

# FORTUNE Prelims Precise

MAY 2024



FORTUNE IAS

# 27 Toppers in Top 100



**P K Sidharth Ramkumar**  
2024



**Meera K**  
2021



**Sidharth B**  
2017



**Ayan Jain**  
2024



**Dilip K Kainikkara**  
2022



**Hamna Mariyam**  
2017



**Sreelakshmi Ram**  
2019



**Vishnu Sasikumar**  
2024



**Anand**  
2016



**Arya V M**  
2023



**Archana P P**  
2024



**Safna Nazarudeen**  
2020



**Renjina Mary V**  
2019



**Dr. Arun S Nair**  
2020



**Alfred O V**  
2022



**Hari Kallikkat**  
2018



**Benjo P Jose**  
2024



**Aparna M B**  
2021



**Dheenah Dastageer**  
2021



**Akhil V Menon**  
2022



**Arjun Mohan**  
2019



**Kasturi Sha**  
2024



**Fabi Rasheed**  
2024



**Malini S**  
2023



**Devi Nandana**  
2020



**Annie George**  
2024



**Kiran P B**  
2022



# Preface

Fortune IAS Academy presents '**Prelims Precise**', a monthly current affairs magazine through which we make prelims current affairs revision precise and effective.

This magazine is a comprehensive resource that condenses the significant news of each month into distinct sections such as polity and governance, economic development, science & technology, among others.

Fortune Prelims Precise is available to all Prelims cum Mains batch students (2024) as part of the course study material. **It can be purchased from Fortune IAS Academy for Rs. 50 per issue.**

Soft copies of Prelims Precise, FWD (Fortune Weekly Digest for mains) and FINDER (Fortune IAS News Daily Explainer) is available on our telegram channel for free. Please scan QR code below to join our telegram channel.



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## History & Culture

### Raja Ravi Varma (1848 - 1906)



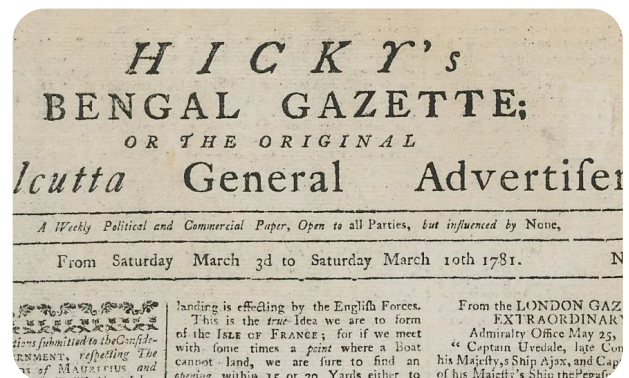
- The 176th birth anniversary of Raja Ravi Varma, an aristocratic-born artist from Kerala, was recently celebrated.
- Known as the **father of modern Indian art**, Varma **merged Indian iconography with Western realism** and was among the first Indian artists to use **oil paints**.
- **Notable works** include “Damayanti Talking to a Swan,” “Shakuntala Looking for Dushyanta,” “Nair Lady Adorning Her Hair,” and “Shantanu and Matsyagandha.”
- In 1904, he was awarded the **Kaiser-i-Hind Gold Medal** by the British colonial government in recognition of his contributions.

### Sri Madhava Perumal Temple



- Inscriptions found at the **Sri Madhava Perumal Temple in Erode, Tamil Nadu**, which is often submerged by the **Bhavanisagar dam constructed in 1948-55**, revealed a 1,000-year-old trade route.
- This route connected the **Kongu region in western Tamil Nadu** with southern Karnataka and Kerala, crossing the **Bhavani and Moyar rivers** that feed into Cauvery.
- During summers, when the dam water recedes, submerged temples reappear.
- In 1338, **Hoysala** general Madhava Perumal Dhandanayaka's son, **Veera Siddha Keththaya Dhandanayaka**, constructed the Sri Madhava Perumal Temple inside the fort.
- The idols in the temple were shifted to new temples in 1953.
- Inscriptions also mention a village and a **Shiva temple, Thondreeshwaramudiayar**, that existed there.

### Bengal Gazette



- On **World Press Freedom Day (May 3)**, India's first printed newspaper, **Bengal Gazette** was remembered.
- On **January 29, 1780**, **Hicky's newspaper** i.e. **Bengal Gazette** or **Calcutta General Advertiser**, was founded by Irishman **James Augustus Hicky**.
- It was a **weekly English-language newspaper** published in Kolkata (formerly Calcutta), the capital of British India.
- It was **closed down in 1782** after many libel cases were filed against Hicky for his relentless reporting.
- It even **criticised the then Governor General Warren Hastings** as “a miserable successor” of Robert Clive for his expansionary policies.

## Hindu Marriage Act (HMA) of 1955

- The Supreme court in **Dolly Rani v. Manish Kumar Chanchal 2024** opined that without the customary ceremony like **saptapadi** (seven steps around the sacred fire) a marriage **cannot be recognised under Hindu Marriage Act, 1950**.
- This judgement reaffirmed the institution of **Hindu marriage as a sacrament ('samskara')** in Indian society.
- HMA governs the solemnization and various punishments related to Hindu marriages.
- The **act applies to Hindus, Buddhists, Jains, and Sikhs**, in addition to any person who isn't a Muslim, Christian, Parsi, or Jew.
- The act codifies the law relating to **marriage, the rights and obligations of spouses, and grounds for divorce among Hindus**.
- The bridegroom must be at least 21 years old, and the bride must be at least 18 years old when they get married.
- The Saptapadi ceremony is traced to **Rig Vedic times and is mentioned in Section 7 of HMA**.
- HMA **prohibits** polygamy and polyandry.

## Competition Commission of India (CCI)

- Anti-trust regulator CCI said that '**opacity of algorithms**', potential '**data dominance**' by **giant digital firms** can potentially gain significant advantages in digital markets.
- It becomes a **tough monitoring challenge** for competition authorities worldwide as well as **becomes barriers to entry** of new players in the digital world.
- The Competition Commission of India (CCI) is a **statutory body** established under the **Competition Act, 2002**.
- It comes under the aegis **Ministry of Corporate Affairs**.

- **Composition:** A chairperson and not more than 6 members appointed by the central government.

### Key functions of the CCI include

- ♦ Investigate and takes action against anti-competitive practices
- ♦ Reviews and approves mergers & acquisitions
- ♦ Promotes competition through advocacy and awareness.
- ♦ Secure the interest of consumers

## Repolling

- Election Commission of India conducted re-polling for the ongoing Lok Sabha General Elections in various polling stations of **Manipur and Arunachal Pradesh**.
- **Provisions related to Re-polling under Representation of the People Act (RPA), 1951**
- Circumstances under which re-polling is needed :
  - ★ Section 57: On account of natural calamity, violence, etc.
  - ★ Section 58(2): Due to damage or destruction of voting machines.
  - ★ Section 58A: Countermanding of election on account of Booth capturing.
  - ★ Section 52: On account of death of a candidate of a recognised political party (National party/State party).

## Street Vendors (Protection of Livelihood and Regulation of Street vending) Act, 2014



- A decade of Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014.
- The act aims to **safeguard the rights** of Street Vendors and **regulate their activities** in urban areas.

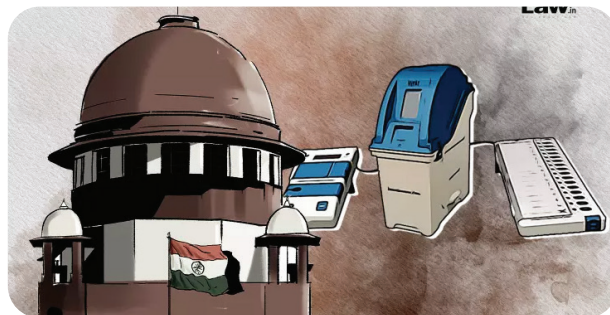
### Key Provisions

- ◆ **Town Vending Committees (TVC)** are to be established in each Local Authority to **survey the Street Vendors**, at least once in every five years.
- ◆ **Certificate of Vending** for the identified vendors, who shall be above 14 years of age.
- ◆ **Vending zones** will be established by the Local Authorities on the recommendations of TVC.
- ◆ A Ceiling limit of 2.5% of the population in a respective area is set for accommodating the vendors.

### Right to Contest Election & Right to Vote of Prisoners

- Recently, the Supreme Court has decided to examine a petition challenging a provision in the **Representation of People Act or RPA, 1951** that imposes a blanket **ban on under trials, persons confined in civil prisons and convicts** serving their sentence in jails from **casting their votes**.
- A **convicted person**, sentenced to imprisonment for **atleast 2 years, cannot contest election** (Section 8 (3) of RPA, 1951).
  - » However, if such a convicted person is on **bail**, they **cannot contest elections but can vote**.
- A person **confined to a prison cannot vote** (Section 62(5) of the RPA, 1951).
  - » It is applicable to persons under a **sentence of imprisonment or transportation or is in the lawful custody** of the police.
  - » However, a person undergoing a **criminal trial can contest elections**.
- A person under **preventive detention** is **entitled to vote** in an election (Section 62(5) of the RPA, 1951 and Rule 18 of Conduct of Elections Rules 1961) through **postal ballot**.

