Factly Weekly

Compilation

2025

For UPSC CSE Prelims Exam

2nd Week

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INDEX

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TROPEX-25 Exercise

News: TROPEX-25 Exercise is currently being conducted in the Indian Ocean Region (IOR) from January to March 2025.

About TROPEX-25

- The **Theatre Level Operational Exercise (TROPEX)** is the Indian Navy's flagship biennial operational exercise.
- This large-scale exercise involves the active participation of the **Indian Navy, Army, Air Force, and Coast Guard**, ensuring a coordinated and integrated approach to maritime security.
- **Goal:** To **validate the core warfighting skills** of the Indian Navy while ensuring an integrated and synchronized approach to maritime security.
- **Aim:** The exercise aims to strengthen India's ability to respond to a **contested maritime environment** by preparing for:
    - **Conventional threats** posed by enemy naval forces.
    - **Asymmetric threats** such as piracy, terrorism, and unconventional warfare.
    - **Hybrid threats** that combine traditional and non-traditional security challenges.
- Additionally, the exercise seeks to enhance joint operations and interoperability among the Indian Navy, Army, Air Force, and Coast Guard, ensuring a seamless and effective response to potential threats.
- TROPEX-25 is structured into multiple phases, each designed to simulate different aspects of warfare and military operations:

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- **Harbour Phase:** This phase focuses on strategic planning, training, and coordination among participating units before commencing operations at sea.
- **Sea Phase:** In this stage, naval forces engage in real-time operations, testing their combat readiness in a contested maritime environment.
- **Cyber and Electronic Warfare Operations:** TROPEX-25 incorporates modern warfare elements, including cyber defense and electronic warfare measures to enhance resilience against digital threats.
- **Live Weapon Firings:** During this phase, naval units conduct live-fire exercises to test the accuracy and efficiency of their weapon systems.
- **Amphibious Exercise:** This phase involves coordinated land-sea operations, where naval forces work alongside Army troops to conduct **amphibious landings and coastal defence exercises**.

Strategic Importance

- TROPEX-25 plays a crucial role in **enhancing India's maritime dominance and regional security** in the Indian Ocean.
- The exercise prepares the Indian Armed Forces for **joint operations in real-world combat scenarios**, ensuring their ability to respond effectively to security challenges.
- It also reinforces India's ability to **project power, safeguard maritime trade routes, and counter emerging threats** in the region.
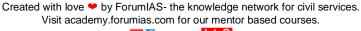
Dunki route and its danger

News: The issue of illegal migration through 'dunki routes' has gained significant attention due to the recent deportation of 104 Indians from the US.

About Dunki route

- The term **'dunki route'** refers to the unofficial and often dangerous pathways used by migrants to reach their destination countries, particularly the United States, without proper documentation.
- This network was facilitated by human traffickers has been used by many Indians, especially from Punjab, Haryana, and Gujarat, who attempt to enter the US illegally through Latin America.

The Dangers of the 'Dunki Route'

1. **Crossing the Darién Gap (Colombia-Panama):** This involves treacherous jungle where migrants face threats from wild animals, extreme weather, and armed criminal gangs. Incidents of robbery, assault, and sexual violence are common, with little law enforcement intervention. Migrants often spend 8-10 days navigating the dense forests.
2. **Exploitation by Human Traffickers:** Agents charge between ₹30-40 lakh to ₹1 crore per person, often demanding full payment before migrants reach their destination.Traffickers frequently deceive migrants, promising safer routes or transportation that never materializes.
3. **Navigating Multiple Countries:** The journey continues through Costa Rica, Nicaragua, Honduras, Guatemala, and Mexico, where migrants must evade law enforcement. Guatemala serves as a key handover point, where new traffickers take over to facilitate the next phase of the journey.
4. **Crossing into the US:** The final stretch involves jumping border fences or crossing the Rio Grande river, a perilous undertaking. Once inside the US, migrants are typically detained in camps, where they await asylum proceedings or deportation.

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Repo Rate Cut

News: The Reserve Bank of India (RBI) has reduced the repo rate by 25 basis points (bps) to 6.25% on February 7, 2025. This is the first repo rate cut in nearly five years and follows a two-year period of maintaining the rate at 6.50%.

Rationale Behind the Repo Rate Cut

- **Stimulating Economic Growth**: The primary objective is to **encourage borrowing, investment, and spending** to drive economic growth.
- **Inflation Within Target**: With inflation under control, the RBI has room to lower rates without the risk of excessive price increases.
- **Aligning with Global Trends**: Many central banks worldwide have adopted **accommodative monetary policies**, making India's move aligned with global trends.
- **Reducing Lending Costs**: Lower repo rates reduce banks' cost of funds, allowing them to offer **cheaper loans** to businesses and individuals.
- **Boosting Employment**: Increased credit availability can help businesses expand, leading to **job creation and higher employment levels**.

Impact on Interest Rates and Borrowing Costs

- **Reduction in Loan EMIs**: Interest rates on **home, vehicle, and personal loans** will decline, lowering monthly EMIs for borrowers.
- **Lower External Benchmark Lending Rates (EBLRs)**: Banks will reduce interest rates on loans linked to the repo rate, making credit more **affordable**.
- **Marginal Cost of Fund-Based Lending Rate (MCLR) Impact**: While banks have not fully passed on past rate hikes, the latest cut may result in **cheaper loans**.
- **Higher Liquidity in the Market**: With lower lending rates, borrowing will increase, boosting **liquidity and consumption** in the economy.

Impact on Investment and Consumption

- **Cheaper Business Loans**: Reduced borrowing costs will encourage businesses to invest in **expansion, technology, and infrastructure**.
- **Boost in Consumer Spending**: Lower interest rates make **consumer credit more accessible**, increasing purchases of homes, cars, and durable goods.
- **Real Estate and Auto Sector Growth**: With **lower mortgage and auto loan rates**, demand in these sectors is expected to rise.
- **Stock Market Sentiment**: Lower rates can improve investor sentiment, potentially leading to **higher stock market activity**.

Concerns and Potential Risks

- **Possibility of Higher Inflation**: Increased money supply and consumer spending could drive up **prices**, posing an inflation risk.
- **Lower Savings Interest Rates**: Deposit rates may decrease, making **savings accounts and fixed deposits (FDs) less attractive** for investors.
- **Rupee Depreciation**: A lower rate environment could lead to **capital outflows**, weakening the Indian rupee further.

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Marsupials

News: Recently, a team of Australian scientists has successfully created 28 kangaroo embryos using in vitro fertilization (IVF), marking a significant breakthrough in the conservation of marsupials.

About Marsupials

Source: activewild

- Marsupials are a distinct group of **mammals** that give birth to **premature young.**
- Unlike placental mammals, their offspring complete most of their development **outside the womb**.

