

Factly Weekly

Compilation

2024

**For UPSC CSE Prelims
Exam**

**2nd Week
January 2024**

Index

Subject: Polity and Nation	3
SC Legal Services Committee	3
Registered Unrecognised Political Parties (RUPPs)	4
Debating India's new hit-and-run law	4
Subject: International Relations	5
India, U.K. sign two deals during Defence Minister's visit	5
India signs cooperation pacts with the UAE, Czech Republic	6
Subject: Indian Economy	6
First Inland Waterways Development Council Meeting	6
India Club: what it means for our shipping firms	7
SBI Report on Income inequality in India.....	8
Bharat Tex 2024.....	8
Atal Setu: India's longest sea bridge is set to be inaugurated	9
Subject: Science & Technology	10
AI Bio-Imaging Bank for Cancer Detection	10
Voice cloning fraud	11
LK-99: South Korea superconductivity claim revived with new data	11
DRDO counter-drone system.....	12
First set of satellites with direct to-cell capabilities launched by SpaceX.....	13
Tricolime: IISR develops new granular lime-based trichoderma bio-pesticide, fertiliser ..	13
Amaterasu: Super-energetic particle from outer space	14
ANEEL: New nuclear fuel that can guarantee India's green energy transition.....	15
Ministry notifies revised rules to ensure quality of medicines.....	16
Spiral Galaxy: MCG-01-24-014	17
New Species of Sauropod Dinosaur Discovered in Argentina	18
Thylakoids	19
Drishti 10 Starliner UAV (Unmanned Aerial Vehicle): First Indigenous medium-altitude long-endurance drone of	20
Cold Dark Matter of the Universe.....	21
DRDO successfully tests Next-Gen Akash Missile.....	21
Subject: Environment	22
Majority of cities far from clean air target, says study	22

Factly Compilation for the Month of January (Second Week) 2024

IISc study revealed how logging and climate change impact montane birds.....	23
Darjeeling zoo has world's largest number of snow leopards	24
Subject: Schemes & Programmes	26
PRASADAM: India's First Healthy & Hygienic Food Street	26
Subject: Reports & Indices	27
SC Report Reveals Accessibility Gaps for People with Disabilities in Indian Courts	27
Subject: Art & Culture	27
How are the tableaux are selected for Republic Day?	27
Subject: Miscellaneous National Landslide Susceptibility Map	28
Swachh Survekshan Awards 2023	29

Subject: Polity and Nation

SC Legal Services Committee

Why in the News?

Justice BR Gavai has been nominated as the Chairman of the Supreme Court Legal Services Committee (SCLSC), replacing Justice Sanjiv Khanna.

What is the Supreme Court Legal Services Committee (SCLSC)?

Aspect	Details
What is it?	1) The SCLSC was established under Section 3A of the Legal Services Authorities Act, 1987 . 2) It aims to offer “ free and competent legal services to the vulnerable sections of society ” in cases under the Supreme Court’s jurisdiction.
Composition	1) The committee comprises a sitting Supreme Court judge as the Chairman and 9 other members appointed by the Chief Justice of India (CJI) 2) The Centre prescribes the qualifications for membership. 3) The CJI can also appoint the Secretary to the Committee.
Features	The Committee has the authority, as per the Center’s prescription and in consultation with the CJI, to appoint officers and employees.

What are the constitutional provisions governing the provision of legal services?

- 1) **Free Legal Aid: Article 39A** underscores the imperative of making justice accessible by providing free legal assistance to the impoverished and vulnerable segments of society.
- 2) **Articles 14 and 22(1):** Advocating for equality and ensuring well-informed rights for all.

What is the Legal Services Authorities Act, 1987?

- 1) The Act established a **statutory foundation** for legal aid programs.
- 2) **Aim**- To offer free and competent legal services to various eligible groups, such as women, children, SC/ST and EWS categories, industrial workers, disabled persons, etc.
- 3) **Section 27 of the 1987 Act** empowers the Centre, in consultation with the CJI, to make rules through notification for implementing the Act.
- 4) In 1995, **NALSA** was constituted under the Act to monitor and evaluate the implementation of legal aid programs and to formulate policies for ensuring the availability of legal services.
- 5) In every state, **State Legal Services Authorities (SLSA)** were established to implement NALSA’s policies and directions, give free legal services to people, and conduct Lok Adalats.
- 6) Similarly, **District Legal Services Authorities (DLSAs)** and Taluk Legal Services Committees were established in districts and most taluks.

Registered Unrecognised Political Parties (RUPPs)

Why in the news?

Recently, the Election Commission of India brought in new rules for the allocation of symbols to **Registered Unrecognised Political Parties (RUPPs)**.

What are the new rules?

- 1) RUPPs (Registered Unrecognized Political Parties) are now required to **furnish audited accounts for the last three fiscal years**.
- 2) They are mandated to **submit expenditure reports for the two preceding elections**.
- 3) The application process for symbols, along with the authorized party official's signature, has been integrated into a unified format.
- 4) **Annexure No. 3**, which is a declaration that they have submitted the requisite reports, has been added to the application.
- 5) These updated regulations are set to be **enforced starting January 11, 2024**.
- 6) These modifications aim to **streamline the process and improve transparency in the allocation of symbols to RUPPs**.

What are Registered Unrecognized Political Parties?

- 1) RUPPs are those parties which are either **newly-registered parties** or those which **have not secured enough percentage of votes in the Assembly or general election to become a State party** or those that have **never contested elections after being registered**.
- 2) Common symbols are provided to RUPPs based upon an undertaking that they would put up **"at least 5% of total candidates with regard to said Legislative Assembly election of a State"**.
- 3) The EC receives the applications from RUPPs in prescribed proforma for allotment of symbol under **Provisions of Para 10B of the Election Symbols (Reservation & Allotment) Order, 1968**.
- 4) In September 2022, the EC had **de-listed 86 non-existent RUPPs** and declared another **253 as 'Inactive RUPPs'**.

Debating India's new hit-and-run law

Why in the News?

Transporters and commercial drivers from various States are protesting against the **Section 106 (2) of the Bharatiya Nyaya Sanhita, 2023 (BNS)**, which imposes stringent penalties for hit-and-run incidents.

What is Section 106 (2) of the Bharatiya Nyaya Sanhita, 2023 (BNS) ?

- 1) This section outlines a maximum punishment of 10 years and a fine in hit-and-run cases. There is no provision which specifies the exact amount of fine to be imposed. Hence, the rumours of the fine being Rs. 7 lakh are untrue.

2) It is a **non – bailable section**.

3) If the driver escapes to protect himself from the bystanders but reports the incident to the police or magistrate shortly thereafter, then the offence will be registered under section 106(1). However, if the driver escapes without reporting the incident to the police or magistrate shortly thereafter, then an offence will be registered, under Section 106(2) of BNS.

Note- The maximum punishment is 10 years under **Section 106(2)** while the maximum punishment under **section 106(1)** is 5 years.