### Supreme Court verdict on EVMs



- Recently, the Supreme Court in the **Association of Democratic Reforms v. Election Commission of India Case, 2024**, upheld the electronic voting machine (EVM) system, rejecting a return to paper ballots.
- Also, the Court **rejected the request for 100% cross-verification of EVM votes with Voter verifiable paper audit trail (VVPAT) slips**, maintaining the current random 5% verification in Assembly constituencies.
- **How EVMs and VVPAT were Introduced in India?**
  - The idea of EVM was conceived in 1977 and a prototype was developed by **Electronics Corporation of India Ltd (ECIL), Hyderabad**, in 1979.
  - 1982: EVMs were used in 50 polling stations during elections in the **North Parur seat of Kerala**.
  - 1988: A section of the **Representation of the People Act, 1951** was amended empowering the EC to use EVMs.
  - 2004: EVMs were used in **all 543 constituencies of Lok Sabha elections**.
  - 2013: Amendment to the **Conduct of Election Rules, 1961** introduced the use of **Voter Verifiable Paper Audit Trail (VVPAT) machines**. Used in the by-election for the **Noksen assembly seat in Nagaland**.
  - 2019: First Lok Sabha election in which **EVM was fully backed by a VVPAT EVM**.



## De-recognition & De-registration of Political Parties

- Recently, a state party asked the Election Commission of India (ECI) not to derecognise the party in Andhra Pradesh.
- Derecognition refers to the **withdrawal of recognition of a political party** by the ECI.
- Such parties are simply declared as **registered-unrecognised parties**.
- Grounds for State Party Derecognition**
  - » Failure to secure **6% of the valid votes** polled in the state at a general election to the respective state legislative assembly (state LA) and also, failure to **win 2 seats in the same state LA**.
  - » Failure to secure **6% of the total valid votes** in the state at a general election to the LS; and also, failure to **win 1 seat in the LS** from the same state.
  - » Failure to **win 3% of seats in the LA** at a general election to the legislative assembly of the state concerned or **3 seats in the assembly (whichever is more)**.
  - » Failure to **win 1 seat in the LS for every 25 seats** or any fraction thereof allotted to the state at a general election to the LS from the state concerned.
  - » Failure to **secure 8% of the total valid votes** polled in the state at a General Election to the LS from the state or to the State LA.
- Deregistration refers to the **cancellation of the registration** of a political party
- The Supreme Court in “**Indian National Congress vs Institute of Social Welfare & Ors (2002)**” affirmed that the **ECI lacks the authority to de-register** political parties under the **Representation of People Act, 1951** except under extraordinary circumstances such as
  - » Registration was obtained by fraud.
  - » Declaration of illegality by the Central Government.
  - » Amendment of internal constitution conflicting with the Indian Constitution.
- Once a political party is deregistered, it **cannot contest elections**.

## Article 31 C – Article 39 B of the Constitution – SC order on Right to Property



- Recently, a nine-judge Bench of the Supreme Court has chosen to address the question of existence of Article 31C, while hearing a case to decide whether the government can acquire and redistribute private property.
- Article 31C** was added to the Constitution by **25th Constitutional Amendment, 1971** in response to the Supreme Court’s decision in the **R.C. Cooper v. Union of India (Bank Nationalisation Case, 1969)**.
  - » In this case, the court **invalidated the Banking Companies (Acquisition and Transfer of Undertakings) Act, 1969** due to issues with the compensation offered.
- Article 31C **protects directive principles** (Articles 39B and 39C) from being challenged by the **right to equality** (Article 14) or **rights under Article 19** (freedom of speech, right to assemble peacefully, etc).
  - ▶ Article 39B - The “material resources of the community” are distributed to serve the common good.
  - ▶ Article 39C - The wealth and the means of production are not “concentrated” to the “common detriment”.

## National Commission for Backward Classes



**National Commission  
For Backward Classes**

**राष्ट्रीय पिछड़ा वर्ग आयोग**

Constitutional Body Article 338B

- Recently, the National Commission for Backward Classes (NCBC) recommended an increase in reservation quota for OBCs in West Bengal, Punjab.
- The NCBC was set up under the **National Commission for Backward Classes Act, 1993**, and later given **Constitutional status via the 102nd Constitution Amendment Act, 2018 (Article 338B)**.
- The Commission comprises a **Chairperson, Vice-Chairperson, and three other Members**, with their conditions of service and tenure decided by the **President**.
- It investigates and monitors safeguards for **socially and educationally backward classes** and advises the Central Government on OBC inclusion/exclusion requests from state or central governments.
- **The NCBC presents reports to the President annually and as needed.**

### GANHRI Defers Accreditation of NHRC



- Recently, Global Alliance of National Human Rights Institutions (GANHRI) deferred NHRC-India accreditation for the **second year in a row**.
- The deferment will **affect India's ability to vote at the Human Rights Council** and some United Nation General Assembly bodies.
- About Global Alliance of National Human Rights Institutions (GANHRI)
  - GANHRI was established as the **International Coordinating Committee of institutions** for the **promotion and protection of human rights** in 1993.
  - It has 120 members & **India is a member**.

- It **accredits a National Human Rights Institution (NHRI)** with a 'A status' (full compliance) or 'B status; (partial compliance) based on their adherence in meeting the requirements of the **Paris Principles**.

👉 **Paris Principles** set out **internationally agreed minimum standards** that NHRIs must meet to be considered credible and independent.

👉 The key pillars of the Paris Principles are **pluralism, independence and effectiveness** endorsed by the United Nations in 1993.

### Supreme Court Bar Association (SCBA)

- The Supreme Court has **reserved** one-third of the Supreme Court Bar Association's (SCBA) executive committee **seats for women**.
- A bar **association is a professional lawyers' association** in a jurisdiction.
- Membership in bar associations is **non-mandatory and primarily for recognition**.
- The SCBA, registered under the **Societies Registration Act of 1860**, allows any advocate entitled to practise law to become a member.
- Law graduates must enrol in a **state Bar council under the Bar Council of India** and pass the **All India Bar Examination (AIBE)** to practise in any Indian court as advocate.
- **SCBA Executive Committee:**
  - » It is responsible for managing the association's affairs.
  - » **Composition** - President, Vice-President, Secretary and 15 Members, of whom at least 6 must hold the designation of Senior Advocates.

## GST Appellate Tribunal

- Union **Minister for Finance and Corporate Affairs** Smt. Nirmala Sitharaman administered the **oath to Justice (Retd.) Sanjaya Kumar Mishra** as the first President of the GST Appellate Tribunal (GSTAT).
- The **Central Goods and Service Tax Act, 2017 (CGST Act)** in Section 109 mandates for the constitution of a **GSTAT and its Benches**.
- The GSTAT will be the specialised appellate authority for **resolving disputes** under the **GST laws**.
- **Composition:**
  - ☞ It will have one **principal bench in New Delhi** and 31 state benches.
  - ☞ Each will have **two technical and two judicial members each**, with equal representation from the Centre and states.

## Artificial Intelligence (AI) Act

- The **Council of the European Union** has approved the **EU Artificial Intelligence Act**, the world's first standalone AI law.
- This legislation adopts a **risk-based approach**, imposing stricter rules on higher-risk AI systems to protect safety, health, fundamental rights, and democratic values in the EU.
- The Act **applies to all sectors and industries**, including providers outside the EU that market AI systems within the EU.
- The Council, consisting of **ministers from 27 EU countries**, shares decision-making responsibilities with the European Parliament, with each country holding the presidency for six months.

## Economy

### Spices Board of India



- The Spices Board of India has taken up with CODEX, the international food standards body, to set up **standardised residue limits for ethylene oxide (EtO)** usage in spices, because different countries have different limits.
- Spices board is an autonomous body, **headquartered in Kochi**, constituted in 1987 under the **Spices Board Act 1986**.
- It is **one of five statutory Commodity Boards** under the Department of Commerce, **Ministry of Commerce and Industry**.
- The others are **Coffee Board, Rubber Board, Tea Board and Tobacco Board**.
- It is **responsible for the export promotion** of the 52 scheduled spices and development of Cardamom.

**The Codex Alimentarius Commission**, often referred to as **Codex**, is an international body established in 1961 by the **Food and Agriculture Organization (FAO) of the United Nations (UN)** and the **World Health Organization (WHO)** to address concerns about the international food trade and the need for **harmonised food standards**.

### Retail Direct Mobile App for G-Sec

- RBI launched **Retail Direct mobile app** for G-Sec (Government securities) transactions for retail or individual investors.
- App was launched as part of the Retail Direct Scheme of RBI started in **2021** as a one-stop solution to **facilitate investment in G-Sec by individual investors**.



- Retail investors, both resident and non-resident (fulfilling Foreign Exchange Management Act provisions), have the facility to open and maintain 'Retail Direct Gilt Account' with RBI to **access primary issuance of G-Secs**.

### G - Sec

- ➔ G-Secs are **financial instruments used by the government to borrow money**, including **short-term treasury bills (T-bills)** and **long-term government bonds or dated securities**.
- ➔ In India, the **Central Government issues both T-bills and bonds**, while State Governments issue only bonds, known as **State Development Loans (SDLs)**.
- ➔ G-secs also include **Sovereign Gold Bonds (SGBs)** issued by the RBI on behalf of the Central Government.
- ➔ T-bills are **zero-coupon securities** issued at a discount and redeemed at face value at maturity.
- ➔ **Dated G-secs are long-term (5-40 years)** securities with a fixed or floating interest rate paid semi-annually on the face value.

### PRAVAAH Portal

- **RBI launched the PRAVAAH** (Platform for Regulatory Application, Validation, and Authorisation) portal for easier regulatory applications.
- This secure, centralised **web-based portal** allows individuals and entities to seek authorizations, licences, or regulatory approvals from the Reserve Bank.
- PRAVAAH aims to **enhance process efficiency for regulatory approvals and clearances**, improving Ease of Doing Business (EoDB) in India.

### The FinTech Repository

- **RBI launched the FinTech Repository** to enhance transparency in the Indian fintech sector.
- Fintech companies use **technology to**

**improve or automate financial services** (e.g., Paytm, PhonePe).

- Managed by the **Reserve Bank Innovation Hub (RBIH)**, this secure web-based application will house detailed data on Indian fintech firms.
- It aims to **capture essential information on fintech entities**, their activities, and technology uses, benefiting policymakers and industry members.