Features of the Marsupials

- They have a **short-lived placenta**, which nourishes the embryo for only a few days before birth.
- The underdeveloped newborn, often referred to as a **joey**, crawls into the mother's **pouch (marsupium)** for further development.
- The joey remains attached to the **mother's teat**, which provides continuous **milk** for nourishment.
- Some marsupials, like **kangaroos**, can produce **different types of milk** simultaneously to feed joeys at different developmental stages.
- **Ecological Importance:**
  - Marsupials play a vital role in **ecosystems** by controlling insect populations, dispersing seeds, and maintaining balanced food chains.
  - Some, like the **bilby**, help improve soil health through burrowing activities.
- There are more than **330 species of marsupials**, with approximately two-thirds found in Australia and the remaining third primarily in South America.
- Some examples of marsupials are kangaroos, wallabies, possums, bandicoots, quolls, wombats, tree kangaroos, Antechinus, dunnarts, bettongs, koalas, quokkas, sugar gliders, the Tasmanian devil, and the Virginia opossum.
- Many marsupial species face threats such as **habitat loss, climate change, and predation by invasive species** (e.g., foxes and cats in Australia).

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Article 200

News: The Supreme Court is currently hearing a case involving the Tamil Nadu government and Governor RN Ravi over delays in granting assent to Bills. The ruling in this case will set a precedent for other states facing similar issues.

About Article 200

Article 200 of the Indian Constitution deals with the **Assent to Bills by the Governor**. It outlines the options available to the Governor of a state when a Bill passed by the State Legislature is presented for approval.

When a Bill is passed by the State Legislature and sent to the Governor, the Governor has the following options:

1. **Assent to the Bill** – The Governor may give approval, making the Bill a law.
2. **Withhold Assent** – The Governor may refuse to sign the Bill.
3. **Return the Bill** – The Governor may return the Bill (if it is not a Money Bill) to the State Legislature with a request for reconsideration.
4. **Reserve the Bill for the Consideration of the President** – If the Governor believes that the Bill is against the provisions of the Constitution, is in conflict with a Central law, or affects national interests, s/he may refer it to the President. If the Bill is **reserved for the President's consideration**, the **President has the final authority** to approve or reject it.

Significance of Article 200:

- It ensures a system of **checks and balances** between the State Legislature and the Governor.
- It allows the **Governor and the President** to safeguard Constitutional principles.
- The provision to **return or reserve a Bill** helps prevent hasty or unconstitutional legislation.

Supreme Court Rules: Private Property Acquisition Invalid Without Due Procedure

News: In a significant ruling, the **Supreme Court of India has reaffirmed the constitutional protection of private property** under **Article 300A**, emphasizing that any acquisition of private property must strictly adhere to procedural safeguards.

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Supreme Court Rules: Private Property Acquisition Invalid Without Due Procedure

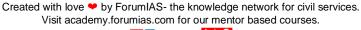**Key Highlights of the Judgment**

1. **Due Process is Integral to Property Rights**
   The Supreme Court held that the requirement of a "law" under Article 300A is not satisfied merely by the existence of a legislation that grants the State the power to acquire property. Rather, the nature, provisions, and **procedures laid down in such legislation must be followed meticulously**. Failure to do so renders the acquisition **illegal and outside the authority of law**.

2. **Seven Procedural Rights Under Article 300A**
   The judgment outlined **seven fundamental procedural rights** that must be adhered to before any property acquisition is deemed valid:
   o **Right to Notice**: The State must inform the property owner about its intent to acquire the land.
   o **Right to be Heard**: The owner must be given an opportunity to raise objections.
   o **Right to a Reasoned Decision**: The State must provide a detailed explanation for the acquisition.
   o **Acquisition Only for Public Purpose**: The government must demonstrate that the acquisition serves a public purpose.
   o **Right to Fair Compensation**: The owner is entitled to just and adequate compensation.
   o **Right to Efficient Conduct**: The process must be completed within the prescribed timeline.
   o **Right to Conclusion**: The acquisition process must lead to a legally valid conclusion.

3. **Non-compliance with any of these steps** constitutes a **violation of the right to property** and renders the acquisition invalid.

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4. **Emphasis on Transparency and Natural Justice**
The ruling stressed that procedural safeguards are essential **to ensure fairness, transparency, and non-arbitrary exercise of power** in property acquisition. The State must comply with the statutory procedures to protect landowners from undue deprivation of property.

Algorithmic Trading

News: The Securities and Exchange Board of India (SEBI) has introduced a new regulatory framework to enhance the safety of retail investors participating in algorithmic (algo) trading through brokers.

About Algorithmic Trading

- Algorithmic trading, also known as **algo trading**, refers to the **use of computer programs and automation** to execute financial market transactions based on pre-defined criteria such as price, volume, and timing.
- It eliminates manual intervention and allows for high-speed, data-driven trading.
- Algorithmic trading relies on **pre-programmed rules** and **mathematical models** to automatically place, modify, or cancel trade orders. The key steps in algo trading include:
  - **Market Data Analysis** – Algorithms analyze **historical and real-time market data** to identify trading opportunities.
  - **Pre-Defined Strategy Execution** – Based on parameters like **price movements, indicators, and volume trends**, the algorithm executes trades.
  - **Automated Order Placement** – The system automatically places **buy/sell orders** without human intervention.
  - **Risk Management & Adjustments** – Algorithms incorporate **stop-losses, hedging strategies, and profit targets** to minimize risk.
- Common **strategies used in algo trading** include:
  - **Trend-following strategies** (moving averages, momentum trading)
  - **Arbitrage opportunities** (exploiting price differences between exchanges)
  - **Mean reversion strategies** (betting on asset prices returning to average levels)
  - **Market-making strategies** (buying and selling continuously to capture bid-ask spreads)

Aero India 2025

News: Aero India 2025 is Asia's largest airshow, scheduled to take place from **February 10 to 14, 2025**, in Bengaluru, India.

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Aero India 2025

About Aero India 2025

- This will be the **15th edition** of the biennial event, showcasing advancements in aviation, aerospace, and defence technology.
- The event provides a platform for **global defence manufacturers, government representatives, and industry experts** to collaborate and explore business opportunities.
- The **United States** will display several advanced military aircraft, including: **F-35 Lightning II**, **KC-135 Stratotanker, B-1 Lancer, F-16 Fighting Falcon and o**ver **two dozen American exhibitors** will showcase technology in unmanned aerial systems (UAS), avionics, and defence electronics.
- **Garuda Aerospace** will unveil **eight drones** for defence and military applications.
- The **U.S. Air Force Band of the Pacific's ensemble, Final Approach**, will perform at **Aero India 2025 (Feb 13-14)** and at **Christ University (Feb 11, 5:00 PM)**.

Strategic Importance:

- The event serves as a platform for:
    - Strengthening **India's defence partnerships** with major global players.
    - Showcasing India's **"Make in India"** defence initiatives.
    - Enhancing **interoperability** between Indian and U.S. forces in the **Indo-Pacific region**.
- It reflects **growing bilateral defence trade** between India and the U.S., complemented by:
    - Increased **information sharing**.
    - Deployment of **liaison officers**.
    - Joint **military training exercises**.
    - Defence **enabling agreements**.

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Union Budget Allocation for Urban Development

News: The total **outlay for urban development** in FY 2025 stands at **₹96,777 crore**, an increase from last year's **₹82,576.57 crore**.