4) Section 161 of the 2019 Motor Vehicles (Amendment) Act offers compensation for hit-and-run victims, unlike Section 106(2) of BNS, **under which the drivers are not obligated to pay this compensation.**

What are the protestors concerns and demands?

1) **Stringent punishment-** They are worried about severe punishment of 10 years imprisonment and ₹7 lakh fine for fleeing accidents scenes.

2) **Difficult working conditions-** They argue that the new law fails to consider factors like long driving hours and difficult roads and external factors like poor visibility.

3) **Fear of Unfair Blame-** Drivers commonly feel that they are unjustly held responsible for accidents, regardless of the actual circumstances.

4) **Law enforcement abuse-** Drivers are worried that law enforcement agencies may misuse the law, might discourage people from entering or staying in the transport profession.

Subject: International Relations

India, U.K. sign two deals during Defence Minister's visit

Why in the News?

India's defense minister recently visited London, where India and the United Kingdom inked two agreements. It marks the first visit by an Indian Defense Minister to the U.K. in over two decades.

What agreements have been signed between India and the UK?

1) Both parties have signed a Memorandum of Understanding (MoU) for a bilateral **international cadet exchange program** and a Letter of Arrangement (**LoA on defense collaboration in research and development**).

2) LoA was signed between the Defence Research and Development Organisation and the U.K.'s Defence Science and Technology Laboratory for further enhancing collaboration in the area of defence research and development.

3) **Significance of these agreements-** It will boost people-to-people exchanges, especially among the youth, and expand the scope of defense research collaboration between the two nations.

India signs cooperation pacts with the UAE, Czech Republic

Why in the News?

India has entered into multiple bilateral cooperation agreements with the United Arab Emirates and the Czech Republic at the vibrant Gujrat summit.

What agreements have been signed with UAE & Czech Republic?

Aspect	Details
India-UAE agreements	a) They finalized agreements on healthcare, the development of food parks, and renewable energy. b) The renewable energy agreement will facilitate enhanced collaboration on green hydrogen and solar power. Note – Progress has been achieved in developing food parks in India as part of the I2U2 partnership involving India, Israel, the UAE, and the United States.
India-Czech Republic agreements	a) They have released a strategic partnership on innovation . b) The partnership will focus on sectors such as startup and innovation, cybersecurity, digital domains, artificial intelligence, defence, nuclear energy and circular economy.

Subject: Indian Economy

First Inland Waterways Development Council Meeting

Why in the news?

The Inland Waterways Authority of India is set to host the inaugural 'Inland Waterways Development Council' meeting on January 8, 2023, in Kolkata.

What are the Key Initiatives to be unveiled during the meeting?

- 1) This will be the **first meeting of the Inland Waterways Development Council**.
- 2) The Inland Waterways Development Council (IWDC) meeting boasts a comprehensive agenda that aims to **tackle pivotal issues concerning the advancement of inland waterways in India**.
- 3) As part of the agenda, several initiatives, including the **"Harit Nauka – Guidelines for Green Transition of Inland Vessels"** and the **"River Cruise Tourism Roadmap 2047"** will also be launched at the event.
- 4) The meeting's focus will encompass crucial aspects such as fairway development, private sector engagement, and optimizing cargo transport efficiency in **Inland Water Transport (IWT)**.
- 5) The agenda also includes promoting eco-friendly vessels for passenger transportation, exploring economic advantages in river cruise tourism, and advocating for sustainable practices in inland waterways development.

What is Inland Waterways Development Council?

- 1) It was **established in October 2023** by the Government of India.
- 2) It was established to focus on **comprehensive development of inland waterways and the associated Inland Water Transport (IWT) ecosystem** for improved cargo efficiency, passenger movement, and river cruise tourism, with active participation from States and Union Territories.

What are growth Targets for Cargo and Cruise Sectors?

- 1) The Ministry aims to raise inland waterways' cargo modal share **from 2% currently to 5% under Maritime India Vision 2030**.
- 2) The 2047 goals envision cargo volumes to rise from **120 million tonnes per annum presently to over 500 million tonnes**.

India Club: what it means for our shipping firms

Why in the News?

India plans to create its own protection and indemnity (P&I) entity, the India Club, to provide insurance for ships in Indian waters thereby reducing reliance on global firms.

What is a P&I entity or club?

- 1) It is a **mutual insurance association** offering risk-pooling, information, and representation exclusively for its members, including ship owners, operators, charterers, freight forwarders, and warehouses.
- 2) Unlike traditional insurers, P&I clubs **reports only to their members, cover third-party open-ended risks** such as cargo damage, war, and environmental issues like oil spills which are often avoided by conventional insurers.

How many such clubs operate globally?

- 1) The **London-based International Group of P&I Clubs** consists of 13 clubs, covering around 90% of global ocean-going ships.
- 2) **Member clubs**– The UK, US, Korea, Singapore, Japan, the Netherlands, China, Bermuda, Norway, and Sweden.
- 3) Club members contribute to the club's common risk-pool according to the pooling agreement rules.

Why is India looking to set up its own P&I entity?

A locally focused Indian entity could **diminish the nation's susceptibility to global sanctions**, as it ensures coverage for ships operating in regions facing sanctions. The events surrounding the Russia-Ukraine war underscore the importance of having such coverage.

What difficulties might confront such an entity?

- 1) The move will only benefit players like the Shipping Corporation of India and some small shipping lines as **90% of Indian-owned ships are operating under foreign flags** of countries like Panama, Liberia and Kazakhstan.

2) The India Club might encounter challenges if global traders do not accept its cover.

SBI Report on Income inequality in India

Why in the News?

According to SBI Research latest report, there has been a reduction in income inequality in India, signaling a favorable shift towards upward mobility and the expansion of the middle class.

What are the findings of the report?

- 1) **Increasing tax base**- The report, citing CBDT data, notes a continuous expansion in the Income Tax base. The number of tax filers increased to 74 million in AY 2022-23 from 70 million in AY 2021-22.
- 2) **Decline in Gini Coefficient**- Gini Coefficient(a measure of income inequality) has declined from 0.472 during Assessment Year 2014-15 to 0.402 for AY 2022-23.
- 3) **Share of Top earners declined** – The share of top earners with incomes exceeding Rs 10 crores and Rs 100 crores has decreased from 2013-14 to 2020-21.
- 4) **Improving upward mobility** – The drop in income inequality stems from significant upward mobility. More than 36% of individuals originally in the lowest income bracket in FY14 have transitioned to higher income levels. It led to a notable 21% increase in their earnings from FY14 to FY21.
- 5) The report indicates **rising female labour force participation**.
- 6) Evident shifts in income levels for MSMEs and evolving consumption patterns in the aftermath of the Covid-19 pandemic debunk the myth of **K-shaped growth**.

What is Gini coefficient?