### P - notes

- Recently, registered **Foreign portfolio investors (FPIs) domiciled at the GIFT International Financial Services Centre (IFSC)** have been allowed to issue participatory notes (p-notes).
- P-notes are **issued by registered foreign FPIs to overseas investors** to invest in the Indian stock market without registering themselves directly.
- P-Notes act like a **substitute** for underlying **Indian company shares**.
- **Benefits:**
  - ✓ Avoids the hassle of registering with SEBI and offers anonymity.
  - ✓ More choices for investors for investing in Indian stocks.
- **Challenge:**
  - Lack of transparency,
  - Uncontrolled money in Indian stock, etc.

### TRIPS



- The **World Trade Organisation (WTO)** commemorated the 30th anniversary of the Agreement on Trade-Related Aspects of Intellectual Property Rights (**TRIPS**).
- Developed during the **Uruguay Round of the General Agreement on Tariffs and Trade (GATT)**, TRIPS came into force on **January 1, 1995** at the conclusion of the Uruguay Round of **General Agreement on Tariffs and Trade (GATT)** at Marrakesh, Morocco (1994).
- It **sets minimum protection standards for Intellectual Property (IP)**, incorporating provisions from the World Intellectual Property Organization's (WIPO) Paris and Berne Conventions.
- **Intellectual property (IP)** is a category of property that includes intangible creations of the human intellect like inventions, artistic works, names and symbols etc.
- TRIPS covers **copyright, trademarks, geographical indications, industrial designs, patents, and integrated circuit layout-designs**.
- Disputes are resolved through **WTO procedures**, and compulsory licensing is allowed.
- TRIPS provides for National Treatment, Most Favoured Nation status and Compulsory licensing.
- In compliance with the TRIPS Agreement, India brought in **amendments** to the **Patents Act, 1970** in 2005.

## Capital Gains Tax

- The Finance Minister has denied plans to change the capital gains tax structure.
- In India, **capital gains tax is imposed on profits from selling capital assets like stocks, bonds, and real estate**.
- This tax applies to both **individuals and businesses**.
- Under the **Income Tax law**, gains from transferring a capital asset are taxed as 'Capital Gains'.
- The tax is based on the difference between the **asset's purchase price and its selling price**.
- There are two types:

1. **Short-Term Capital Gains (STCG) Tax**, for assets sold generally within 36 months of having possession.
2. **Long-Term Capital Gains (LTCG) Tax**, which is lower than STCG tax.

## Front Running

- **Securities Exchange Board of India (SEBI)** has come down heavily on individuals and entities engaging in Front Running especially in mutual funds.
- **Mutual funds** execute large stock market orders through **intermediaries like dealers**.
- Front-running, an illegal practice, occurs when these **intermediaries exploit their position for profit**.
- **Anticipating a mutual fund's buy order**, an intermediary buys the stock beforehand.
- When the mutual fund's large order raises the stock price, the intermediary sells for a profit.
- This practice **exploits insider information** and undermines market fairness, harming the interests of the mutual fund and its investors
- It **undermines confidence** in the financial markets and creates an **uneven playing field** for other investors.

## Inheritance tax



- During the election campaign in India, there was a heated debate about imposing inheritance tax.
- Inheritance tax is paid by **beneficiaries on the value of the property or assets they inherit from a deceased person**.
- Many European, American, and African nations levy this tax.

- India had an **inheritance tax**, known as **estate duty**, introduced in 1953 and abolished in 1985.
- India also had a **wealth tax** and a **gift tax**, abolished in 2015 and 1998, respectively.

### IREDA gets NAVRATNA Status

- Indian Renewable Energy Development Agency (IREDA) attains '**Navratna**' status from the **Department of Public Enterprises**.
- IREDA was set up in 1987 as a **non-banking financial institution**.
- It operates under the **Ministry of New and Renewable Energy** and promotes and develops **projects related to renewable energy sources**.
- **About Navratna Status**
  - ▶ The government categorises all Public Sector Undertakings (PSUs) into three categories, namely **Maharatna**, **Navratna**, and **Miniratna**.
  - ▶ Criteria for Navratna status
    - ♦ APSU should be a **Miniratna-I**, Schedule 'A' company, should have obtained an 'excellent' or 'very good' MoU rating in three of the last five years, and must have a composite score of 60 in six performance indicators.
    - ♦ It must report a **net profit** of more than Rs 5,000 crore for three consecutive years, and maintain an **average annual turnover** of Rs 25,000 crore for three years, or have an annual average net worth of over Rs 15,000 crore for three years.
  - ▶ Benefits
    - ✓ **Financial Independence**: They invest up to ₹1,000 crore without seeking approval from the central government.
    - ✓ **incur capital expenditure** on purchase of new items or for replacement, **without any monetary ceiling**.
    - ✓ To enter into **technology joint ventures** or strategic alliances

### India International Bullion Exchange (IIBX)



- Recently, the **State Bank of India (SBI)** announced it has become the first **trading-cum-clearing member** at the **India International Bullion Exchange (IIBX)**.
- IIBX is India's **first International Bullion Exchange**, and 3rd of its kind in the world..
- Bullion refers to **highly refined non-ferrous metals**, often precious metals like **gold, silver, and platinum**, typically in bulk form and used for making coins.
- It is based at **GIFT City** (Gujarat International Finance Tech City) IFSC (International Finance Services Center), Gandhinagar, Gujarat.
- IIBX has been conceptualised to provide a **gateway to import bullion into India and provide a world class bullion exchange ecosystem**.
- The **IIBX is regulated by the International Financial Services Centers Authority (IFSCA)**, a statutory body under **International Financial Services Centres Authority Act, 2019**.
- IFSCA regulates the **Special Economic Zones in India**.
- Its chairperson and members are **appointed by the Central Government**.

### Asset Reconstruction Companies (ARCs)

- Recently, the Reserve Bank of India (RBI) has **raised supervisory concerns** regarding the functioning of asset reconstruction companies (ARCs).



- They are financial institutions that **buy non-performing assets (NPAs) or bad assets from banks and financial institutions** to help them clean up their balance sheets.
- ARCs register under the Companies Act, 2013 as well as under the Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002 (**SARFAESI Act, 2002**).
- They are **regulated by the RBI**.
- After buying the bad loans from financial institutions or banks at a **'fair price'** by an agreement, ARC becomes the owner of such assets.
- They can move with the **recovery process of bad loans** in place of the original lender.

## Project ISHAN



- India has kickstarted its 'one nation, one airspace' initiative called Project ISHAN.
- The Airports Authority of India (AAI) invited **Expressions of Interest (EoI)** from interested parties for the preparation of a detailed project report.
- The **Indian Single Sky Harmonized Air Traffic Management (ISHAN)** initiative aims to streamline and enhance air traffic management.
- Currently, Indian airspace is divided into **Four Flight Information Regions (FIRs)** in Mumbai, Kolkata, Delhi, Chennai, and a sub-FIR in Guwahati each managed separately.
- The plan is to unify the four FIRs into **one continuous airspace in Nagpur** and have harmonised Air Traffic Management from Nagpur.
- FIR is a **specified region of airspace** in which a dedicated flight information service and alerting service (ALRS) are provided.

## International Relations

### Antarctic Treaty

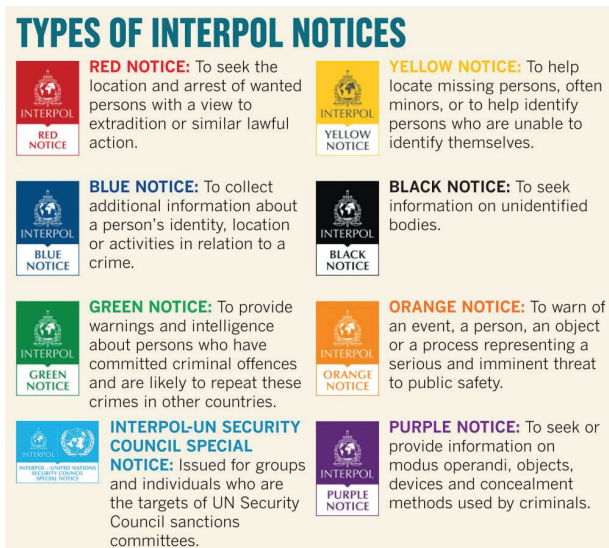


- India hosted the 46th session of the Antarctic Treaty Consultative Meeting (ATCM 46), also referred to as the Antarctic Parliament, in Kochi.
- The Antarctic Treaty 1959 was **signed** in Washington **initially by 12 countries** (**Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, United Kingdom, United States and USSR**).
- It **entered into force in 1961** and presently there are **56 Parties to the Treaty including India**.
- As per the treaty **"Antarctica shall be used for peaceful purposes only"**.
- The **Secretariat** of the Antarctic Treaty is located in **Buenos Aires, Argentina**.
- To give effect to the treaty, India passed the **Indian Antarctic Act, 2022**.

### International Police Organisation (INTERPOL)

- A Blue Corner Notice has been issued by Interpol against a Keralite man who fled to Germany, accused of brutally assaulting and attempting to kill his newly-wed wife.
- The INTERPOL is an international organisation facilitating **international police cooperation against cross-border terrorism, trafficking, and other crime** founded in 1923.
- It is **headquartered in Lyon, France** with **196 member countries including India**.