Union Budget Allocation for Urban Development

About the Budgetary allocation

- The budget primarily focuses on **large-scale infrastructure projects**, particularly metro rail expansions, while **employment generation and sustainable development** receive less attention.
- Key **urban infrastructure programs** have **not received adequate funding**, indicating a misalignment between **policy goals and actual budgetary support**.

Decline in Urban Local Bodies (ULBs) Funding

- **Urban development funds** are distributed through three key channels:
    1. **Direct transfers to Urban Local Bodies (ULBs)**
    2. **Centrally Sponsored Schemes (CSS)**
    3. **Central Sector Schemes**
- **Direct transfers to ULBs** have **declined** from **₹26,653 crore last year to ₹26,158 crore** this year.
- The **abolition of octroi** and the implementation of **GST** led to a **21% drop in ULB revenue**, yet **compensation through central devolution has not increased**.
- This funding shortfall will **force cities to generate their own revenue**, potentially **increasing local taxes** and burdening citizens.

Budget Reductions for Key Urban Schemes

- **Centrally Sponsored Schemes (CSS)** include key urban programs such as:
    ○ **PMAY (Urban)** – Budget reduced by **30%**.

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- o **AMRUT & Smart Cities Mission** – Funding reduced; Smart Cities Mission has **almost no funds left**.
- o **Swachh Bharat Mission (Urban)** – Allocation remains at **₹5,000 crore**, but **only ₹2,159 crore (56%)** was spent as per RE.

Increased Allocation for Metro and Mass Transit Systems

- **Metro rail and rapid transit projects** have seen **significant budget increases**, unlike other urban programs.
- **FY 2024-25 Budget** for metro projects: **₹21,335.98 crore**
- **Revised Estimate (RE): ₹24,691.47 crore**
- **FY 2025-26 Budget proposal: ₹31,239.28 crore** (a **46% increase** from the previous year).
- This **prioritization of metro rail projects** over **holistic urban mobility** raises concerns about **inclusive urban development**.

New Urban Challenge Fund

- The **Urban Challenge Fund** of **₹10,000 crore** has been introduced to boost **urban redevelopment programs**.
- The government aims to **mobilize ₹1 lakh crore** for urban development, with **half of this funding expected from private investments**.
- Given the **limited private sector participation** in initiatives like the **Smart Cities Mission**, this **target may be overly ambitious**.

Civil Liability for Nuclear Damage Act (CLNDA)

News: The Indian government's plan to amend the Civil Liability for Nuclear Damage Act (CLNDA) and the Atomic Energy Act has gained attention as Prime Minister Narendra Modi prepares to visit France and the U.S. from February 10-13, 2025.

About Civil Liability for Nuclear Damage Act (CLNDA), 2010

- The **Civil Liability for Nuclear Damage Act, 2010 (CLNDA)** establishes a legal framework for compensation in the event of a nuclear accident.
- The Act aligns with international conventions and ensures that victims of nuclear incidents receive adequate compensation while also balancing the responsibilities of nuclear plant operators and suppliers.
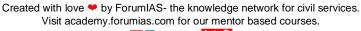
Key Provisions of the CLNDA

The Civil Liability for Nuclear Damage Act contains the following important provisions:

1. Operator Liability and Compensation

- The **operator of a nuclear plant is held strictly liable** for any nuclear damage caused, regardless of fault.
- The **maximum liability for a nuclear incident** is set at **₹1,500 crore ($200 million) for the operator**. If damages exceed this amount, the **central government** assumes responsibility for additional compensation.

2. Right to Recourse Against Suppliers (Controversial Clause)

- **Section 17(b)** of the Act allows **operators to seek compensation from suppliers** if the nuclear incident is caused by defective equipment or faulty material.

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- This provision is unique to India, as most international liability regimes (such as the **Convention on Supplementary Compensation for Nuclear Damage – CSC**) do not hold suppliers liable beyond their contractual obligations.

3. Compensation for Victims

- The Act provides a clear mechanism for **compensation to affected individuals**, ensuring fair and timely financial support.
- It mandates the creation of a **Nuclear Liability Fund**, where operators contribute to a pool that can be used in case of accidents.

4. Compliance with International Conventions

- India is a signatory to the **Convention on Supplementary Compensation for Nuclear Damage (CSC)**, an international treaty that establishes uniform liability rules.
- However, India's **inclusion of supplier liability** in the CLNDA has led to disagreements with international nuclear firms, delaying agreements on projects.

WAVES Summit

News: India will host the inaugural **World Audio Visual Entertainment Summit (WAVES)** from **May 1-4, 2025**, in **Mumbai**.

About the WAVES Summit (World Audio Visual Entertainment Summit)
- The event is positioned as **India's global summit for the entertainment sector**, similar to **Davos for the economic sector**.
- The government aims to establish WAVES as a **prestigious platform** for networking and business deals in the entertainment sector, similar to the **World Economic Forum at Davos**.
- The event will provide a stage for **industry leaders, policymakers, and creative professionals** to discuss trends, technological advancements, and the future of the global entertainment industry.
- The summit will host **top global media CEOs, entertainment icons, and creative minds**. Participants include: **Tech Leaders**, **Bollywood & Regional Film Stars**, **Music & Creative Industry** and **Business Leaders**.
- **Key Focus Areas**: The summit will highlight advancements in **Animation, Gaming, Entertainment technology and Regional & mainstream cinema.**
- **Vision for India**: The event aligns with India's goal to become a **global creative powerhouse** in media and entertainment.
- **Economic Impact**: WAVES is expected to **foster collaborations** in the entertainment industry, boost investments, and showcase India's potential as a **content and technology hub**.

La Niña

News: January 2025 recorded the highest global temperatures for any January on record, with the global average surface air temperature rising 1.75°C above pre-industrial levels (1850-1900 average), according to Europe's Copernicus Climate Change Service (C3S).

About La Niña

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- La Niña is a climatic phenomenon and one of the three phases of the El Niño-Southern Oscillation (ENSO) cycle.
- It is characterized by cooler-than-average sea surface temperatures in the central and eastern tropical Pacific Ocean.
- ENSO operates in three phases, each influencing global weather patterns differently:
    - **Neutral Phase** – Normal oceanic and atmospheric conditions prevail, with trade winds pushing warm waters towards the western Pacific.
    - **El Niño (Warm Phase)** – Trade winds weaken, causing warm water to spread across the central and eastern Pacific, leading to increased global temperatures.
    - **La Niña (Cool Phase)** – Trade winds strengthen, pushing warm waters further west, resulting in cooler oceanic temperatures and generally lower global temperatures.

Impact on Ocean and Atmosphere

- Trade winds strengthen, pushing **more warm water towards Asia.**
- Increased **upwelling** occurs off the west coast of the Americas, bringing **cold, nutrient-rich water** to the surface.
- The **jet stream shifts northward**, altering weather patterns significantly.

Impact on Weather Patterns

- **Northward shift of the jet stream:** It leads to **drought in the southern U.S.A and heavy rains and flooding** in the Pacific Northwest and Canada.
- **Winter Temperature Effects:** Warmer than normal in the southern U.S.A. and cooler than normal in the northern U.S. and Canada.
- **Hurricane Season:** La Niña can lead to a **more intense and active hurricane season.**
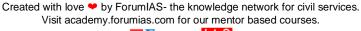
Impacts on Marine Life

- Colder Pacific waters during La Niña contain **more nutrients.**
- This attracts **cold-water species like squid and salmon** to coastal areas such as California.
- Marine ecosystems flourish due to the increased availability of nutrients.