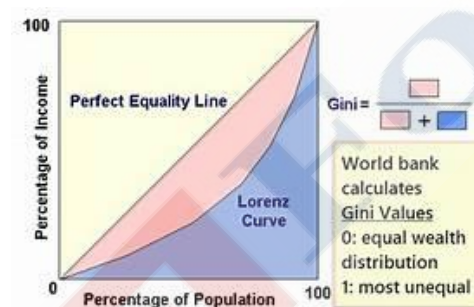


Figure 1 Source- oercommons.org

- 1) The Gini coefficient, **derived from the Lorenz curve**, serves as an indicator of income or wealth inequality.
- 2) The coefficient **ranges from 0 (0%) to 1 (100%)**, 0 representing perfect equality (where every resident in a country has the same income) and 1 representing perfect inequality (one resident earned all income and the rest earned nothing). Higher the value of Gini coefficient, higher the inequality.

Bharat Tex 2024

Why in news?

India's textile industry, in collaboration with industry associations, is gearing up to host "Bharat Tex 2024."

What is Bharat tex 2024?

Factly Compilation for the Month of January (Second Week) 2024

- 1) Bharat Tex 2024 is a global textile mega event **organised by** a consortium of 11 **Textile Export Promotion Councils** and **supported by the Ministry of Textiles**.
- 2) It is to **held** in **New Delhi** from February 26-29, 2024,
- 3) The **aim of the event** is to position and showcase India's entire textile value chain and also highlight strengths in fashion, traditional crafts and sustainability initiatives.

What are the salient feature of the event?

- 1) The event will be in line with **India's 5F vision**, which represents the journey from **Farm to Fibre to Factory to Fashion to Foreign**, encompassing the whole textile production process from raw resources to worldwide markets.
- 2) The event will showcase pavilions on **Sustainability and Recycling**, discussions on **global supply chain resilience and digitization**, **fabric testing zones**, **product demos**, and **masterclasses**.
- 3) It will also provides a platform for **knowledge exchange**, **information dissemination**, and **Government to Government and Business to Business interactions**.

Atal Setu: India's longest sea bridge is set to be inaugurated

Why in news?

Prime Minister Narendra Modi will inaugurate the **Atal Setu Nhava Sheva Sea Link** or **Mumbai Trans Harbour Link**.

What is Mumbai Trans Harbour Link (MTHL)?

- 1) It is the **country's longest bridge over the sea**. It is a 22-km-long twin-carriageway six-lane bridge over the Thane Creek in the Arabian Sea.
- 2) It is officially named as the **Atal Setu Nhava Sheva Sea Link**.
- 3) The MTHL includes a **16.5 km sea link** and viaducts on land at either end with a **cumulative length of 5.5 km**.
- 4) The **objective of the project** is to **improve connectivity** in the Mumbai Metropolitan Region which comprises the districts of Mumbai, Thane, Palghar, and Raigad, and promote the region's economic development.

How MTHL will help?

- 1) It will connect **Sewri in the island city of Mumbai to Chirle** in Raigad district on the mainland.
- 2) It will dramatically **cut travel time**, and will **decongest the existing route over the Vashi bridge**.
- 3) It will significantly **improve connectivity** between South Mumbai and the under-construction Navi Mumbai International Airport, the Mumbai Pune Expressway, the Mumbai-Goa Highway, and the main hinterland in general.
- 4) It will also provide improved access to **Jawaharlal Nehru Port**.

Subject: Science & Technology

AI Bio-Imaging Bank for Cancer Detection

Why in the News?

Mumbai's Tata Memorial Hospital (TMH), India's largest cancer hospital, embraces AI with a 'Bio-Imaging Bank' for early-stage cancer detection.

What is Bio-Imaging Bank?

- 1) It is a comprehensive **repository containing radiology and pathology images** with clinical details, outcome data, treatment specifics, and additional metadata.
- 2) This resource is strategically crafted for training, validation, and rigorous testing of AI algorithms.
- 3) The project **uses deep learning to develop a cancer specific tailored algorithm** for early detection, incorporating **data from 60,000 patients**.
- 4) Initially the project is dedicated to **head and neck cancers as well as lung cancers**, with a goal of having at least 1000 patients for each cancer type.
- 5) It focuses on medical tasks like screening for lymph node metastases, nucleus segmentation, classification, and predicting biomarkers (e.g., HPV in oropharyngeal, EGFR in lung cancer), as well as therapy response prediction.
- 5) **Funded by**– The Department of Biotechnology, in collaboration with IIT-Bombay, RGCIRC-New Delhi, AIIMS-New Delhi, and PGIMER-Chandigarh.

How does AI help in early cancer detection?

- 1) It analyzes radiological and pathological images, learning from extensive datasets to identify unique features associated with different cancers, enabling early detection of tissue changes and potential malignancies.
- 2) The teams at TMH segment and annotates images, correlating them with biopsy results, histopathology reports, and genomic sequences to develop algorithms.

What is its Significance?

- 1) The AI aids in **early diagnosis** which has proven to be 98 percent correct after doctor's cross-check.
- 2) AI's potential lies in **tailoring treatment approaches** based on diverse patient profiles, and thus optimising therapy outcomes.
- 3) It **reduces radiation exposure** for pediatric patients undergoing CT scans by 40 %.

Voice cloning fraud

Why in the News?

Voice clone fraud is increasing in India, with a May report indicating that 47% of surveyed individuals in the country have been affected by an AI-generated voice scam.

What are the Findings of the Report?

- 1) A May report titled '**The Artificial Imposter**' disclosed that 47% of surveyed Indians, nearly double the global average of 25%, have either fallen victim to or known someone affected by an AI-generated voice scam.
- 2) **India ranked highest globally** in the number of victims to AI voice scams.
- 3) McAfee reported that **66% of Indians** would respond to a call appearing to be from a friend or family member urgently seeking money.
- 4) The report found that messages claiming the sender was robbed (70%), in a car accident (69%), lost their phone or wallet (65%), or needed financial aid while traveling abroad (62%) were the most effective excuses.
- 5) The report revealed that **86% of Indians** share their voice data online or via voice notes at least once a week, making these tools highly potent.

How are Voice Clones Done?

- 1) Once a scammer acquires an individual's audio clip, uploading it to online programs such as Murf, Resemble, and Speechify allows for accurate voice replication, excluding some intonations.
- 2) Voice cloning often employs deep learning techniques and neural networks, such as recurrent neural networks (RNNs) or convolutional neural networks (CNNs). These models can capture complex patterns in speech and generate realistic-sounding synthetic voices.

LK-99: South Korea superconductivity claim revived with new data

Why in the News?

Chinese and Japanese scientists have found signs of superconductivity in the controversial material LK-99, which was under scrutiny for similar claims last year.



Figure 2. Source- Wikipedia

What is LK-99?

- 1) LK-99 is a mixture of powdered compounds of lead, oxygen, sulfur, and phosphorus.
- 2) When heated at very high temperatures, it forms a **dark grey solid**.
- 3) Korean researchers have proposed it as a **potential room temperature and pressure (RTP) superconductor**, claiming its superconducting properties up to 400 K at ambient pressure.

4) Later Independent researchers identified issues in the group's data and rejected the assertion.

What were the findings reported in the new study?