- It is **'not'** a unit or part of the UN system. It is an **independent international organisation**.
- All decisions regarding the activities of INTERPOL are made by the General Assembly which meets annually.
- It has a National Central Bureau (NCB) in each member country and **Central Bureau of Investigation (CBI) acts as the National Central Bureau of Interpol in India**



## International Criminal Court (ICC)

- ICC sought arrest warrants against Hamas leaders and Israel's PM for alleged war crimes and crimes against humanity.
- ICC is the **world's first independent permanent international court** established through the **Rome statute** adopted in 2002, headquartered in **Hague, Netherlands**
- Unlike the International Court of Justice, which only hears disputes between states, the ICC **tries and prosecutes serious international crimes committed by individuals**.
- **124 countries** are States Parties to the Rome Statute of the ICC.
- **India, China, Iraq, North Korea, and Turkey never signed** the Rome Statute, while others including the US, Russia, Israel and Syria signed, but never ratified it.

- It can exercise jurisdiction only when offences are committed by individuals of member countries or in the territory of member countries from 1st July 2002 and also cases referred by UNSC.

## International Regulation on use of Chemical Weapon

- The U.S. State Department in its factsheet accused **Russia of having used chemical weapons against Ukrainian forces** which is a gross violation of the Chemical Weapons Convention.
- **Chemical Weapons Convention (CWC)**, of the **Organization for the Prohibition of Chemical Weapons (OPCW)** entered into force in 1997.
  - » Prohibits the development, production, stock-piling and use of chemical weapons and monitors its elimination in order to secure a chemical weapons free world.
  - » **India is a signatory** and party of CWC and enacted **Chemical Weapons Convention Act, 2000**.
- **Geneva Protocol 1925:** Prohibits the use of chemical and biological weapons in the field of conflict.

### OPCW

- **Function:** Implementing body for the Chemical Weapons Convention.
- **Mission:** To implement the provisions of the Chemical Weapons Convention to achieve a vision of a world free of chemical weapons.
- **Members:** 193 ( **India is also its member**).
- **Nobel Prize for peace:** Awarded in 2013 for 'its extensive efforts to eliminate chemical weapons'

## UN Counter-Terrorism Trust Fund

- Recently, India contributed \$5,00,000 to UN Counter-Terrorism Trust Fund,
- The U.N. Counter-Terrorism Trust Fund was **established in 2009** and transferred to the UN Office of Counter- Terrorism (UNOCT) in 2017.

- **Who can contribute?**
  - The Fund accepts contributions from Governments, inter-governmental and non-governmental organisations, private institutions and individuals.
- **UN Office of Counter Terrorism (UNOCT)**
  - It was established in 2017 by the UN General Assembly.
  - It will provide **leadership, capacity building, coordination, resource mobilisation for UN counter-terrorism efforts.**

### Countering America's Adversaries Through Sanctions Act (CAATSA)



- India and Iran signed a 10-year contract on Chabahar Port, but the US State Department warned against business deals with Iran due to potential sanctions under CAATSA.
- CAATSA, 2017 is an American law meant to **punish countries** having deep engagements with **Russia, North Korea, and Iran** using **economic sanctions**.
- The Act empowers the **US President to impose sanctions** on persons engaged in a "significant transaction" with Russian defence and intelligence sectors.
- The **US President can waive CAATSA sanctions** on a case-by-case basis.

### Colombo Process

- India has assumed the **chair of the Colombo Process** for 2024-26, the **first time** since the forum's inception in 2003.

- It provides an important platform for consultations on the management of **overseas employment and contractual labour** for countries of origin in **Asia**.

### Membership

- » It comprises **12 Member States of Asia** (countries of origin of migrant workers): Afghanistan, Bangladesh, China, Cambodia, India, Indonesia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam.
- » **India has been a member** of the Colombo Process since its inception in 2003.
- The **process is non-binding**, and decision-making is by **consensus**.
- The **International Organization for Migration (IOM)** provides technical and administrative support to the Colombo Process.
- The **Colombo Process Technical Support Unit (CPTSU)**, based in **IOM Sri Lanka**, provides technical support to the Colombo Process in its thematic areas of focus.
- **Five Thematic Priority Areas of Colombo Process:**
  - ✓ **Skills and Qualification Recognition Processes**
  - ✓ **Fostering Ethical Recruitment Practices**
  - ✓ **Pre-departure Orientation and Empowerment**
  - ✓ **Promote Cheaper, Faster and Safer Transfer of Remittances**
  - ✓ **Labor Market Analysis**

### International Solar Alliance (ISA)

- Spain has become the 99th member of the International Solar Alliance (ISA)
- ISA jointly launched by **India and France at COP 21 Paris (2015)** & is the first specialised **intergovernmental body** on solar energy.
- Headquartered at **Gurugram** (National Institute of Solar Energy) - First international organisation to be permanently headquartered in India.



- **Membership**

- » Earlier an **alliance of “sunshine countries”** lay completely or partially between the Tropics.
  - » Now open to all UN members.

- **Voting**

- » Countries that do **not fall within the Tropics** can join the alliance and enjoy all benefits as other members but has **no voting rights**.



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## Environment & Ecology

### Bhadra Wildlife Sanctuary



- Recently, the number of people visiting the Bhadra tiger reserve in Chikmagalur for safari has gone up.
- It is situated in the midst of the **Western Ghats region** of **Karnataka** and **surrounded by hill ranges of Mullaianagiri, Babaudangiri, etc.**
- The habitat has a good population of elephants & tigers and is also an **Elephant Reserve & Tiger reserve**.
- It is well drained by the river **Bhadra** and its **tributaries**.
- It has **dry-deciduous, moist-deciduous, shola, and semi-evergreen patches**.
- **Flora:** Teak, Rosewood, Mathi, Honne, Nandi and many medicinal plants etc.
- **Fauna:** Tiger, Leopard, Leopard cat, Dholes, Indian Civet, ungulates like Gaur, Sambar and Barking Deer are common.

### New Collective quantified goal on Climate Finance

- Parties to the UNFCCC have submitted proposals for the **New Collective Quantified Goal (NCQG)** under the **Paris Agreement**.
- Initially, at COP15 in Copenhagen (2009), developing countries pledged to jointly mobilise **\$100 billion annually by 2020** for climate action in developing nations.
- However, this target was not met, leading to an **extension until 2025 during COP21 in Paris**.

- A new climate finance goal, the NCQG, is now **under consideration to surpass the existing \$100 billion target** annually.

## Goldman Environmental Prize



- Alok Shukla, convenor of the Chhattisgarh Bachao Andolan and founding member of the **Hasdeo Aranya Bachao Sangharsh Samiti**, has been awarded the **2024 Goldman Environmental Prize** from Asia, also known as the Green Nobel.
- **Goldman Environmental Prize** recognises grassroots environmental leaders from **six regions** (Asia, Africa, Europe, North America, South and Central America) and lastly, islands and island nations.
- This prestigious award honours individuals who show remarkable **dedication to protecting the natural environment**, often facing personal risks.
- The **Hasdeo Aranya region** (“lungs of Chhattisgarh”) in northern Chhattisgarh, known for its biodiversity and coal deposits, features the **largest un-fragmented forest in Central India**, with pristine Sal and teak forests
- The **Hasdeo River**, a tributary of the **Mahanadi**, flows through it.

## World Wildlife Crime Report 2024

- The **United Nations Office on Drugs and Crime (UNODC)** released the World Wildlife Crime Report 2024.

## Key findings

- ✓ During 2015-2021, **rhinoceroses and cedars** were most impacted animal and plant species respectively.
- ✓ Largest numbers of seizures reported during 2015- 2021 involved **corals, followed by crocodiles and elephants**.

## Steps taken to combat Wildlife Crime

### Global

- UNODC’s **Global Programme for Combating Wildlife and Forest Crime, 2014**.
- UNODC was established in 1997 in Vienna (Austria), to fight against **illicit drugs and organised crime**.
- **Wildlife Crime Initiative** to respond to the global poaching crisis.
- It is a strategic partnership between **TRAFFIC, wildlife trade monitoring network and World Wildlife Fund**.

### India

- **Wildlife (Protection) Act, 1972** provides for forfeiture of any equipment, vehicle or weapon that is used for committing wildlife offence(s).
- The **Wildlife Crime Control Bureau** was established under the **Ministry of Environment and Forests** to combat organised wildlife crime. (Under Wildlife (Protection) Act, 1972)

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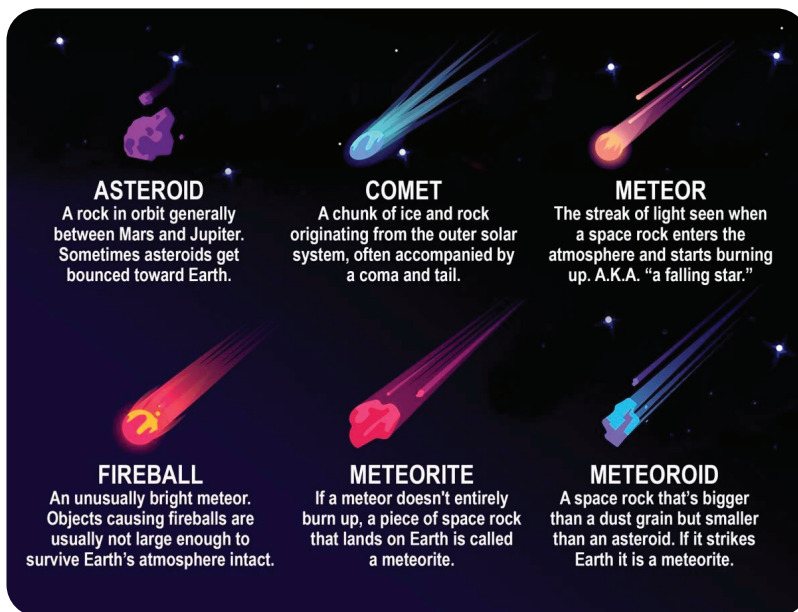
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 PARVATHY GOPAKUMAR AIR 282	 SWATHI S BABU AIR 522	 DEVIKRISHNA P AIR 559	 OORMILA J S AIR 561
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## Meteor Shower



- The recent **Eta Aquariid meteor shower**, linked to Halley's comet, provided a stunning celestial display for skywatchers globally.
- **Meteoroids**, which include dust grains and small asteroids, enter Earth's atmosphere at high speeds, burning up and creating fireballs or shooting stars known as meteors.
- These meteors **leave behind glowing streaks of gas** visible as meteor showers.
- Occasionally, some meteoroids survive atmospheric entry and hit Earth's surface; these surviving chunks are called **meteorites**.