Dashavatar Theatre

News: The centuries-old traditional theatre form Dashavatar, performed in Maharashtra's Sindhudurg district and parts of north Goa, is in the spotlight as it continues to preserve its cultural essence despite changing times.

About Dashavatar Theatre

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Source: TH

- Dashavatar is a traditional folk theatre form performed in **Maharashtra's Sindhudurg district and parts of north Goa.**
- The art form has been **practiced for over 800 years** and continues to be a **key part of local temple festivals (*jatras*).**
- This theatre originated in **Maharashtra, possibly influenced by Karnataka's *Yakshagana*.**
- It was **initially performed only by Brahmins**, later taken up by the **Devli community** to keep the tradition alive.
- It is **performed between October (post-harvest) and May.**
- Stories are based on the *Ramayana*, *Mahabharata*, and *Puranas*, featuring Vishnu's ten incarnations. It includes **humor, music, and moral lessons to engage audiences.**
- Comic interludes (*Bharud* or *Vidhushak*) provide entertainment while subtly addressing social issues.
- A unique feature of **Dashavatar** is that men **play both male and female characters.**
- It requires **mastery of feminine mannerisms, expressions, and voice modulation.**
- The performers use traditional makeup techniques, often learned through experience.
- Costumes include the *nauvari* (nine-yard sari), heavy jewelry, and wigs. Actors carry props like **dolls when playing motherly roles.**

Market Intervention Scheme (MIS)

News: The Government of India has **revised the Market Intervention Scheme (MIS) guidelines**, increasing the **procurement limit of crops under MIS from 20% to 25%** and introducing **new provisions** to encourage more States to implement the scheme.

About Market Intervention Scheme (MIS)

- MIS is a component of the **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)**.
- It is implemented to support farmers when market prices of perishable agricultural/horticultural commodities fall below a certain level.

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- The scheme is applicable to crops that do not have a **Minimum Support Price (MSP)**, such as **tomato, onion, and potato (TOP crops)**.
- MIS is implemented on the request of **State/UT Governments** when the market price reduces by at least **10%** compared to the previous normal season.

Objectives of the Market Intervention Scheme (MIS)

- To **protect farmers from distress sales** in case of price crashes.
- To **ensure farmers receive a fair price** for perishable crops not covered under MSP.
- To **stabilize market prices** and ensure sufficient supply of essential commodities.
- To **support farmers through direct benefit transfers or procurement mechanisms**.
- To **improve coordination between producing and consuming States** for better price realization.

Fort William Renamed as Vijay Durg

News: In a significant move towards eliminating colonial influences in the Indian Armed Forces, Fort William, the Eastern Command Headquarters of the Indian Army in Kolkata, has been officially renamed Vijay Durg.

Historical Significance of Fort William

- Originally constructed by the British in **1781**, Fort William was named after **King William III of England**.
- It has served as a **strategic military base** for over two centuries and continues to be a key command center for India's **Eastern Army Command**.
- The fort played a crucial role in **British colonial rule**, symbolizing their military presence in eastern India.

About Renaming of Vijay Durg

- The new name, **Vijay Durg**, draws inspiration from the **historic fort in Maharashtra**, which was a **naval base for the Marathas** under **Chhatrapati Shivaji Maharaj**.
- **Vijay Durg Fort**, located along the Sindhudurg coast, was a stronghold of **Maratha naval supremacy**, representing **Indian resilience and military strength**.
- Renaming Fort William to Vijay Durg signifies a **shift towards Indian heritage** and **military pride** over colonial legacy.
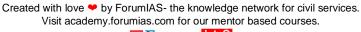
Other Renaming Initiatives at Fort William

- **Kitchener House** inside Fort William has been renamed **Manekshaw House**, after **Field Marshal Sam Manekshaw**, India's **first Field Marshal** and hero of the **1971 Indo-Pak war**.
- **South Gate**, previously called **St. George's Gate**, has been renamed **Shivaji Gate**, honoring **Chhatrapati Shivaji's legacy**.

India-UK Defence Agreements

In news: The strategic partnership between **India and the United Kingdom** has taken a significant step forward with new agreements aimed at enhancing **next-generation weapon systems**. These agreements were formally launched at **Aero India 2025**, marking the establishment of **Defence Partnership–India (DP-I)** to expand collaboration in the defence sector.

About India-UK Defence Agreements

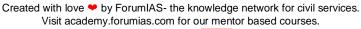- **Laser Beam Riding MANPADs (LBRM) and Lightweight Multirole Missiles (LMM)**

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- o **Thales (UK) and Bharat Dynamics Limited (BDL)** signed an agreement to deliver **Laser Beam Riding MANPADs (LBRM)**, including an initial supply of **High Velocity Missiles (STARStreak)** and launchers in 2025.
  - o The collaboration will extend to the production of **Lightweight Multirole Missiles (LMM)** in India.
  - o This partnership will integrate **BDL and Indian defence industries** into Thales' global supply chain, boosting **job creation, security cooperation, and interoperability** between the two armed forces.
- **Advanced Short-Range Air-to-Air Missile (ASRAAM) Facility**
  - o **Matra BAe Dynamics UK (MBDA UK) and BDL** are setting up India's **first ASRAAM assembly and test facility in Hyderabad**.
  - o This facility will arm India's **fighter jets** with cutting-edge **air-to-air missile systems** while also contributing to exports.
- **Maritime Electric Propulsion System for the Indian Navy**
  - ○ India and the UK signed a **Statement of Intent** to design and develop an **Integrated Full Electric Propulsion (IFEP)** system for India's next-generation **Landing Platform Dock (LPD) fleet**.
  - ○ This **landmark agreement** will enhance **self-reliance** in the power and propulsion capabilities of India's naval fleet.

International Criminal Court (ICC)

News: The International Criminal Court (ICC) has recently come under global scrutiny following its issuance of an arrest warrant for Israeli Prime Minister Benjamin Netanyahu over alleged war crimes in Gaza.

About International Criminal Court (ICC)

- The ICC is a permanent international court that prosecutes individuals for 4 serious crimes- genocide, war crimes, crimes against humanity, and the crime of aggression.
- It is an independent international organisation and is not part of the United Nations.
- **Established:** Created by the Rome Statute on 17 July 1998; became effective on 1 July 2002.
- **Headquarters:** The Hague, Netherlands.
- **Members:** It has 125 member states.
- **Notable exceptions:** the US, China, Russia, Israel, and India.
- **Languages:** Official languages include English, French, Arabic, Chinese, Russian, and Spanish.
- **Judges:** ICC has 18 judges who are elected by the Assembly of State Parties and have non-renewable 9-year terms.
- **Jurisdiction:** ICC only covers crimes committed after 1 July 2002.
- Can prosecute individuals only if the country where the offence was committed is a party to the Rome Statute or the perpetrator's country of origin is a party to the Rome Statute.
- It operates on the principle of complementarity, stepping in only if national courts are unable or unwilling to act.
- Crimes referred to the ICC Prosecutor by the UN Security Council.
- ICC has no jurisdiction with respect to any person under age of 18.
- **Enforcement:** ICC's decisions are binding. However, it does not have its own police force and relies on State cooperation, which is essential to the arrest and surrender of suspects.
- **Funding:** Contributions from member states and voluntary donations.