- 1) It observed an indication of near-room-temperature superconductivity in LK-99.
- 2) The researchers observed the **Meissner effect** in LK-99.
- 3) Researchers look for **hysteresis loop** during the experiment.

Note- A hysteresis loop shows how a material's magnetization responds to changes in an applied magnetic field. The loop shape is due to the material retaining magnetization even after the external magnetic field is reduced to zero.

What is the Meissner effect?

- 1) The Meissner effect in **superconductors** is the **expulsion of a magnetic field** when the material transitions to the superconducting state below the critical temperature, causing repulsion of nearby magnets.
- 2) The effect is **only observable with a direct current (DC)** used to generate the magnetic field.
- 3) If an alternating current is employed, the material won't exhibit the effect as the magnetic field continuously changes directions.
- 4) It is utilized in various **technological applications**, such as in the development of levitating magnetic trains and superconducting magnets.

DRDO counter-drone system

Why in the News?

The Defence Research and Development Organisation (DRDO) has completed the development of its counter-drone system, which is now poised for production.

What is DRDO's counter-drone system?

- 1) It is a fully integrated anti-drone system that encompasses the **detection, identification, and neutralization of drones**.
- 2) The technology can effectively counter attacks, employ soft kill measures, and implement hard kill methods against various types of drones, including micro drones.
- 3) Users can also customize it for various other challenges.
- 4) The Transfer of Technology (ToT) has been **provided to private industries** such as BEL, Adani, L&T, and Icom.

Which other significant technologies is DRDO currently developing?

- 1) The DRDO stated that the **Tapas** Medium Altitude Long Endurance (MALE) UAV for the Intelligence, Surveillance, Target Acquisition and Reconnaissance (**ISTAR**) application is in advanced developmental trials.

Note- ISTAR is a military concept that integrates diverse technologies for gathering and analyzing information, aiding strategic and tactical decision-making.

2) The short-range armed **UAV Archer**, designed for reconnaissance, surveillance, and low-intensity conflict, is currently undergoing developmental flight trials.

First set of satellites with direct to-cell capabilities launched by SpaceX

Why in news?

Recently, SpaceX successfully launched the **first set of Starlink satellites** equipped with **direct-to-cell capabilities**.

These Starlink satellites can **beam phone signals from space directly to smartphones**.

What is direct-to-cell satellite technology?

- 1) Direct-to-cell technology **allows for the direct transmission of communication signals**, including text messages, voice, and data, from space-based satellites **to mobile devices (cell phones)**, without conventional ground-based infrastructure.
- 2) The technology will also **connect Internet of Things (IoT) devices** with common LTE mobile standards.
- 3) This is **beneficial in remote or underserved areas**, where setting up conventional terrestrial networks can be difficult or economically impractical.
- 4) Japan's KDDI, Australia's Optus, New Zealand's One NZ, Canada's Rogers will collaborate with SpaceX to launch direct-to-cell technology.

Tricolime: IISR develops new granular lime-based trichoderma bio-pesticide, fertiliser

Why in news?

ICAR-Indian Institute of Spices Research, Kozhikode has developed a new granular lime-based Trichoderma formulation which is a fungal bio-control agent.

What is Tricolime?

- 1) Trichoderma is a **fungal biocontrol agent** present in all soils. In simple term, it is a genus of fungi that can be found in most soils.
- 2) Tricolime integrates **Trichoderma and lime** into a single product, making the **application easier for the farmers**.



What is the significance of Tricolime?

- 1) Tricolime serves as a **bio-pesticide** and **bio-fertiliser** in crop production.
- 2) Being a bio pesticide, it promotes plant growth and shields crops from soil-borne pathogens, all in a single application.
- 3) Functioning as bio fertiliser, tricolime **improves the physical condition of the soil**, enhances **secondary nutrient availability** and boosts **soil microbial activity**.

Amaterasu: Super-energetic particle from outer space

Why in the News?

Japanese scientists found a powerful cosmic ray on Earth named 'Amaterasu,' the **second-highest-energy cosmic ray** ever discovered.

What is Amaterasu?

- 1) It is one of the **high-energy cosmic ray**, named after the Japanese Sun goddess.
- 2) It appears to have arrived from a void in space where nothing is known to exist.
- 3) The Amaterasu particle possesses an **energy surpassing 240 exa-electron volts (EeV)**, making it **millions of times more powerful than particles produced by the Large Hadron Collider**, the world's most powerful particle accelerator.
- 4) It **ranks second only to the Oh-My-God particle**, another ultra-high-energy cosmic ray detected in 1991, which registered at 320 EeV.

What are cosmic rays?

- 1) They are high-energy particles, moving at nearly the speed of light, originate from the Sun, our galaxy, and distant galaxies.
- 2) These particles can **include protons, alpha particles (helium nuclei), and heavier ions**.
- 3) Ultra-high-energy cosmic rays are subatomic particles from extragalactic sources with energies greater than 1 EeV.

Significance– They are crucial for studying astrophysical phenomena and understanding the properties of particles at very high energies.

ANEEL: New nuclear fuel that can guarantee India's green energy transition

Why in news?

Clean Core Thorium Energy, a Chicago-based company, developed **ANEEL (Advanced Nuclear Energy for Enriched Life)**, a fuel that combines **Thorium and High Assay Low Enriched Uranium (HALEU)** (named after India's scientist, Dr Anil Kakodkar).

What is High Assay Low Enriched Uranium (HALEU)?

HALEU is defined as **uranium enriched to greater than 5% and less than 20% of the U-235 isotope.**

Most of the current reactors run on uranium fuel **enriched up to 5 percent Uranium-235.**

HALEU is needed for many of the advanced nuclear reactor designs under development. But **HALEU is not yet widely available commercially.**

How ANEEL can be a game-changer for green energy transition?

- 1) ANEEL **can be used in the existing Pressurized Heavy-Water Reactors (PHWRs)** which is an indigenous reactor system.
- 2) ANEEL provides an **easier and quicker alternative** for the deployment of thorium leveraging imported HALEU, especially for nations which lack the infrastructure to install natural gas, wind or solar or hydro.
- 3) By utilising this fuel, the **operation cost and nuclear waste can be reduced** significantly as compared with the currently used natural uranium.
- 4) ANEEL fuel bundle **lasts much longer and burns more efficiently.**
- 5) The spent ANEEL fuel **cannot be used for weapons.**
- 6) With this, **India** can guarantee **green energy security** for the subcontinent by fast-tracking the use of **Thorium** in nuclear reactors.

State	Monazite (Million tonnes)
Odisha	2.41
Andhra Pradesh	3.72
Tamil Nadu	2.46
Kerala	1.90
West Bengal	1.22
Jharkhand	0.22
Total	11.93

Figure 3 Source: PIB

What is the status of Thorium in India?

1) Thorium is contained in, and produced from, the natural mineral monazite, occurring often as a sand deposit.

2) Department of Atomic Energy (DAE) has established **11.93 million tonnes of in situ resources Monazite** (Thorium bearing mineral) in the country, which contains **about 1.07 million tonnes of thorium.**

3) India has the **world's largest reserves of Thorium**, which is estimated at **1.07 million tonnes**, enough to last over a century.

