2020-21.
- Total number of faculty/teachers increases by 47,914 from 2019-20.

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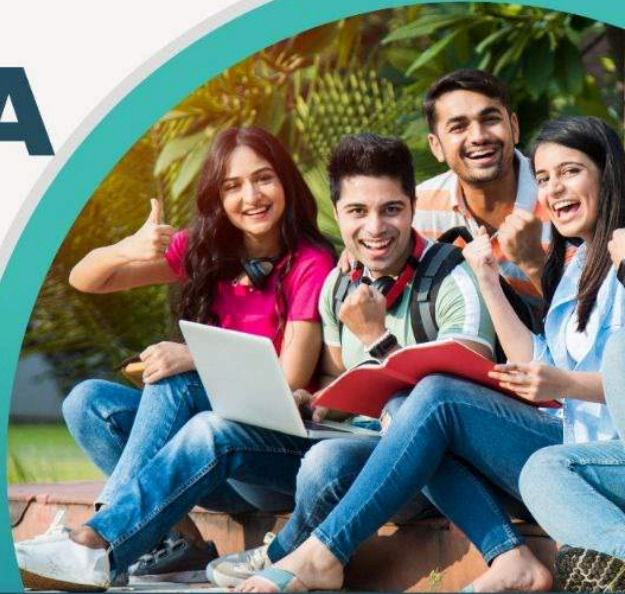
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