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Difference between International Criminal Court (ICC) vs. International Court of Justice (ICJ)

Aspects	International Criminal Court (ICC)	International Court of Justice (ICJ)
Established	2002 (by the Rome Statute)	1945 (by the UN Charter)
Purpose	Prosecutes individuals for war crimes, crimes against humanity, genocide, and crimes of aggression.	Settles disputes between countries and gives advisory opinions on legal questions.
Jurisdiction	Over **individuals** accused of crimes.	Over **states/countries** involved in disputes.
Membership	125 member states.	All **United Nations (UN) members** (193 countries).
Enforcement	Relies on member states for arrests and enforcement.	Enforced through UN Security Council decisions (though often difficult to implement).
Cases Handled	War crimes, genocide, crimes against humanity, aggression.	Border disputes, maritime conflicts, trade disagreements, treaty violations.

Bombay Blood Group

News: In a pioneering medical achievement, doctors in Chennai successfully performed a kidney transplant on a patient with the Bombay blood group, using an organ from a donor with a different blood type. The team adapted the Japanese technique of **double filtration plasmapheresis (DFPP)** to lower anti-H antibody levels, preventing organ rejection and making an unprecedented transplant possible.

About Bombay Blood Group
- The Bombay blood group (HH) is an extremely rare blood type first identified in Mumbai in 1952 by Y.M. Bhende.
- Unlike common ABO blood types, individuals with this group **do not** have A, B, or even H antigens.
- Due to the absence of the H antigen, individuals with the Bombay blood group cannot receive blood from any ABO group, including type O.
- They can only receive blood from another Bombay blood group donor, making transfusions and organ transplants highly challenging.
- In Bombay blood group individuals, the gene responsible for making the H antigen is mutated or absent.
- Their immune system **produces anti-H antibodies**, which means they **cannot receive blood from any ABO group**, including **O blood group**, which contains the H antigen.

Why is the Bombay Blood Group Rare?
- It occurs in **1 in 4 million** people worldwide.

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- The prevalence is higher in **India and South Asia**, where it is **found in about 1 in 10,000 people** (especially in Mumbai due to genetic factors).
- It is **extremely rare** in European populations (about 1 in a million).

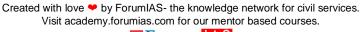## India-Egypt Joint Military Exercise

News: India and Egypt are set to conduct their third joint military exercise, Cyclone 2025, from February 10 to 23, 2025, at Mahajan Field Firing Range in Rajasthan.

About India-Egypt Joint Military Exercise

- **Objective:** The primary objective of Cyclone 2025 is to enhance military cooperation and improve interoperability between the special forces of both nations.
- **Motto:** The motto of Cyclone 2025 is "Together we train, together we excel," reflecting the spirit of cooperation and excellence between the two nations.
- **Aim:** Cyclone 2025 aims to strengthen defense relations between India and Egypt and promote knowledge exchange between their military forces.
- **Focus:** The exercise will focus on counter-terrorism operations, high-intensity combat, and survival techniques in desert conditions.
  - Training will include real-world combat scenarios, tactical maneuvers, and joint coordination exercises.
  - Special forces from both the Indian Army and the Egyptian Army will participate in this military drill.
  - Both armies will engage in specialized drills to enhance their operational capabilities in handling security challenges.
  - The joint exercise will improve the forces' preparedness to respond to evolving security threats and enhance mutual trust and coordination.

About Exercise CYCLONE

Aspect	Details
About	It is a Joint Special Forces exercise between India and Egypt.
Aim	To enhance mutual understanding of operational protocols for desert/semi-desert Special Operations under Chapter VII of the United Nations Charter.
First Edition	2023 (India)
Features of 2nd Edition	1. The Indian contingent is being represented by troops from The Parachute Regiment (Special Forces). 2. Egyptian contingent is being represented by Egyptian Commando Squadron and Egyptian Airborne Platoon. 3. The Exercise will involve planning and execution of special operations in sub conventional domain and will be conducted in three phases.

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Significance	1. It will provide an opportunity to both the contingents to strengthen their bond and share best practices.
	2. It will serve as a platform to achieve common security goals and enhance ties between two friendly nations.

Einstein Ring

News: The European Space Agency's (ESA) Euclid space telescope discovered a rare Einstein ring around a galaxy called NGC 6505, located 590 million light-years from Earth. The images were captured in September 2023 and released on February 12, 2025.

About Einstein Ring

- An **Einstein ring** is a ring-shaped pattern of light formed due to **gravitational lensing**.
- It occurs when light from a distant galaxy is bent by the gravitational field of a massive celestial object (such as a galaxy or cluster) in front of it.
- The light bends in such a way that it appears as a circular ring around the foreground object.
- **Einstein rings are extremely rare**—less than **1% of galaxies** produce them. **The first Einstein ring** was discovered in **1987**, and **only a few have been found** since then.
- These rings are **not visible to the naked eye** and **require powerful space telescopes** like **ESA's Euclid** or **NASA's Hubble**.

Significance of Einstein Rings

- **Study of Dark Matter**: **Dark matter** is believed to make up **85% of the universe's matter**, but it **cannot be directly observed** as it **does not emit light.** Einstein rings help scientists **study dark matter** indirectly because **gravitational lensing reveals the gravitational effect** of dark matter.
- **Understanding Distant Galaxies**: These rings allow **scientists to observe distant galaxies** that would otherwise be too **dim or far to detect.** The **magnifying effect** helps astronomers **study the structure and properties** of these galaxies.
- **Insights into the Expansion of the Universe**: **Einstein rings help measure cosmic distances** and the **rate of expansion of the universe.** By analyzing **light from distant galaxies**, scientists **track the stretching of space**.
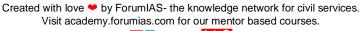
About Gravitational lensing

- **Gravitational lensing** is a phenomenon where **light from a distant object is bent** due to the gravitational pull of a massive object between the source and the observer.
- The massive object acts like a "lens," distorting and magnifying the light from the distant galaxy.
- When the alignment is perfect, the light forms a **complete circle**—an **Einstein ring**.

Corruption Perceptions Index (CPI) 2024

News: India ranked 96 out of 180 countries in the Corruption Perceptions Index (CPI) 2024, dropping three places from 93 in 2023.

About Corruption Perceptions Index (CPI) 2024

- The **Corruption Perceptions Index (CPI)** is released annually by **Transparency International**.