2) If India uses this thorium, it can then produce enough green energy and easily turn **net-zero by its target date of 2070.**

Ministry notifies revised rules to ensure quality of medicines

Why in the News?

The Ministry of Health and Family Welfare has notified revised rules under **Schedule M of the Drugs and Cosmetics Rules, 1945**. This was done to ensure the production of high-quality drugs meeting international standards.

What are the updated rules notified by the Ministry?

Five new categories of drugs	Pharmaceutical products containing hazardous substances such as: 1. Sex hormones 2. Steroids (anabolic and androgenic) 3. Cytotoxic substances (used to destroy cancer cells) 4. Biological products 5. Radiopharmaceuticals (used in nuclear medicine for diagnostic and therapeutic purposes)
Additional sections under Schedule M	1. Introduction of a pharmaceutical quality system (PQS) 2. Quality risk management (QRM) 3. Product quality review (PQR) 4. Qualification and validation of equipment 5. Computerized storage system for all drug products
Other revised guidelines	1. The manufacturer is obligated to take responsibility for the quality of pharmaceutical products, ensuring their suitability for use. 2. They also need to comply with license requirements and prevent any risks to patients arising from inadequate safety, quality, or efficacy. 3. Companies are required to market a finished product only upon obtaining 'satisfactory results' from ingredient tests. 4. They must also retain sufficient samples of intermediate and final products for potential retesting or batch verification.
Implementation	The updated rules apply to companies based on their turnovers 1. Small and medium manufacturers (annual turnover < Rs. 250 crore) must comply within 12 months of publication. 2. Large manufacturers (annual turnover > Rs. 250 crore) have a six-month deadline.

What is Schedule M of the Drugs and Cosmetics Rules, 1945?

- 1) Schedule M of the Drugs and Cosmetics Rules, 1945, pertains to the **Good Manufacturing Practices (GMP)** for the manufacture of drugs.
- 2) The revised Schedule M has **13 parts**.
- 3) Schedule M originated from the recommendations of the **Hathi Committee** in 1975, which proposed making Good Manufacturing Practices (GMP) **mandatory** for all drug manufacturers.

Spiral Galaxy: MCG-01-24-014

Why in the News?

The Hubble Space Telescope has recently captured an image of the spiral galaxy MCG-01-24-014, unveiling the mysterious allure of the so-called 'forbidden' light.

What is MCG-01-24-014?

- 1) It is a **galaxy** located about 275 million light-years distant from Earth within the **Hydra constellation**.
- 2) It features a clearly defined structure and possesses a highly energetic core, categorized as an **active galactic nucleus (AGN)**.
- 3) It falls under the category of **Type-2 Seyfert galaxies**.
- 4) **Seyfert galaxies** are a class of galaxies known to have **active nuclei**, characterized by **extremely bright, compact centers**.
- 5) The distinction between Type-1 and Type-2 Seyfert galaxies lies in their **spectral lines**-the unique fingerprints of light that reveal the chemical composition and physical conditions within these celestial objects.
- 6) Type-2 Seyfert galaxies, such as MCG-01-24-014, are characterized by their '**forbidden**' emission lines.

What is a Spiral Galaxy?



Figure 4 Source- Wikipedia

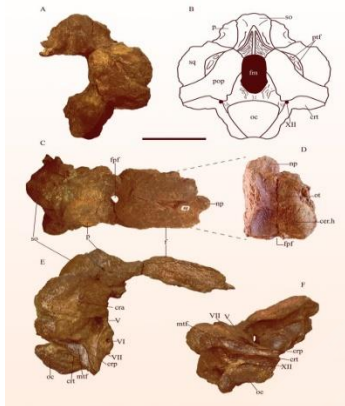
observed by scientists are spiral galaxies.

- 1) Spiral galaxies are **twisted collections of stars, dust and gas** that often have beautiful shapes and are **made up of hot young stars**.
- 2) Most of the galaxies that scientists have discovered so far are spiral galaxies, as opposed to the other two main categories of galaxy shapes -elliptical and irregular.
- 3) **Example of spiral galaxy** – The Milky Way – the galaxy that includes Earth and our solar system.
- 4) According to a survey conducted in 2010 with Hubble Space Telescope, **approximately 72 percent of the galaxies**

New Species of Sauropod Dinosaur Discovered in Argentina

Why in news?

Recently, a new species of dinosaur has been discovered in **Argentina**.



Sidersaura marae fossil Source: Sci News

What was discovered?

Specifications	Details
Species	Dinosaurs
Discovery Location	Patagonia, Argentina .
Scientific name	<i>Sidersaura Marae</i>
Period	Cenomanian age of the Late Cretaceous epoch , between 96 and 93 million years ago.
Distinctive Features	<ol style="list-style-type: none"> 1) The animal belongs to Rebbachisauridae, a large family of sauropod dinosaurs. 2) It is known from fragmentary fossil remains from South America, Africa, North America, Europe and Asia. 3) These dinosaurs have long neck, duck-beak, and had a very long tail. 4) They are up to 20 m in length and had an estimated mass of 15 tons. 5) These dinosaurs are identified by unique teeth, some with tooth batteries, like hadrosaurs and ceratopsians. 6) <i>Sidersaura marae</i> is distinguished by its star-shaped hemal arches, a unique characteristic.

Who are sauropod dinosaurs?

- 1) Sauropod dinosaurs were large, long-necked, herbivorous dinosaurs that lived from the **Late Triassic to the Late Cretaceous periods**.
- 2) They are the **largest animals to have ever lived on land**.
- 2) The sauropods' most distinctive feature was their **enormous body size** and their **signature long sauropod necks**.

3) Sauropod dinosaurs are also known for **having spines on their necks and backs.**

Thylakoids

Why in news?

Researchers at the **University of Liège, Belgium** have identified microstructures in fossil cells that are **1.75 billion years old.**

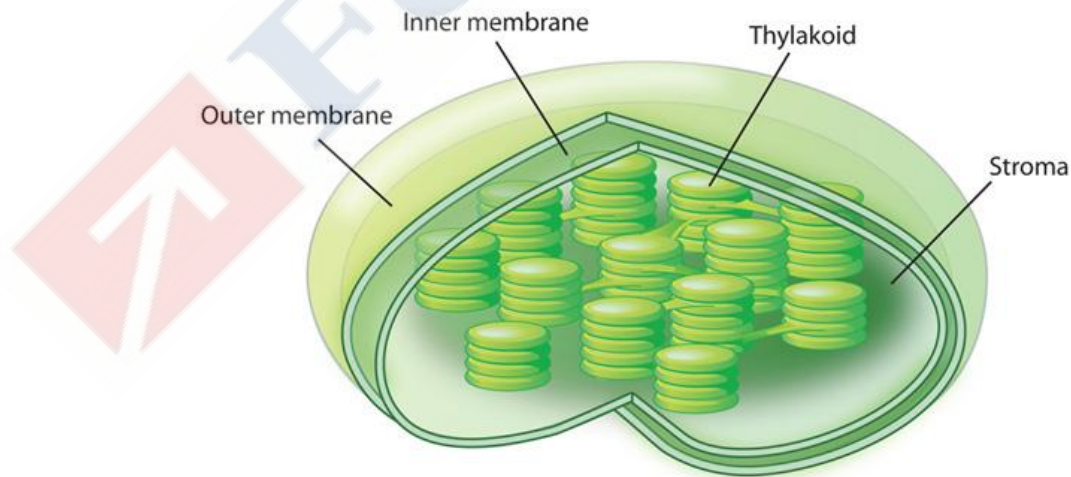
What are the recent findings related to Thylakoids?