## Ajrakh



- Ajrakh, a traditional textile craft originating from **Gujarat**, particularly in regions like **Sindh, Barmer, and Kutch**, has recently received the Geographical Indication (GI) tag.
- This craft involves intricate **hand-block printing on treated cotton cloth** with symbolic meanings.
- Ajrakh prints typically use **blue, red, and white colours**, representing the sky, land/fire, and stars.
- Introduced over 400 years ago by **Sindhi Muslims**, Ajrakh textiles are commonly worn by nomadic pastoralist and agricultural communities.

## Carbon Farming

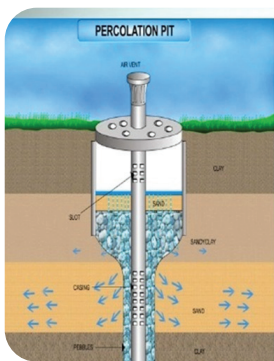
- Carbon farming employs **regenerative practices to enhance agriculture**, restore ecosystems, and mitigate climate change by sequestering carbon and reducing emissions.
- Methods include **agroforestry, conservation farming, integrated nutrient management, and grasslands conservation, among others**.
- **Potential benefits** include significant carbon sequestration in agricultural soils annually and additional income for farmers through carbon credit systems.
- **Challenges** include insufficient policy support and limited resources for sustainable land management, particularly for small landholding farmers.
- **Key initiatives** include the global "4 per 1000 Initiative," launched during UNFCCC COP21 in Paris, promoting resilient agriculture. In India, the National Mission on Sustainable Agriculture promotes agroforestry, micro-irrigation, and crop diversification.



## Blood Minerals

- Apple faces allegations of using ‘**blood minerals**’ from the war-torn Democratic Republic of the Congo (DRC).
- Blood minerals, also known as **conflict minerals**, are minerals that are **mined in areas where violence, human rights violations, and conflict** are intertwined with their extraction.
- The extraction and trade of these minerals have been linked to **funding armed groups and fueling conflicts** in several countries in Central Africa.
- **Tantalum, tin, tungsten, and gold (3TG)** are major examples of blood minerals.

## Percolation Wells



- To divert rainwater into an aquifer,
- The percolation pit is covered with a perforated concrete slab
- The pit is filled with gravel/pebbles followed by river sand for better percolation.
- The top layer of sand must be cleaned and replaced at least once in two years to remove settled silt for improving the percolation

- Percolation wells, a suggested solution to Bengaluru’s water crisis, **capture rainwater to restore and recharge groundwater**.
- Percolation wells are **earthen dams**, typically 12 feet deep and 4 feet wide, filled with gravel and lined with concrete rings.
- They **capture rainwater**, allowing it to percolate down through layers of soil, recharging natural aquifers.

## Areca Nut



- An Areca Research Centre in Karnataka has declared **Thirthahalli** Arecanut as the best quality Areca in the state.
- **Conditions required for growing Arecanut:**
  - **Tropical** horticultural and commercial crop
  - Ideal temperature: 14-36 degree Celsius
  - **Rainfall:** 750-4500 mm
  - Ideal **altitude:** 1000 M above mean sea level
  - Ideal **soil type:** Laterite, loamy, clayey, alluvial.
- **Karnataka produces around 80%** of the country’s produce followed by Kerala and Assam.
- India **imports arecanut** from Sri Lanka, Myanmar and Indonesia.

## Soil Nailing



- Tamil Nadu is using Soil Nailing to ensure the stabilisation of slopes around the **Nilgiri’s** major roads.
- Soil Nailing is a **geotechnical engineering** technique that involves the **insertion of reinforcing elements into the soil** in a specified area to strengthen it.
- This is **followed by ‘hydroseeding’** wherein a mixture of seeds, fertiliser, organic materials and water are applied onto the soil.
- It facilitates the growth of grass and plant life, that will help **hold the topsoil together and prevent erosion**.

# Science & Technology

## Ethylene Oxide (EtO)

- Various Indian spice consignments faced bans in several countries due to excessive traces of **carcinogenic Ethylene oxide**.
- Ethylene oxide, a **colourless gas**, is used as a **pesticide and sterilising agent** with an Ether-like odour.
- The chemical was **originally intended to sterilise medical devices**.
- It is **used as a fumigant in food products especially in spices** to reduce microbial contamination.

## Central Drug Standards Control Organisations (CDSCO)

- Recently, the apex drug regulatory body CDSCO withdrew the power of state licensing authorities (SLA) to issue clearances to export-only drug manufacturing units amid heightened global scrutiny of Indian made drugs.
- The CDSCO, **headed by the Drugs Controller General of India**, is the **central drug authority for regulating the quality of drugs marketed in the country** under the **Drugs and Cosmetics Act, 1940**.
- It operates under the **Directorate General of Health Services, Ministry of Health & Family Welfare**.
- Import or manufacture for sale of drugs including vaccines are regulated under Drugs and Cosmetics Act, 1940 and Drugs & cosmetics Rules, 1945 and New Drugs and Clinical Trials Rules, 2019.
- The **Sugam portal** is an online platform launched by CDSCO to facilitate electronic submission of applications, tracking of status, and other regulatory services.

### Functions of CDSCO

- Approval of new drugs and clinical trials
- Import registration and licensing

- License approving of Blood Banks, LVPs, Vaccines, r-DNA products and some Medical Devices (CLAA Scheme)
- Amendment to D&C Act and Rules
- Banning of drugs and cosmetics
- Grant of Test License, Personal License, NOCs for Export
- Testing of New Drugs
- Oversight and market Surveillance through Inspectorate of Centre Over and Above the State Authority

## RudraM : Anti-Radiation Missile

- **DRDO** successfully flight-tested the **RudraM-II air-to-surface missile from the Su-30 MK-I aircraft** off the Odisha coast.
- Also known as **NGARM (New Generation Anti-Radiation Missile)**, RudraM is a series of supersonic missiles developed to neutralise adversary radar and communication assets.
- It is a **single-stage solid-propelled missile** developed indigenously.
- With this capability, the Indian Air Force (IAF) can now conduct **SEAD (Suppression of Enemy Air Defence) operations** deep inside enemy territory to eliminate their air defence setups.
- RudraM includes variants such as RudraM 1 and RudraM 2, both successfully tested, while RudraM 3 is currently under development.

## Chloropicrin

- The United States accused Russia of employing the **chemical agent chloropicrin** in Ukraine.
- Chloropicrin is a **broad-spectrum fumigant chemical** that can be used as an antimicrobial, fungicide, herbicide, insecticide, nematocide and also as a warfare agent.
- First used as a **poison gas** in the First World War, both by Allied and Central Powers.
- **Features:** Colourless to yellow oily liquid.
- **Effects of Chloropicrin on humans:** Severe irritation to eyes, skin, respiratory tract, induce vomiting, etc.

## Chang'e - 6



- Recently, China announced successfully launching of more than 8 metric ton **Chang'e-6 lunar probe**.
- Chang'e-6 Aims to **bring back 2 kilograms of samples** from the **far side of the moon**, which humans have never done before.
- China **brought samples from the near side of the moon** in 2020 with the **Chang'e-5 mission**.
- It is expected to make a **soft landing in the South Pole of the moon** i.e **Aitken Basin**.
- It included the **ICUBE-Q** orbiter, a **cubesat** developed by **Pakistan**.
  - » CubeSats are miniature satellites typically characterised by their small size and standardised design.

## MQ - 9B Predator Drones



- Indian Army and Indian Air Force will be jointly deploying **MQ-9B Predator drones** in Gorakhpur and Sarsawa (Saharanpur) air bases as per reports.

### About MQ-9B

- ♦ It has two variants - Sky Guardian and Sea Guardian
- ♦ Sea Guardian is used by the Indian Navy from 2020.
- ♦ **Sky Guardian** is the next generation of **remotely piloted aircraft systems (RPAS)**.
- ♦ It can fly for up to **40+ hours** in all types of weather.
- ♦ It is equipped with Multi-mode Radar, an advanced electro optical/infrared (EO/IR) sensor etc.

## Tactical Nuclear Weapon

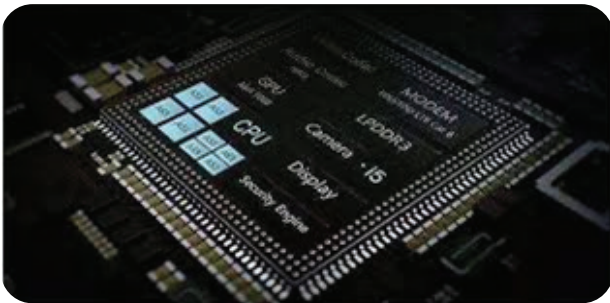
- Russia plans to hold a tactical nuclear weapon drill to deter the West.
- A TNW is any weapon that has not been classified as “strategic” under US- Russian arms control agreements like **Strategic Arms Reduction Treaty** etc.
- Consists of **short-range weapons**, including Land-based missiles (range less than 500 km), and Air- and sea-launched weapons (range less than 600 km).
- TNWs are the **least-regulated** category of nuclear weapons covered in arms control agreements.
- TNWs constitute a **large percentage** of the arsenals of nuclear weapon states.