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- It **ranks 180 countries and territories** based on **perceived levels of public sector corruption**.
- The score is **on a scale of 0 to 100**:
    - **0 = Highly Corrupt**
    - **100 = Very Clean**
- The **ranking is based on surveys and assessments by experts and business leaders**.
- **India ranked 96 out of 180 countries** in **CPI 2024**.
    - **India's score dropped to 38** (from **39 in 2023** and **40 in 2022**), showing a **gradual decline**.
    - **India's rank in 2023 was 93**, meaning it **fell by three positions** in 2024.
- **Least Corrupt Nations (Top 3)**:
    - Denmark (1st) – Cleanest country.
    - Finland (2nd).
    - Singapore (3rd).
- **India's Neighbouring Countries' Rankings**
    - China – Rank 76.
    - Pakistan – Rank 135.
    - Sri Lanka – Rank 121
    - Bangladesh – Rank 149.

Sukhoi Su-57

News: The Sukhoi Su-57 is in the news due to Russia offering India the production of the aircraft to strengthen the Indian Air Force's (IAF) fleet.
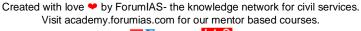
About Sukhoi Su-57
- The Sukhoi Su-57 is a fifth-generation stealth fighter aircraft developed by Russia's Sukhoi Design Bureau, designed for air superiority, strike missions, and reconnaissance.
- It is the first stealth aircraft in the Russian Air Force, featuring a low radar signature and pixelated dark and light grey camouflage with black pixels to enhance stealth.

Key Features:
- **Stealth & Low Observable Technology:** Reduces radar detection.
- **High Maneuverability & Supercruise:** Sustained supersonic flight without afterburners; capable of extreme aerial manoeuvres (e.g., 120-degree attack angles, "Cobra" manoeuvre).
- **Internal Weapons Bay:** Carries missiles and bombs while maintaining stealth; suitable for both long-range and close-combat engagements.
- **Advanced Avionics:** Integrated sensor fusion, AESA radar for multi-target tracking, onboard defence systems, and AI-assisted combat support.

Significance for India:
- As the world's largest arms importer, India seeks to modernize its air force, which includes over 260 Russian Su-30MKI jets.
- The Su-57 could meet India's need for a fifth-generation fighter, enhancing capabilities against regional rivals like China.
- Potential technology transfer and local production could strengthen India's defense manufacturing sector.

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Asian Elephants' Trumpeting and Vocal Communication

News: Researchers from **Indian Institute of Science, Bengaluru** studied Asian elephants in **Bandipur** and **Mudumalai National Parks** (Southern India). They **recorded elephant sounds for 2 years** in different places like forests, grasslands, and water bodies.

About Asian Elephants' Trumpeting and Vocal Communication

Findings of the study:

- Elephants produce 4 key types of sounds:

Type of Sound	What it Sounds Like	When it is Used
Trumpets	Loud, high-pitched	Social play, excitement, conflicts
Roars	Deep, loud sound	Distress, calling for attention
Rumbles	Low, vibrating sound	Contact with other elephants
Chirps	Short, high-pitched sound	Friendly communication

- Asian elephants trumpet for **many reasons**, including: **Social play, Excitement and Conflicts (fights)** between elephants or groups.
- Researchers checked if **age** and **sex** (male/female) affect sounds.
  - o **Younger elephants:** Higher-pitched sounds to get attention.
  - o **Older elephants:** Lower-pitched sounds for the same reason.
  - o **Males and females:** Trumpet sounds were similar across ages.
- **Calves (baby elephants)** use loud roars like their African elephants to g**et adults' attention** and **show emotions** (hunger, fear, etc.).
- Asian elephants sometimes **mix sounds** (e.g., roar + rumble).
- These **combination calls** may mean: **Keeping in touch** with the herd and **signaling danger** or disturbance.

Telecom Commercial Communications Customer Preference Regulations 2018

News: The Telecom Regulatory Authority of India (TRAI) has recently amended the Telecom Commercial Communications Customer Preference Regulations (TCCCPR), 2018, introducing stricter rules to combat spam calls and SMS messages.

About Telecom Commercial Communications Customer Preference Regulations, 2018
- It was introduced by the **Telecom Regulatory Authority of India (TRAI)** to curb unsolicited commercial communication (spam) through calls and SMS.
- It aims to **protect consumers from unwanted promotional and spam communications**.

Salient Features

1. Consent-Based Communication System

- Telemarketers can send messages only **with prior consent from consumers**.

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- Consumers can provide **preference settings** to receive messages only from selected categories like banking, education, health, etc.
- Introduction of **Digital Consent Acquisition (DCA)**, enabling businesses to **digitally collect consent from customers** for sending promotional messages.

2. Distributed Ledger Technology (DLT)

- **Blockchain-based DLT platform** implemented to ensure transparency and prevent unauthorized messages.
- Every message sender (entity) and telemarketer is **required to register on the DLT platform**.
- Consent and preferences of customers are **recorded on the blockchain** for easy tracking and verification.

3. Sender ID and Message Templates

- Businesses and telemarketers must **register message templates and headers (Sender IDs)** on the DLT platform.
- **Headers (Sender IDs)** help recipients **identify the sender** and **distinguish message types** like promotional, transactional, or service-related.
- Messages not matching pre-registered templates are **filtered and blocked**.

4. Types of Commercial Messages

- Messages categorized into four types, each identified by a **suffix in the header**:
    - **-P** for **Promotional messages**.
    - **-S** for **Service-related messages**.
    - **-T** for **Transactional messages** (e.g., OTPs, banking alerts).
    - **-G** for **Government messages**.
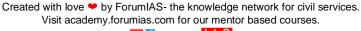
5. Consumer Complaint and Redressal

- Consumers can **report unsolicited messages or spam** via SMS or the **DND (Do Not Disturb) app**.
- Complaints are **forwarded to the respective telecom provider for investigation** and action.
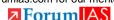
6. Penalties for Violations

- **Strict actions against violators** like blocking telemarketer services and blacklisting repeat offenders.
- **Financial penalties (₹2-10 lakh)** imposed on telecom providers for failing to act on complaints or misreporting spam issues.

7. Recent Amendments (2025 Update)

- **Tighter timelines** for spam complaint handling:
    - Complaints to be accepted up to **7 days after a spam call/SMS**.
    - **Action on unregistered telemarketers within 5 days**.
- **Disclosure requirements strengthened** for legitimate business messages.
- **Use of Artificial Intelligence** for spam detection based on:
    - **High call volumes**.
    - **Short call durations**.
    - **Low incoming-to-outgoing call ratios**

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Mutual Fund Investment Tracing and Retrieval Assistant (MITRA)

News: Recently, the Securities and Exchange Board of India (SEBI) launched MITRA (Mutual Fund Investment Tracing and Retrieval Assistant).

About Mutual Fund Investment Tracing and Retrieval Assistant (MITRA)

- It is a new digital platform designed to help investors trace and reclaim their inactive or unclaimed mutual fund folios.
- Aim: This initiative aims to address the growing concern of investors losing track of their mutual fund investments due to outdated contact details, lack of awareness, or forgotten investments over time.
- **Objective of MITRA:** The primary goal of **MITRA** is to empower investors by providing an industry-level searchable database that allows them to:
  - **Identify inactive and unclaimed folios** associated with their investments.
  - **Trace forgotten or overlooked mutual fund investments**.
  - **Verify investments made in their name by others** for which they may be the rightful legal claimants.
  - **Encourage investors to update their KYC (Know Your Customer) information** as per current norms.