- 1) The oldest known fossil thylakoids date back approximately 550 million years.
- 2) However, researchers have identified thylakoid membranes in fossil cells that are 1.75 billion years old.
- 3) These findings suggest a minimum age for the divergence between cyanobacteria with and without thylakoids.
- 3) It presents a possibility that that the development of thylakoids might have significantly contributed to the phenomenon known as the **'Great Oxygenation'**.

What is 'Great Oxygenation' event?

- 1) Around **2.4 billion years ago on earth the oxygen released by cyanobacteria** filled the ocean and made its waters oxygen rich.
- 2) Over time, this **oxygen started escaping into the atmosphere**, where it **reacted with methane.**
- 3) As more oxygen escaped, **methane was eventually displaced**, and oxygen became a major component of the atmosphere.
- 4) This event is known as the **Great Oxidation Event.**

What are thylakoid?



Source: Animalia

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1) Thylakoids are little pouches located in the **chloroplasts of plants**.

2) They are found in **ancient, light-sensitive bacteria** called **cyanobacteria**.

Note: Cyanobacteria are **photosynthetic bacteria** that obtain energy through photosynthesis. They are often referred to as **blue-green algae**, although they are not classified as true algae.

3) They **store chlorophyll**, the substance in plants that reacts to sunlight and triggers photosynthesis.

4) The **thylakoid's function** is to **perform light-dependent reactions in photosynthesis**.

Drishti 10 Starliner UAV (Unmanned Aerial Vehicle): First Indigenous medium-altitude long-endurance drone of

Why in news?

The Indian Navy got its first indigenous medium-altitude long-endurance (MALE) drone, the Drishti 10 Starliner unmanned aerial vehicle (UAV).

What is the Drishti 10 Starliner UAV (Unmanned Aerial Vehicle)?

Specifications	Details
What is it?	It is an advanced intelligence, surveillance, and reconnaissance (ISR) platform .
Developed by	Adani Defence and Aerospace with technology transfer from Israeli defence firm Elbit Systems .
Features	<ol style="list-style-type: none">1) It is India's first indigenous medium-altitude long-endurance (MALE) drone. 70% of the drone is made using indigenous components.2) It is a variant of Elbit Systems' Hermes 900 Starliner drones.3) The UAV will be officially inducted into naval maritime operations at Porbandar.4) The Drishti 10 Starliner boasts an impressive 36 hours of endurance and a substantial 450 kg payload capacity.5) It stands out as the only all-weather military platform certified with NATO's STANAG 4671 (standardized agreement 4671) for airworthiness.
Strategic importance	<ol style="list-style-type: none">1) Drishti 10 Starliner is equipped with state-of-the-art sensors, enhanced endurance, advanced communication capabilities, and cutting-edge technologies.2) The UAV would play a pivotal role in shaping future naval operations and safeguarding India's national maritime interests in the Indian Ocean region.

Cold Dark Matter of the Universe

Why in news?

Scientists have found a new approach to exploring cold dark matter (CDM), a hypothetical dark matter that constitutes 25 per cent of the current Universe.

What is Dark matter?

- 1) The universe is made up of at least two kinds of matter: **Baryonic matter and Dark matter.**
- 2) Baryonic matter made of protons and neutrons, which can be measured.
- 3) Baryonic matter includes stars and galaxies and all the objects they contain.
- 4) **Dark matter (CDM)** is a **form of matter** that can't be detected through normal observational means but its gravitational effect on baryonic matter can be measured.
- 5) Dark matter doesn't reflect or emit light.

What is Cold Dark Matter?

- 1) Dark matter can actually be slotted into three general groups: **hot dark matter (HDM), warm dark matter (WDM), and cold dark matter (CDM).**
- 2) Of the three, CDM has long been the leading candidate for **what this missing mass in the universe is.**
- 3) CDM is a kind of dark matter that, if it exists, **moves slowly compared to the speed of light.**
- 4) CDM is believed to have been existed since the universe began **influencing the growth of galaxies and the formation of the first stars.**
- 5) Scientists think it's likely an exotic particle that hasn't been detected yet.
- 6) The widely used **Weakly Interacting Massive Particles (WIMP) model** proposes that cold dark matter comprises heavy particles with very weak interactions with normal matter.

DRDO successfully tests Next-Gen Akash Missile

Why in news?

DRDO has successfully tested the **next-gen Akash missile.**

What is the next-gen Akash missile?

Aspect	Details
Missile	New Generation Akash (Akash-NG) missile
Developed by	Defence Research and Development Organisation (DRDO)

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About test	<p>It was tested at Integrated test range (ITR), Chandipur, off the Odisha coast.</p> <p>The flight test was conducted against a high-speed, unmanned aerial target at a very low altitude.</p>
Features	<p>The Akash surface-to-air missile (SAM) is one of the early successes of the DRDO's Integrated Guided Missile Development Programme (IGMDP).</p> <p>It has been developed with indigenisation levels above 96 per cent.</p> <p>The Akash-NG is a major improvement over the older Akash.</p> <p>The lighter Akash-NG flies up to an altitude of 25 km and has a range of 30 km.</p> <p>The Akash NG is a state-of-the-art missile system capable of intercepting high speed, agile aerial threats.</p> <p>The surveillance radar detects enemy fighters at ranges upto 80 km and initiates the launch sequence.</p> <p>The Akash-NG detects, tracks and shoots down enemy aircraft in seconds.</p> <p>The Indian Air Force (IAF) has bought five units of the Akash for defending its airfields in the Northeast from enemy fighter aircraft.</p>
How is it different from Akash	<p>It surpasses Akash by achieving a higher altitude ceiling of over 20 km, a notable improvement from Akash's limit, along with an extended range beyond 25 km.</p> <p>It has two-pulse, solid rocket motor that replaces the old ramjet on the legacy Akash missile.</p> <p>Its weight has been halved to 350 kilogram (kg) from the Akash's 700 kg.</p>

Subject: Environment

Majority of cities far from clean air target, says study

Why in the News?

According to an analysis conducted by Respirer Living Sciences and Climate Trends, a significant number of Indian cities are considerably distant from achieving clean air target.

What are the conclusions drawn from the analysis?