## Secure IoT

- IIT-Madras incubated startup Mindgrove launched Secure IoT, India's debut high-performance SoC (system on chip).
- **An SoC combines many electronic parts into one chip, like a minicomputer.**



- SoCs differentiate themselves from **traditional devices and PC architectures**, where a **separate chip is used** for the CPU, GPU, RAM, and other essential functional components
- About Secure IoT
  - ▶ It is the first indigenous microcontroller chip.
  - ▶ **Applications:** In deep embedded applications like smart variants of fans, speakers, wearables, etc.
- Due to its features like Cost effectiveness (30% cheaper than other chips in the segment), adaptability, and top-notch security features it will reduce dependence over imports of chips.



### TacticAI

- Google's Deepmind has developed TacticAI that can provide experts with tactical insights in Football.
- TacticAI **predicts the outcome of Corner kicks**, using "Geometric deep learning approach" to create more generalisable models on the field.
- It helps in **Identifying key patterns of tactics** implemented by teams, and developing effective responses with tactical insights.

### Supersonic Missile Assisted Release of Torpedo (SMART Sytem)

- SMART system was successfully flight-tested from Dr APJ Abdul Kalam Island off the coast of Odisha.
- It is a Next-generation **missile-based light-weight torpedo delivery system**.
  - A torpedo is a **type of missile or bomb fired underwater**.

- Developed by **Defence Research and Development Organisation (DRDO)**.
- It is a **canister-based missile system** and is equipped with a **parachute based release system**.
- It consists of advanced sub-systems like **two-stage solid propulsion system, electromechanical actuator system**, etc.
- It will enhance the anti-submarine warfare capability of the Indian Navy far beyond the conventional range of lightweight torpedoes.

### 50 years since India's First Nuclear Test



- Fifty years ago (1974), India conducted its first nuclear test, **Operation Smiling Buddha**, in Pokhran, marking its entry into the nuclear club.
- Led by **Dr H.N. Sethna and Dr R. Ramanna**, the test yielded successful results in the **10-15 kiloton range**.
- This **made India the first nation, apart from the five permanent members of the UN Security Council**, to conduct such a test.
- In 1998, India conducted a series of nuclear tests, code-named **Operation Shakti**, again in Pokhran, expanding its nuclear capabilities.
- These tests enabled India to **build nuclear weapons** with yields up to around **200 kilotons**.
- India's nuclear doctrine emphasises building a **credible minimum deterrent**, adhering to a **"No First Use" policy**.

## Quarks

- Scientists have reported that the **inside of most massive neutron stars** is most likely made of **quark matter**.
  - » Neutron stars are formed when a **massive star runs out of fuel and collapses**.
- Quarks are **elementary particles**. Like the electron, they are not made up of any other particles.
- These **can't exist in isolation**.
- They can only be **found in clumps** (groups) of two or three and such clumps of quarks are called **hadrons**.
- A quark's **antiquark clump is called a meson**.
- These are the ultimate **building blocks of visible matter** in the universe.

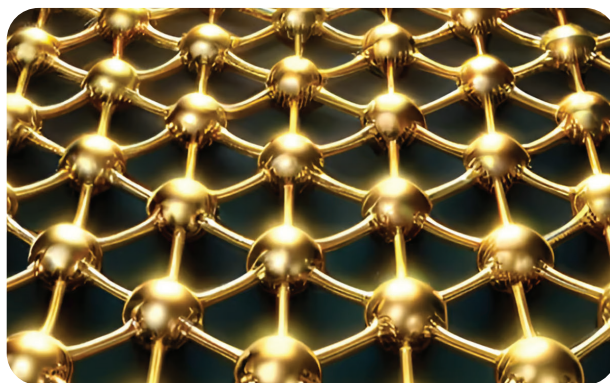
## Geomagnetic Storm

- Stunning aurora displays illuminated the night sky during the strongest G-5 level geomagnetic storm in 21 years, across the Northern Hemisphere.
- Geomagnetic Storms occur when events like **solar flares emit higher than normal levels of radiation** toward Earth, interacting with its **magnetic field**.
- Effects of such storms range from the **appearance of auroras to disruptions in communication systems**.
- These storms are classified on a scale measuring their effects.
- At **G1**, there are **weak fluctuations in power grids and minor impacts on satellite operations**, with auroras visible.
- At **G5**, **voltage control problems and grid system collapse occur, radio waves are disrupted** for days, and auroras can be seen at lower latitudes.

## High Energy Photon Sources

- China is planning to construct a High Energy Photon Source (HEPS). This will put China among the few countries that have fourth-generation synchrotron light sources.
- Synchrotrons **use electricity to produce intense beams of light** more than a million times brighter than the sun.
- Rely on an **array of magnets** called a **multi-bend achromat lattice** to generate X-ray beams that are narrower and therefore brighter.
- **Benefits:** Will help researchers' to understand matter in the dimensions of space, time, and energy, as well as at the level of molecules, atoms, electrons, and spin.
- **Indus-1** was India's synchrotron.
- India is also an **associate member of the European Synchrotron Radiation Facility (ESRF)** based in Grenoble, France.

## Goldene



- Scientists have developed a **sheet of Gold**, called Goldene, which is just **one-atom thick**.
- Created by **sandwiching silicon between titanium carbide layers**, depositing gold, allowing gold atoms to replace silicon, forming monolayer.
- They are **roughly 100 nanometres thick**, approx. **400 times thinner than the thinnest commercially available gold leaf**.
- **Potential applications:** Catalyst in the electronics industry, carbon dioxide conversion, hydrogen generation, water purification, etc.

## Antihistamines

- Antihistamines are **common drugs** that can be purchased without a prescription and are used to **treat short-lived allergic reactions**.
- An antihistamine drug **acts against** the activity of the **histamine receptor** - **proteins that bind** to a compound in the body called **histamine**.
- Depending on its **location**, histamine performs broadly four types of functions, each involving different histamine receptors called H1, H2, H3, and H4.

Histamine Receptors	Found at	Function
H1 Receptors	inner surface of blood and lymphatic vessels, neurons, and smooth muscle cells	block the effects of minor allergies
H2 receptors	gastric glands	release gastric acid for digestion
H3 receptors	cells in the central nervous system	regulate the release of other neurotransmitters, including dopamine and serotonin.
H4 receptors	Bone marrow, peripheral blood, spleen and thymus	regulate the body's inflammatory response

## Nephrotic Syndrome

- The **use of fairness creams** has been linked to **nephrotic syndrome**, with high levels of mercury found in the blood and urine of affected individuals.
- Nephrotic Syndrome is a **kidney disorder characterised by excessive protein in the urine** due to malfunctioning kidney filters called glomeruli.
- The **mercury in the Cosmetic creams** can be absorbed through the skin and lead to systemic toxicity, ultimately causing damage to the kidneys and resulting in Nephrotic Syndrome.

## Biohacking

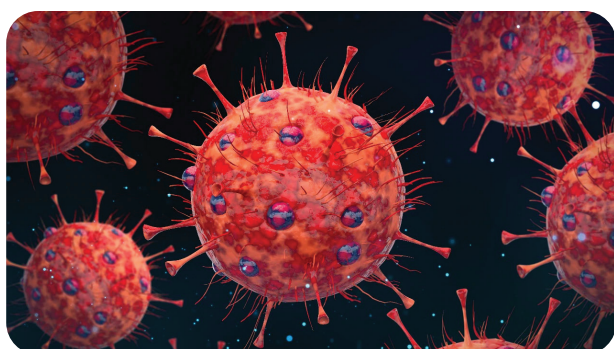
- Biohacking is picking up in India especially in metro cities like Delhi and Mumbai.
- It is a term used to describe **various tips and tricks for enhancing the body's ability to function at peak performance** and maybe even **extend one's lifespan**.
- It includes the **practice of employing methods drawn from fields like biology, genetics, neuroscience and nutrition** to enhance physical or mental performance, improve overall health and well-being, or achieve a specific health outcome.
- There are currently **no laws in India** that specifically address biohacking.



## Thrombosis with Thrombocytopenia Syndrome (TTS)

- AstraZeneca has acknowledged that its COVID-19 vaccine, Covishield, can lead to a rare side effect called Thrombosis with Thrombocytopenia Syndrome (TTS).
- TTS also known as **vaccine-induced immune thrombotic thrombocytopenia (VITT)**, is a rare condition characterised by the **presence of blood clots (thrombosis)** along with a **low platelet count (thrombocytopenia)**.
- **Thrombosis** occurs when blood clots form, potentially **obstructing normal blood flow** in affected blood vessels.
- **Thrombocytopenia** refers to a **deficiency of platelets in the blood**, which are essential for clot formation and preventing excessive bleeding.

## FLiRT



- **New COVID variants**, collectively known as FLiRT, have emerged in India.
- The FLiRT variants (KP.2 and KP1.1) are **descendants of the Omicron JN.1 variant**.
- They are characterised by **increased transmissibility and the ability to potentially evade immunity from vaccines and previous infections**.

## Oxytocin

- Recently, the Delhi High Court called for action against '**rampant use of Oxytocin**' in **dairy colonies** in the national capital.

- It is also known as the '**love hormone**', is a hormone secreted by the **pituitary glands of mammals** during sex, childbirth, lactation or social bonding.
- However, it can also be **chemically manufactured** and is sold by pharma companies.
- The drug was **banned by the Central government** in April 2018, as the drug is misused
  - » in the **dairy industry** where livestock is injected with Oxytocin to increase yield,
  - » used to **increase the size of vegetables** such as pumpkins, watermelons, eggplants, gourds, and cucumbers.