Key Features of MITRA:

1. **Industry-Wide Database**: Consolidates inactive and unclaimed mutual fund folios across different fund houses.
2. **User-Friendly Search Tool**: Investors can easily search for their investments by entering details such as PAN or other identification data.
3. **KYC Updation Support**: Assists investors in updating their KYC details, thereby ensuring that their folios remain active and secure.
4. **Legal Claims**: Helps investors and legal heirs identify investments to which they may be rightful claimants.
5. **Reducing Inactive Folios:** Encourages investors to reactivate their folios, reducing the number of unclaimed and inactive accounts in the mutual fund industry.

Climate Risk Index (CRI) 2025

News: The Climate Risk Index (CRI) 2025 report highlighted that India registered at least 80,000 fatalities and nearly $180 billion in economic losses (inflation-adjusted) due to climate change-induced extreme weather events between 1993 and 2023.

About Climate Risk Index (CRI) 2025

- The **Climate Risk Index (CRI)** is an annual report published by the **environmental organization Germanwatch**.
- It evaluates the **impact of extreme weather events globally** and ranks countries based on **their vulnerability to climate-related disasters**.
- **Aim**: The **CRI aims to highlight countries that are most affected by extreme weather** and **emphasize the need for stronger climate policies and disaster preparedness**.

Key Findings from CRI 2025 Report on India

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1. Fatalities and Economic Impact: At least **80,000 people** died due to **extreme weather events**. India suffered **$180 billion in losses (inflation-adjusted)**

2. India's Global Standing: India ranked **6th globally** among **nations worst hit by climate disasters**. India accounted for **10% of global fatalities** from **extreme weather events**. India contributed **4.2% of global economic losses.**

3. Frequency of Extreme Weather Events: India faced more than 400 extreme weather events from 1993 to 2023. These events impacted 4.6 crore (46 million) people.

4. Major Types of Extreme Weather in India:

- **Heat Waves:** Extremely high temperatures, often **touching 50°C**, especially in **1998, 2002, 2003, and 2015**.
- **Floods and Landslides:** Recurring **floods and landslides** led to **mass displacement and damage to agriculture**.
- **Cyclones:** Coastal regions were **severely affected by destructive cyclones** such as **1998 Gujarat Cyclone, 1999 Odisha Super Cyclone, Cyclone Hudhud (2014) and Cyclone Amphan (2020)**

5. Climate Change as a Key Driver: Climate change made extreme heat 30 times more likely in India. Global warming is intensifying these events, making floods, heatwaves, and cyclones more frequent and severe.

6. Social and Economic Consequences: Floods and droughts force rural populations to migrate to cities. Farmers suffer crop damage, leading to financial stress and food shortages.

Key Takeaways from PM Modi's Visit to France

News: PM Modi co-chaired the AI Action Summit with French President Macron, focusing on open-source AI development, sustainability, and creating job opportunities through skilling.

Key Takeaways from PM Modi's Visit to France
  Strengthening Strategic Partnership:
   - India and France reviewed the 'Horizon 2047' Roadmap, agreed in 2023, marking 25 years of their strategic partnership (since 1998).
   - They reaffirmed cooperation in defence, nuclear energy, connectivity, and climate change.
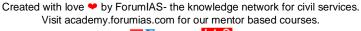 **Geopolitical Shifts – US and Trump Factor:**
   - Trump's outreach to Russia raised concerns in Europe over strategic dependence on the US.
   - France and the EU are reconsidering their defence policies, aligning with India's vision of strategic autonomy and a multipolar world.
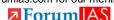 **Defence Cooperation:**
   - France is a key defence supplier to India; ongoing projects include Rafale jets, Scorpene submarines, helicopters, and joint production.
   - India offered its DRDO-developed Pinaka rocket launcher to France.
   - Defence Industrial Roadmap (2023) aims to strengthen joint manufacturing and exports.
  Connectivity – IMEC Project:
   - India and France discussed the India-Middle East-Europe Economic Corridor (IMEC), connecting India, the Gulf, and Europe.
   - France proposed Marseille as a key hub, offering an alternative trade route amidst regional uncertainties.

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Nuclear Energy Cooperation:
- France, a leader in nuclear power, is engaged in the Jaitapur nuclear project in India, though legal and cost issues remain.
- India plans legal reforms and is shifting focus to Small and Advanced Modular Reactors (SMRs, AMRs); Rs 20,000 crore was allocated in the Union Budget for nuclear R&D.
- India and France signed a cooperation agreement on SMRs and AMRs.

Climate Commitment:
- Both nations reinforced their commitment to climate action and energy transition, especially as Trump weakened US climate policies.

National Broadband Mission (NBM) 2.0

News: The Government of India has announced several key developments to enhance broadband connectivity in rural areas, focusing on improving telecom infrastructure and ensuring faster internet access.

About National Broadband Mission (NBM) 2.0
- NBM 2.0 will commence on **April 1, 2025**.
- **Objective:**
  - Improve broadband connectivity, especially in **rural, remote, and difficult-to-access areas**.
  - Ensure **high-speed, affordable, and reliable internet access** across India.
- **Key Focus Areas:**
  - **Expanding Connectivity in Remote Regions:** Address broadband gaps in hilly, tribal, and border regions.
  - **Satellite Broadband:** Promote **satellite-based internet services** to enhance connectivity in **rural and remote areas**.
  - **Utilizing Power Infrastructure:** Collaborate with the **Ministry of Power** to use **Optical Ground Wire (OPGW)** along power transmission lines to strengthen broadband networks in difficult terrains.

Dokra Artwork

News: Prime Minister Narendra Modi gifted an exquisite Dokra sculpture to French President Emmanuel Macron during his visit to France in February 2025.

About Dokra Artwork
- Dokra artwork is an ancient and celebrated form of metal casting that originated in India over 4,000 years ago.
- It is known for its rustic charm and intricate detailing, this art form continues to thrive, particularly in regions like Chhattisgarh, West Bengal, Jharkhand, and Odisha.
- Dokra art is a bridge connecting India's present with its tribal heritage. It reflects the harmony between humans and nature, the richness of folk traditions, and the creative spirit of indigenous artisans.
- It is globally admired for its unique aesthetics and the use of a time-honoured technique called the *lost-wax casting* process.
- Dokra pieces often depict tribal life, nature, animals, deities, and musicians. Each artwork tells a story:
  - **Musicians and Dancers:** Symbolize the central role of music and celebration in tribal culture.
  - **Animals like Elephants and Horses:** Represent power, prosperity, and reverence for nature.
  - **Deities:** Reflect indigenous spiritual beliefs and cultural practices.

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Distinctive Features of Dokra Art

- **Handcrafted Uniqueness:** No two pieces are identical, making each work a one-of-a-kind creation.
- **Earthy, Antique Look:** The rustic finish and natural imperfections add to the aesthetic charm.
- **Tribal Essence:** The motifs and patterns are deeply rooted in the everyday life and folklore of tribal communities.

Indirect Prompt Injection

News: Indirect prompt injection attacks have recently gained attention as a serious cybersecurity threat targeting AI chatbots powered by large language models (LLMs).