Source- The Hindu

Parameter	Observations
PM 2.5	<ol style="list-style-type: none"> Out of 49 cities, only four achieved or surpassed the targeted decline in PM 2.5 (the most hazardous pollutant) with 27 cities experiencing a decrease. Delhi, for example, has only seen a 5.9% decline in average annual PM 2.5 levels, while Navi Mumbai has witnessed a 46% rise. Varanasi showed a significant improvement with a 72% reduction in PM 2.5 levels and a 69% reduction in PM 10 levels from 2019-2023.
NCAP Targets	<ol style="list-style-type: none"> The National Clean Air Programme (NCAP) seeks a 40% reduction in average particulate matter by 2026 (compared to 2017) in 131 cities. Despite the three-year deadline, major Indian cities are experiencing either slight reductions or increases in pollution levels.
Ambient air quality monitoring system	<ol style="list-style-type: none"> The majority of Indian cities have only a few monitors. Among the 92 cities analyzed, only four have over 10 stations.

IISc study revealed how logging and climate change impact montane birds

Why in news?

Recently, researchers at the Indian Institute of Science (IISc.) in Bengaluru have found that logging and climate change pose a threat to montane birds.

What was done in research?

- 1) The team collected data from the **Eaglenest Wildlife Sanctuary, Arunachal Pradesh** which is home to over 500 bird species.
- 2) Researchers studied the **effects of forest logging and climate change on bird communities** in tropical mountains by examining over 10 years of data.
- 2) **Mist netting and bird ringing data** were used to understand how the composition of the mid-elevation Eastern Himalayan understory bird community changed in primary (undisturbed) forests as well as in logged forests.

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Note- Understorey bird community is the community of birds that remain beneath the main canopy of a forest

What are the findings of the research?

- 1) **Forest loss and climate change are major threats** to the ecosystem of Tropical montane forests on mountains.
- 2) Many bird species have started **shifting to higher elevations due to rising temperatures**.
- 3) Logging can lead to the **loss of large-bodied, old, growth-dependent species, and decrease the overall biodiversity**.
- 4) Logging has a **detrimental impact on understorey insectivores**, which are typically confined to specific niches, leading to a significant decline in their numbers.
- 5) Logged forests also **experience decreased densities of foliage-dwelling insects**, diminishing the available resources for birds.
- 6) The study highlights the need to **safeguard primary forests** in order to **mitigate the effects of climate change**.

What is Eagle Nest Wildlife Sanctuary?

Specifications	Details
Location	Arunachal Pradesh
Geographical Features	It is situated in the biodiversity hotspot of Eastern Himalayas .
National Park	It conjoins Sessa Orchid Sanctuary to the northeast and Pakhui Tiger Reserve across the Kameng river to the east .
Significance	Eagle Nest's Wildlife Sanctuary is considered amongst the topmost birding destinations in the World .
Flora	Dense strands of bamboo & patches of broadleaved evergreen forest covers the large altitudinal range.
Fauna	1) It is also home for many species of amphibians, snakes & lizards, mammal species like Bengal Tiger, Clouded leopard, Red Panda, Arunachal Macaque, Gaur & endangered capped Langur. 2) More than 160 species of butterflies have been recorded. 3) The rare Bugun Liocichla bird (IUCN status: Critically Endangered) is found only in the Eaglenest Wildlife Sanctuary.
Tribes	This Sanctuary is inhabited by two tribes, Bugun and Sherdukpen .

Darjeeling zoo has world's largest number of snow leopards

Why in the News?

After 40 years of a conservation breeding program, the Darjeeling zoo now holds the world's largest captive snow leopard population. This takes the total number of snow leopards to 14 which is evenly split between 7 males and 7 females.

What is the snow leopard conservation breeding program at Darjeeling Zoo?

- 1) It is the **first and only conservation program in the country for snow leopards.**
- 2) It was **initiated at Darjeeling Zoo in 1985.**
- 3) A major highlight of the conservation breeding program is the **utilization of a broad genetic pool** for snow leopard breeding.

What are the features of Padmaja Naidu Himalayan Zoological Park (Darjeeling Zoo)?

Aspect	Details
Location	It is situated in Darjeeling, in the Indian state of West Bengal.
Features	<ul style="list-style-type: none">1. It is the largest high altitude zoo in India.2. It specializes in breeding animals adapted to alpine conditions.3. It has successful captive breeding programs for the snow leopard, the endangered Himalayan wolf and the red panda.4. The zoo serves as the central hub for Central Zoo Authority of India's red panda program.5. It is a member of the World Association of Zoos and Aquariums (WAZA).

About Snow Leopards



Source- WWF

Subject: Schemes & Programmes

PRASADAM: India's First Healthy & Hygienic Food Street

Why in the news?

Recently, the Union Minister for Health & Family Welfare, inaugurated India's first Healthy & Hygienic Food Street, 'PRASADAM,' at Neelkanth Van, Mahakal Lok, in Ujjain, **Madhya Pradesh**.

What are the objectives of the initiative?



Figure 5. Source- The Indian Express

1) Prasadam aims to connect people in every corner of the country with pure and safe local and traditional food.

2) It is in line with the **vision of 'Viksit Bharat'**.

3) The food street is designed to provide various facilities including a kids' play area, drinking water facility, CCTV surveillance, parking, public conveniences and seating spaces.

4) The 'Prasadam' initiative strives to

enhance Ujjain's tourism allure and safeguard its culinary heritage while also playing a role in fostering economic development.

5) The initiative is provided with financial support which is extended to states and Union Territories (UTs) with a **funding distribution ratio of either 60:40 or 90:10, under the National Health Mission**.

6) Standard branding of these food streets will be done as per FSSAI guidelines.

Note- The food street at Neelkanth Van, Mahakal Lok in Ujjain, will be the first of 100 food streets that will come up in as many districts across the country.

What is 'Viksit Bharat' Vision?

1) **Viksit Bharat@2047** is the vision to make India a **developed nation by 2047**, the 100th year of its independence.

2) The vision **encompasses various aspects of development**, including economic growth, social progress, environmental sustainability, and good governance, among others.

Subject: Reports & Indices

SC Report Reveals Accessibility Gaps for People with Disabilities in Indian Courts

Why in the News?

Recently, the Supreme Court's Centre for Research and Planning report highlights infrastructure deficiencies in Indian district courts. It raised concerns about obstacles faced by individuals with disabilities in seeking justice.

What are the findings of the report?

- 1) It highlighted that **only 30.4% of court complexes have separate disabled-friendly toilets.**
- 2) It reported that over **half of the district court complexes nationwide lack ramps**, while only 25.2% are equipped with wheelchairs.
- 3) It also highlighted that **only 5.1% of district courts incorporate tactile paving to aid individuals** with visual disabilities in navigating the court premises.
- 4) The report disclosed an **infrastructure gap** of 4,250 courtrooms across India. Only 20,831 courtrooms have been operational out of a sanctioned strength of 25,081 judges in the district judiciary.

Note- The report indicated that **73.5% of court premises are owned by the judiciary**, 13.3% by the state government, 2.6% (626 courtrooms) are rented, and 10.6% are under construction.