## Salmonella contamination in Spices

- Over the past six months, US customs authorities have rejected 31% of all spice-related shipments from Mahashian Di Hatti (MDH), an Indian spice company, due to salmonella contamination concerns.
- Salmonella is a **genus of bacteria** that can cause **food poisoning** in humans.
- Salmonella bacteria typically **infect the intestinal tract** and can cause symptoms such as diarrhoea, abdominal cramps, fever, and vomiting.
- Contamination usually occurs through the **consumption of contaminated food or water**, particularly raw or undercooked poultry, eggs, meat, and dairy products.
- Proper food handling, cooking, and hygiene practices are essential for preventing salmonella infections.

## Xenotransplantation

- A recipient of a modified pig kidney transplant, passed away about two months after the surgery, with no indication that the transplant caused the death.
- Xenotransplantation involves **transplanting non-human animal cells, tissues, or organs**

into humans to address the shortage of donor organs for transplantation.

- Pigs are commonly used due to their **similar organ size, physiology, and immune system** to humans.
- The process involves gene editing technologies like **CRISPR-Cas9** to modify pig genes for better compatibility with humans.

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PRELIMS, MAINS  
AND INTERVIEW STAGES

**14** TOPPERS FROM  
**PRELIMS CUM  
MAINS BATCH**

**32** TOPPERS FROM  
**MAINS MENTORSHIP  
PROGRAM**

**61** TOTAL TOPPERS INCLUDING FROM  
**INTERVIEW  
MENTORSHIP PROGRAM**

*That is why we are the*  
**NO.1 IAS ACADEMY IN KERALA**

**MAINS TEST SERIES 23**  
STARTS ON **JUNE**

## Miscellaneous

### World Press Freedom Index

- Recently, **Reporters Without Borders (RSF)** released the annual 2024 World Press Freedom Index
- The index **ranks 180 countries based on the freedom of journalism, reporting, and media functioning.**
- RSF is headquartered in **Paris.**
- **Highlights of the report**
  - ▶ **India ranks 159 out of 180** in the 2024 list. The ranking was 161 out of 180 countries last year.
  - ▶ **Norway and Denmark topped the RSF** table while Eritrea was at the bottom, with Syria just ahead of it.
  - ▶ **Pakistan and Sri Lanka** ranked 152 and 150 respectively.

### International Booker Prize

- German author Jenny Erpenbeck and translator Michael Hofmann won the International Booker Prize 2024 for **romantic fiction, "Kairos,"**
- Formerly known as the Man Booker International Prize, is a prestigious **literary award presented in the United Kingdom** established in 2005.
- It **annually recognizes a single book that has been translated into English and published in the UK or Ireland.**
- The prize aims to promote global fiction and celebrates the work of translators.

## Military Gender Advocate of the Year Award

- Major Radhika Sen, an Indian military peacekeeper serving with the United Nations in the Democratic Republic of the Congo, received the 2023 United Nations Military Gender Advocate of the Year Award.
- It is an **annual award** given by the UN Department for Peace Operations (DPO) for the **recognition of a military peacekeeper who has best integrated a gender perspective into peacekeeping activities**.
- Each year, the awardee is selected among candidates nominated by Force Commanders and Heads of Mission from all peace operations.

## Play True Campaign



- NADA India organised the **#PlayTrue Campaign** to create awareness about **clean sports and anti-doping practices** across India, commemorating the **World Anti-Doping Agency (WADA)'s Play True Day** (held annually in April).

### National Anti-Doping Agency (NADA)

- ◆ It is an **autonomous body** set up as a registered society under the **Societies Registration Act of 1860** in 2005 under the **Ministry of Youth Affairs & Sports** with a mandate of **creating dope-free sports in India**.
- ◆ NADA India implements the anti-doping programme in India, in line with the **World Anti-doping Code 2021** of the WADA.

## Petroleum and Explosive Safety Organisation

- **Department for Promotion of Industry and Internal Trade (DPIIT)** released 'Draft Explosives Bill (2024)', for public Consultation.
- The main goals are to **increase fines for regulatory violations** and improve the **efficiency of licensing procedures**.
- **Petroleum and Explosive Safety Organization (PESO)**, formerly known as the Department of Explosives, established in 1898, is the body that currently regulates explosives in India.
- Nodal Ministry: **Ministry of Commerce and Industry**
- Mandate: The **nodal agency for regulating safety of hazardous substances** such as explosives, compressed gas and petroleum.
- Its major work is to **administer the responsibilities delegated under the Explosives Act 1884** (which the new bill seeks to replace) and **Petroleum Act 1934** and the Rules made thereunder.

## Virtual Touch

- Delhi High court has ordered that apart from the concepts of "good touch" and "bad touch", minors must be taught the concept of **"virtual touch"**.
- Virtual Touch' refers to the concept of **teaching minors to recognize potential risks in cyberspace**.
- It involves
  - Educating them about **appropriate online behaviour**
  - **Identifying warning signs** of predatory behaviour
  - Understanding the **importance of privacy settings** and online boundaries
  - Developing **critical thinking skills to assess the credibility** of online contacts and safeguard personal information.



## World Migration Report, 2024

- The biennial World Migration Report was released by the **International Organization for Migration (IOM)**, revealing significant shifts in global migration patterns.
- **India received the highest remittances** of USD 111 billion in 2022 followed by Mexico.
- **India is the origin of the largest number of international migrants** in the world (nearly 18 million).
- **Gulf Cooperation Council (GCC) countries** remain significant destinations for migrant workers, especially from India, Egypt, Bangladesh, Ethiopia, and Kenya.
- IOM was **established in 1951** to promote humane and orderly migration.
- It is a **related organisation** to the United Nations with its headquarters in **Geneva, Switzerland**.
- **India is a member of IOM.**

## Exercise SHAKTI



- The 7th edition of **India-France Joint Military Exercise SHAKTI** commenced at the Joint Training Node in Umroi, Meghalaya recently.
- It is a **biennial training event** conducted alternatively in India and France.
- The Indian contingent primarily from the Rajput Regiment, along with personnel from other arms and services, participated in the exercise.
- **Observers** from the Indian Navy and the Indian Air Force are also part of this 14-day exercise.

## Places in News

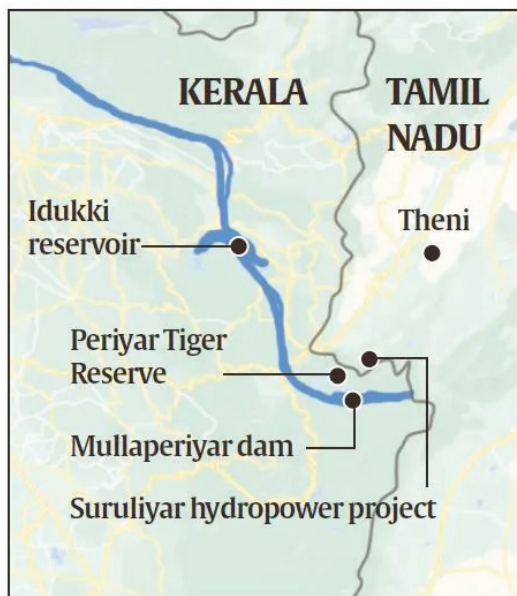
### Batagaika / Batagay Crater



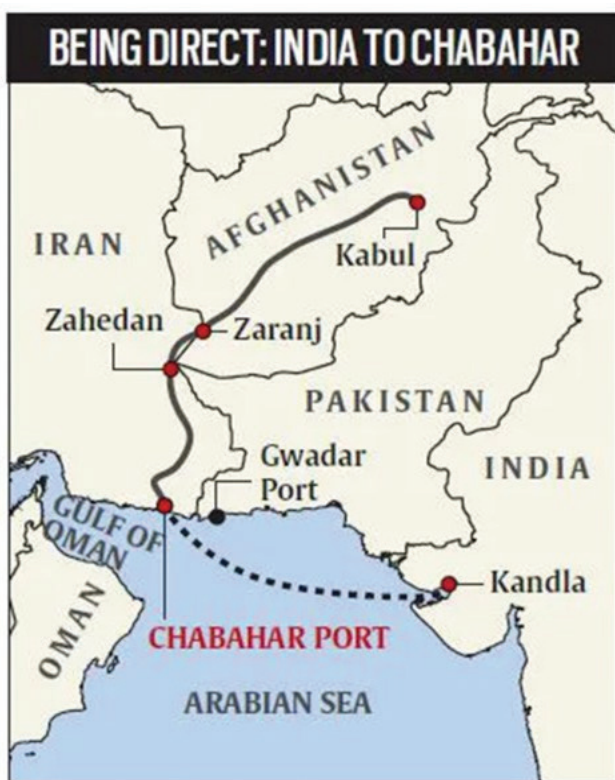
- Scientists warn of the rapid thawing of the **world's biggest permafrost crater** in Russia's Far East as the planet warms.
- The Batagaika crater, **located in Siberia**, is a massive, expanding depression in the Earth's surface, formed due to permafrost thaw.
- Some locals in Russia refer to it as the **"gateway to the underworld,"**

### Mullaperiyar Dam

- The Tamil Nadu government has asked the Expert Appraisal Committee (EAC) of MoEFCC to reject the Kerala government's proposal for constructing a new dam at Mullaperiyar.
- Mullaperiyar dam is a **masonry gravity dam** on the **Periyar River of Idukki district of Kerala**.
- It was constructed between 1887 and 1895 engineered by John Pennycuik.
- The dam is **located in Kerala but is operated and maintained by Tamil Nadu**. It was according to a 999 year lease agreement made during British rule that the operational rights were handed over to Tamil Nadu.