About Indirect Prompt Injection:

- It is a technique used to manipulate AI chatbots into executing malicious commands.
- Exploits the chatbot's ability to follow embedded instructions within processed content.
- **How It Works**
    - Attackers embed hidden commands in emails, documents, or web pages.
    - When an AI chatbot interacts with these materials, it unknowingly executes malicious actions.
    - Unlike direct prompt injection, users do not actively input malicious prompts—the AI extracts and follows hidden instructions.
- **Advanced Techniques Used**
    - **Delayed Tool Invocation:** AI follows malicious instructions only when triggered by specific user responses, making detection harder.
    - **Persistent Memory Manipulation**: False information can be embedded into the chatbot's long-term memory, leading to ongoing misinformation.
    - **Security Risks**:
- **Data Breaches**: AI may be tricked into revealing sensitive user or company information
    - **Misinformation**: Attackers can plant false knowledge that persists in chatbot memory.
    - **Unauthorized Actions**: AI could be induced to alter settings, generate harmful content, or spread misleading data.

TRUST Initiative

News: The India-US TRUST Initiative is a recent agreement between India and the United States to work together to secure the supply of critical minerals like lithium and rare earth elements (REEs), essential for advanced technologies, energy, and pharmaceutical production.

About TRUST Initiative

- **TRUST stands for: Transforming Relationship Utilizing Strategic Technology**.
- It is a partnership between **India and the US** to:
    - Improve the supply of critical minerals like **lithium** and **rare earth elements (REEs)**.
    - Strengthen supply chains for **pharmaceuticals**, **advanced materials**, and **high-tech products**.
    - **Reduce dependence on China**, which currently dominates the global supply of critical minerals.

Key Objectives of TRUST

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- **Strengthen supply chains** for: **Critical minerals** (lithium, rare earth, cobalt, etc.), **Pharmaceuticals** (Active Pharmaceutical Ingredients – APIs) and **advanced materials** used in **technology and defence**.
- **Encourage technology sharing**: It r**educe export controls** between India and the U.S.A and s**peed up the transfer of advanced technology** between the two countries.
- **Boost manufacturing and innovation** in **Semiconductors**, **Artificial Intelligence (AI)**, **Quantum computing**, **Defence technology**, **Space exploration** and **clean energy solutions**.

Benefits for India and U.S.A

(i) Stronger Pharma Supply Chain:

- TRUST will help **India secure the minerals needed for drug production** and **reduce dependence on China**.
- Helps **India maintain its position as a major exporter of medicines to the US**.

(ii) Securing Critical Minerals:

- **Lithium and rare earth minerals** are **needed for electric vehicles, batteries, and defence equipment**.
- **India and the US will work on exploring and processing these minerals** together.
- **Less reliance on China**, making **supply chains safer**.

(iii) Encouraging Innovation:

- TRUST will **bring together experts from universities, companies, and governments**.
- Focus on **new technologies in defence, space, AI, and renewable energy**.
- **Semiconductors and batteries** are **key areas** for **cooperation**.

Extended Reality (XR)

News: The **XR Creator Hackathon** is in the news because its **Delhi chapter** was recently held on **8th February 2025** at **91 Springboard, Noida**, as part of the **WAVE Summit initiative**.

About Extended Reality (XR)

- **Extended Reality (XR)** is a broad term that includes all immersive technologies that blend the real and virtual worlds.
- It covers **Virtual Reality (VR)**, **Augmented Reality (AR)**, and **Mixed Reality (MR)**.
- These technologies transform how we interact with digital content, making it feel more realistic and engaging.

Key Types of XR Technologies

XR Technology	Description	Example Applications
Virtual Reality (VR)	Creates a **fully immersive digital environment** where users experience a simulated world through VR headsets.	**Gaming, Training Simulations, Virtual Tours**
Augmented Reality (AR)	**Overlays digital content (images, information, objects)** onto the real world through smartphones, tablets, or AR glasses.	**AR Filters, Navigation Apps, Product Visualization**

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Mixed Reality (MR)	**Combines real and virtual worlds**, allowing digital objects to interact with the physical environment in real-time.	**Industrial Design, Remote Collaboration, Education**

Sudan Virus

News: The Ugandan government and the World Health Organization (WHO) confirmed a new Sudan virus disease (SVD) outbreak in February 2025.

About Sudan Virus
- **Caused by:** Sudan virus (SUDV) is part of the **Orthoebolavirus genus**, the same family as the Ebola virus.
- **Symptoms** include fever, muscle aches, fatigue, diarrhoea, vomiting, and internal and external bleeding.
  - Symptoms resemble those of **Ebola virus disease**. Sudan virus causes severe hemorrhagic fever with a high fatality rate.
- **Transmission:**
  - Spread through **direct contact** with blood, bodily fluids, or contaminated materials.
  - **Healthcare settings** with poor infection control are high-risk areas
- **Diagnosis:**
  - Requires **laboratory testing** (PCR tests or antigen detection tests).
  - Early isolation is critical even before confirmation.
- **Treatment & Vaccines:**
  - **No specific vaccine** or antiviral treatment is approved for the Sudan virus.
  - **Phase 1 vaccine trial** is underway for the virus.
  - Supportive care: **Fluid replacement, fever management, pain relief**, and treatment of co-infections.
  - Experimental **vaccine candidates** and **monoclonal antibody treatments** are under development.
- **Control Measures:**
  - **Contact tracing**, **isolation**, and **infection prevention protocols** are the most effective containment tools.
  - Weak healthcare systems and poor infection control accelerate transmission.
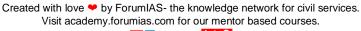- **Climate Change Impact:**
  - **Climate change** is influencing the **spread of infectious diseases**, including Sudan virus and other hemorrhagic fevers.
  - Mosquito-borne diseases like **malaria, dengue, and yellow fever** are also spreading to new regions, including Europe and North America.

Concept of Tax Year

News: The concept of tax year is in the news because it is a key feature introduced in the new Income-Tax Bill, 2025 during the presentation of the Union Budget on February 1, 2025.

About the Concept of Tax Year
- The 'tax year' is defined as a **12-month period starting from April 1 and ending on March 31**.

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- This aligns with India's financial year but replaces the earlier term 'assessment year' used under the Income-tax Act, 1961.
- The **new tax year concept is expected to come into effect from April 1, 2026**, along with the rest of the provisions of the new Income-Tax Bill, 2025.
- **Objective of the Change:**
  - The **simplification aims to align tax reporting directly with the financial year** to avoid confusion regarding assessment and previous years.
  - It is expected to pave the way for **a more fluid and transparent income tax reporting system**.
- **Impact on Taxpayers:**
  - Taxpayers will **report income and file returns based on the income earned within the same tax year**.
  - This **reduces confusion**, especially for new taxpayers, as the concept of 'previous year' and 'assessment year' was often misunderstood.
  - **Reduction in compliance complexity** as reporting will follow a straightforward tax year approach.
- **Applicability for Businesses/Professions:**
  - For a newly established business or profession, the **tax year will begin from the date of commencement** of the business/profession and end on the same March 31 of that financial year.
  - This allows businesses to align their tax reporting with their operational start date within the same financial cycle.

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