What is the Centre for Research and Planning of the Supreme Court?

It is the Supreme Court's **in-house think tank**,

Aim: Strengthening the knowledge infrastructure of the Supreme Court.

Mandate- To conduct cutting-edge research on fundamental jurisprudence, principles, doctrines of law, and judicial reforms, aiming to enhance justice delivery and uphold Judicial Independence.

Subject: Art & Culture

How are the tableaux are selected for Republic Day?

Why in news?

Recently, the Defence Ministry proposed a new three-year rotation plan for the Republic Day parade tableau selection.

Theme of Republic Day 2024 parade: 'Viksit Bharat' (Developed India) and 'Bharat-Loktantra ki Matraka' (India-Mother of Democracy).

How are the tableaux selected?

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- 1) The selection process of tableaux for the Republic Day parade is carried out by **the Ministry of Defence**.
- 2) **Expert committee (appointed by MoD) of prominent people** from art, culture, painting, sculpture, music, architecture, choreography do the shortlisting of the tableaux.
- 2) They hold **six to seven rounds of meetings** to examine the proposals before shortlisting and making the ultimate decision.
- 3) Firstly, the submitted sketches or designs of the proposals are **scrutinised by this committee**. Committee can make suggestions for any modifications in the sketch or design.
- 4) In the next stage, three-dimensional models of their proposals are again examined by the expert committee for final selection.
- 5) The final selection is dependent upon a **combination of factors** such as visual appeal, impact on the masses, idea or theme of the tableaux, degree of detail, accompanying music, and use of local resources.

What are the guidelines for tableau models and performers?

- 1) **Writing or use of logos on tableaux is not allowed** except the name of states or Union Territories that are presenting it.
- 2) The **names of the states should be written in Hindi in the front, in English on the back** and in **regional language on the sides of the tableau**.
- 3) The number of performers on the trailer will **not be more than 10 persons** and artists performing on or along the tableau should be from the concerned state/UT only.

Subject: Miscellaneous

National Landslide Susceptibility Map

Why in the News?

In the wake of severe monsoon triggered heavy floods and landslides, IIT Delhi team has developed India's first national landslide susceptibility map.

What are the features of the National Landslide Susceptibility Map?

- 1) The map has been devised using **1.5 lakh known landslides event** from sources like Geological Survey of India (GSI) along with **16 landslide conditioning factors** such as soil cover, the number of trees covering the area, and how far it is from any roads or mountains, etc.
- 2) The team used **ensemble machine learning** methods to analyse the data.
Note- Ensemble machine learning is when multiple machine learning models are used together to average out an oversize impact from any one model.
- 3) **High resolution mapping-** The map offers a detailed (100 sqm. resolution) overview of landslide susceptibility across India, including previously unrecognized areas.
- 4) **Revealing new risk zones-** It identified high landslide susceptibility in familiar areas like the Himalayan foothills, Assam-Meghalaya region, and Western Ghats. Additionally, it uncovered new high-risk zones, including parts of the Eastern Ghats north of Andhra Pradesh and Odisha.

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5) **Map available online-** The map is accessible to the public, and anyone can engage with the data without requiring technical expertise.

What is the National Landslide Susceptibility Mapping (NLSM) Programme ?

1) The Geological Survey of India initiated the Macro Scale (1:50,000) National Landslide Susceptibility Mapping (NLSM) program in **2014**.

2) The goal is to **map the 0.42 million sq. km landslide-prone areas** across the country.

3) Aim and objectives:

- To create a dynamic National Landslide Susceptibility Geodatabase for India.
- To prepare GIS – based seamless Landslide Susceptibility Maps of India on 1:50,000 scale.
- To prepare a nationwide repository on GIS-based Landslide Inventory.


Swachh Survekshan Awards 2023

Why in the News?

The President of India has announced the results of the Swachh Survekshan Awards 2023.

What are the Swachh Survekshan Awards?

Specifications	Details
What is it?	1. Swachh Survekshan is an annual survey of cleanliness, hygiene and sanitation in cities and towns across India. 2. It was launched in 2016 as part of the Swachh Bharat Abhiyan , which aimed to make India clean and free of open defecation by 2nd October 2019.
Conducted by	Ministry of Housing and Urban Affairs (MoHUA) with Quality Council of India (QCI) as its implementation partner.
Parameters	The cities have been ranked based on three broad parameters – service level progress, citizen’s voice and certification.
Theme	2023- Waste to wealth 2024- Reduce, reuse and recycle

2023 Awards	 <p>The image shows a graphic titled 'SWACHH SURVEKSHAN AWARDS 2023' with a list of award categories and winners. The categories and winners are: All India Clean City Rank 1: Indore & Surat; All India Clean City Rank 3: Navi Mumbai; All India Clean City Rank 1 (Population < 1 Lakh): Sasvad; All India Clean City Rank 2 (Population < 1 Lakh): Patan; All India Clean City Rank 3 (Population < 1 Lakh): Lonavala; Cleanest Cantonment Board: Mhow Cantonment Board; Best SafaiMitra Surakshit Sheher: Chandigarh; Cleanest Ganga Town Rank 1: Varanasi; Cleanest Ganga Town Rank 2: Prayagraj.</p> <table border="1"><tr><td>All India Clean City Rank 1</td><td>Indore & Surat</td></tr><tr><td>All India Clean City Rank 3</td><td>Navi Mumbai</td></tr><tr><td>All India Clean City Rank 1 (Population < 1 Lakh)</td><td>Sasvad</td></tr><tr><td>All India Clean City Rank 2 (Population < 1 Lakh)</td><td>Patan</td></tr><tr><td>All India Clean City Rank 3 (Population < 1 Lakh)</td><td>Lonavala</td></tr><tr><td>Cleanest Cantonment Board</td><td>Mhow Cantonment Board</td></tr><tr><td>Best SafaiMitra Surakshit Sheher</td><td>Chandigarh</td></tr><tr><td>Cleanest Ganga Town Rank 1</td><td>Varanasi</td></tr><tr><td>Cleanest Ganga Town Rank 2</td><td>Prayagraj</td></tr></table>	All India Clean City Rank 1	Indore & Surat	All India Clean City Rank 3	Navi Mumbai	All India Clean City Rank 1 (Population < 1 Lakh)	Sasvad	All India Clean City Rank 2 (Population < 1 Lakh)	Patan	All India Clean City Rank 3 (Population < 1 Lakh)	Lonavala	Cleanest Cantonment Board	Mhow Cantonment Board	Best SafaiMitra Surakshit Sheher	Chandigarh	Cleanest Ganga Town Rank 1	Varanasi	Cleanest Ganga Town Rank 2	Prayagraj
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	<p>Source- PIB</p> <ol style="list-style-type: none">1. In the State rankings, Maharashtra came first, followed by Madhya Pradesh and Chhattisgarh.2. Indore has been adjudged the cleanest city for the seventh time in a row.																		

Note- The Swachh Survekshan, initially assessing 73 major cities in 2016, has expanded its scope to include 4,477 cities.