### Chabahar Port



- India and Iran signed a 10-year contract for Chabahar port operation.
- The port of Chabahar is located in Iran's southeastern province of Sistan-Baluchistan **in the Gulf of Oman** and is the **only Iranian port with direct access to the ocean**.
- The **port offers India an alternative route for trade with Afghanistan and Central Asia**, bypassing Pakistan.

- It is **also part of the proposed International North-South Transport Corridor (INSTC)**.
- INSTC a **multimodal transportation route** linking the Indian Ocean and the Persian Gulf to the Caspian Sea via Iran, and onward to northern Europe via St. Petersburg of Russia.

### Ghana (Capital: Accra)

- India-Ghana agreed to strengthen trade ties at the **4th joint trade committee meeting** in Accra.
- Political features
  - 🚩 West African country on **the Gulf of Guinea**.
  - 🚩 **Land Border:** Burkina Faso (north), Togo (east), Côte d'Ivoire (west).
  - 🚩 Maritime border: Atlantic Ocean (south).
- Geographical features
  - ★ Major rivers: Volta, Tano, Pra, etc.
  - ★ Highest peak: Mount Afadjato.
  - ★ Greenwich Meridian passes through Ghana.



## Lebanon (Capital: Beirut)



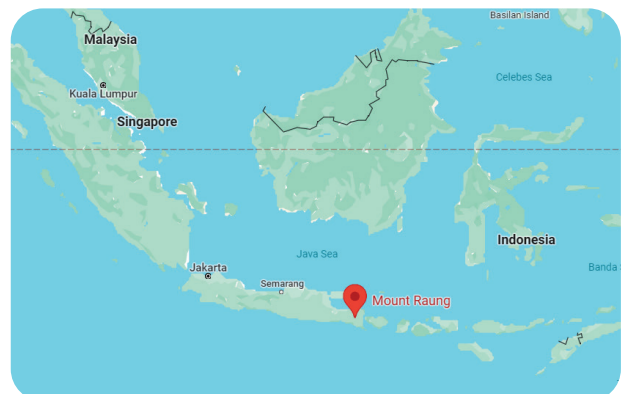
- According to reports, many people died in the **conflict between Hezbollah group and Israel along the Lebanon border.**
- Physical Features
  - Located in **West Asia.**
  - **Bounded** by Syria (north and east), Israel (south), and the Mediterranean Sea (west).
  - Shares **maritime borders with Cyprus**

## Shaksgam Valley



- India protests Chinese road construction at **Shaksgam Valley** in **Pakistan-occupied Kashmir.**
- Shaksgam Valley is a part of the territory of India, strategically located in **Ladakh.**
  - » Through **China-Pakistan boundary agreement of 1963**, Pakistan unlawfully **ceded** the area to China
- It is bounded by **KunLun Mountains** and by **Karakoram peaks** and is adjacent to the **Siachen Glacier.**
- The valley is located along both sides of the **Shaksgam River.**

## Mount Ruang



- **Indonesia's Mount Ruang volcano** recently erupted, triggering the highest level of alert.
- It is a **stratovolcano** located in Indonesia's **Sulawesi Islands.**
  - » Stratovolcano, a volcanic landform characterised by a **conical shape** formed by layers of volcanic material deposited during **successive volcanic eruptions.**
- It is one of around 130 active volcanoes in Indonesia, **lying in the Ring of Fire**, a string of volcanoes around the edges of the Pacific Ocean.
- Other volcanoes in Indonesia include **Krakatau, Merapi and Semeru.**



## Lipulekh, Limpiyadhura & Kalapani (Nepal)



- Nepal cabinet has recently **approved printing of new denominations of 100 of Nepalese currency** featuring a map that includes Indian territories of Limpiyadhura, Lipulekh, and Kalapani.
- Kalapani is the largest territorial dispute between Nepal and India and is a **tri-junction** between India, Nepal and Tibet (China).
- Treaty of Sagauli** (1816) between British East India Company and the then Nepali Gurkha rulers demarcated River Kali as a boundary between India and Nepal.
- Key to the disagreement is the **origin of River Kali**.

## Second Thomas Shoal Reef

- Tensions have escalated at Second Thomas Shoal, with China blocking manoeuvres and disrupting supply missions.
- Located in the **Spratly Islands of the South China Sea**, the shoal is within the **Philippines' exclusive economic zone (EEZ)** but is also claimed by China.
- A **shoal** is a submerged or partially-submerged long and narrow ridge, normally of sand, that forms in rivers and oceans. The water is shallow here.

## South China Sea

- » One major dispute involves the “**nine-dash line**” claimed by **China**, which encompasses most of the South China Sea and overlaps with the exclusive economic zone claims of several other South Asian countries.

### Key disputed features include

- ♦ **Paracel Islands** (controlled by China but also claimed by Taiwan and Vietnam)
- ♦ **Spratly Islands** (claimed by multiple countries including China, Taiwan, Vietnam, the Philippines, and Malaysia)
- ♦ **Scarborough Shoal** (claimed by China, Taiwan, and the Philippines)



## Darfur (Sudan)



- The UN has said that people have been eating 'grass and peanut shells' in Darfur due to the hunger crisis in Sudan.
- Since April 2023, civil war in Sudan has ensued with clashes between the **Sudanese army and Rapid Support Forces (RSF)**
- Darfur is a **region of western Sudan**, bordering Libya, Chad, and the Central African Republic.

## Humboldt Glacier



- The **International Cryosphere Climate Initiative (ICCI)** has reclassified Venezuela's last glacier, the **Humboldt**, also known as La Corona Glacier in the Sierra Nevada de Mérida of the Andes, as **an ice field**.
- Although there is no universal size criterion for glaciers, scientists agree the Humboldt ice field is **now too small to flow**.
- Due to climate change, Venezuela is likely the first country to lose all its glaciers, having had six previously.
- Formed in 2009 after COP-15 in Copenhagen, ICCI is a network of experts and researchers working with governments and organisations **to preserve the Earth's cryosphere**.
- **Cryosphere** includes all surface areas covered in ice and snow.

## Species in News

### Sea Anemone



- Researchers studying sea anemones (Actiniaria) in the Lakshadweep Islands have observed a widespread bleaching event among the anemones off Agatti Island for the first time.
- Sea anemone is a **predatory marine invertebrate**.
- These fleshy, solitary organisms have **column-like bodies with tentacles** surrounding an oral disk.
- They can **sting and paralyse prey** with a harpoon-like filament and neurotoxin injected by their tentacles.
- Sea anemones can be found in **many environments, including on lava rocks and in sediments**.
- As **cnidarians**, sea anemones are **related to corals, jellyfish and hydra**.
- They **form symbiotic relationships with other animals**; their most well-known **alliance is with clownfish**.
- **Sea anemone bleaching** is the process by which sea anemones expel or lose the microscopic algae, called zooxanthellae, that live within their tissues and turn a pale white or translucent colour.

## Great Adjutant Stork



- Dr. Purnima Devi Barman, leader of Hargila Army, (an all women Hargila conservation team in Assam) from India has been awarded the 2024 **Whitley Gold Award** (dubbed 'Green Oscar') by the UK charity **Whitley Fund for Nature (WFN)** for her efforts to save the Greater Adjutant Stork.
- **The greater adjutant (Hargila in Assamese)** is a member of the **stork family**.
- Once found widely across South Asia but it is now restricted to a much smaller range with **only three breeding grounds; two in India, at Assam (largest) and Bhagalpur (Bihar), and another in Cambodia,**
- It is **valued as scavengers**, they were once depicted in the logo of the Calcutta Municipal Corporation.
- Protection Status:
  - ★ **IUCN Red List: Near Threatened.**
  - ★ **Wildlife (Protection) Act, 1972: Schedule I.**

## Blue Sheep and Himalayan Ibex

- Census to estimate blue sheep and Himalayan ibex populations has **begun in Himachal Pradesh's Lahaul & Spiti district.**

## Blue Sheep



- The **Bharal, also called the blue sheep**, is a caprine native to the high Himalayas.
- It is the only member of the genus *Pseudois*
- Bharal remain motionless when approached due to their excellent camouflage and lack of cover in their environment.
- Distribution: It occurs in India, Bhutan, China (in Gansu, Ningxia, Sichuan, Tibet, and Inner Mongolia), Myanmar, Nepal, and Pakistan.
- Conservation Status:

★ **IUCN Red List: Least Concern**

★ **Wildlife Protection Act 1972: Schedule 1**

## Himalayan Ibex



- It is a **subspecies of the Siberian ibex** that is **native to the Himalayan region of India, Pakistan, Tibet, and Nepal.**
- They inhabit the **high-altitude regions of the Himalayas, including the Trans-Himalayan region.**
- It is found primarily in the states of **Jammu and Kashmir, Himachal Pradesh, and Uttarakhand.**
- Conservation Status:
  - ★ **IUCN Red List: Near Threatened**
  - ★ **Wildlife Protection Act 1972: Schedule 1**





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**02 GEOGRAPHY**

**03 MALAYALAM LITERATURE**

**04 PHYSICS**

**05 POLITICAL SCIENCE &  
INTERNATIONAL RELATIONS**

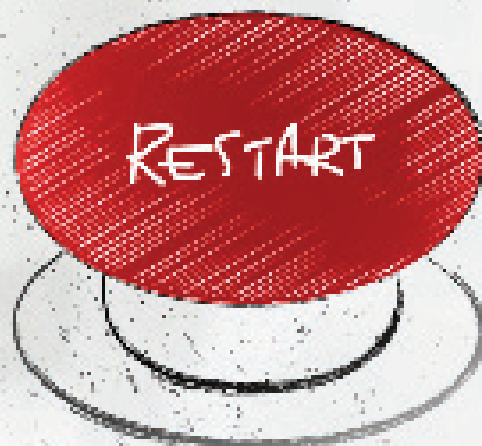
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