

Factly Weekly

Compilation

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**For UPSC CSE Prelims
Exam**

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Integrated Air Defence Weapon System (IADWS)

News: The ministry of Defence (MoD) announced that the Defence Research and Development Organisation (DRDO) has successfully conducted the first flight-tests of an Integrated Air Defence Weapon System (IADWS).

About Integrated Air Defence Weapon System (IADWS)



- It is a **multi-layered air defence system**, which includes **three components** –

- Quick Reaction Surface to Air Missiles (**QRSAM**)
- The advanced Very Short Range Air Defence System (**VSHORADS**) missiles
- A high-power laser-based Directed Energy Weapon (**DEW**).

- Developed by**

Figure 1.Source – HT

Components	Developed by
QRSAM	DRDO
VSHORADS	Research Centre Imarat (RCI), a Hyderabad-based facility of the DRDO
DEW	Centre for High Energy Systems and Sciences (CHESS), a Hyderabad-based facility of the DRDO
Command and control	The integrated operation of all these weapon system components is controlled by a Centralized Command and Control Centre , developed by the Defence Research and Development Laboratory, Hyderabad .

Components of IADWS

- **QRSAM:** It is a short-range Surface to Air Missile (SAM) system.
 - It is primarily designed to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks.
 - The entire weapon system is configured on highly mobile platforms.
 - It has search and track capability and can fire on short halts.
 - **Range:** The system has an operation range of three to 30 kilometers.
 - **Components:** The QRSAM weapon ensemble consists of a **fully automated command and control system**, two radars — **Active Array Battery Surveillance Radar** and **Active Array Battery Multifunction Radar** — and **one launcher**.

- Both the radars have a **360-degree coverage** with 'search on move' and 'track on move'
- **VSHORADS**: It is a **fourth-generation**, technically advanced **miniaturised Man Portable Air Defence System (MANPAD)**.
 - This missile system has the **capability to meet the needs of all the three branches** of the Armed Forces – **Army, Navy and Air Force**.
 - **Range and targets**: The weapon system can neutralize targets between the **range of 300 meters and six kilometers**, including **drones and other classes of aerial threats**.
- **DEW**: The **land version of the Vehicle mounted Laser DEW MK-II (A)** can defeat **fixed wing UAV and swarm drones**, causing structural damage and **disabling their surveillance sensors**.
 - **India has joined the exclusive club of global powers** who possess such a system.
 - It has a **range of less than three kilometers**.

Strategic significance

- **Neutralizing the threats**: They are meant to **neutralize aerial threats** within the **range of 30 kilometers** ranging from **high speed to low speed**, and **fixed wing to rotary wing type**.
- It can be looked at as a **stepping stone towards Mission Sudarshan Chakra**, a comprehensive defence shield.

ISRO's heaviest rocket Lunar Module Launch Vehicle (LMLV)

News: Indian Space Research Organisation (ISRO) says that the space agency was in the process of building its heaviest rocket ever, and had named it **Lunar Module Launch Vehicle (LMLV)**.

ISRO's heaviest rocket Lunar Module Launch Vehicle (LMLV)

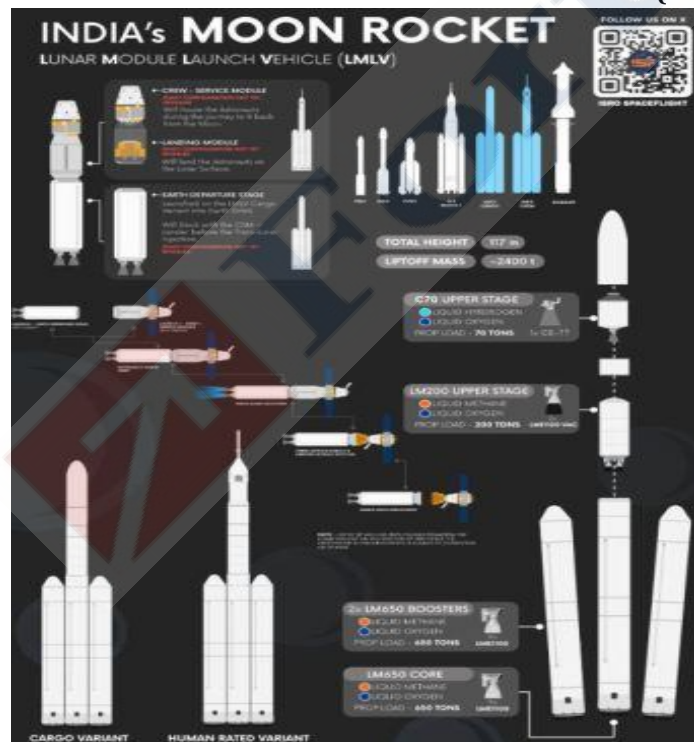


Figure 2. Source – ISRO SpaceFlight

- It is India's **forthcoming super-heavy-lift rocket** currently under development by the **Indian Space Research Organisation (ISRO)**.
- The LMLV would be **ready by 2035**.
- **Purpose**: It would be used for the **lunar missions**, including the **first human mission to the Moon**, planned by 2040.
- **Design**
 - This new rocket would be as **tall as a 40-storey building**.
 - It will be a **three-stage rocket**, with the **first two stages** using **liquid propellant** and the **third stage** using a **cryogenic propellant**.
 - The **first stage core**, along with **two strap-on motors**, will have **three sets of nine engines or 27 in total**.
 - Placed side-by-side, even the **strap-on boosters of the LMLV** are **taller than the entire height of the current LVM3**.

- The LVM-3 carried Chandrayaan-3 to the Moon and since then has been human-rated for use in the Gaganyaan mission, India's human spaceflight programme. But will be replaced by the LMLV now.
- **Payload Capacity:** The new rocket would be capable of carrying about **27 tonnes to the Moon** and **80 tonnes to low Earth orbits**, which are between **200 and 2,000 km** from the planet's surface.

Integrated Air Drop Test (IADT-1)

News: ISRO successfully carried out its first Integrated Air Drop Test (IADT-1), a critical milestone in preparations for the country's maiden human spaceflight programme, **Gaganyaan**.

About Integrated Air Drop Test (IADT-1)



Figure 3. Source – ISRO

- It is a **specialized trial** to ensure the **parachute system** designed for the **Gaganyaan crew module** performs reliably in real-world conditions.
- The **crew module** will be responsible for **safely bringing astronauts back to earth** after re-entry.
- **Conducted by:** This test is a joint effort of **ISRO, Indian Air Force, DRDO, Indian Navy and Indian Coast Guard**.
- This test is part of **system level qualification of parachute-based deceleration system**, in which a **simulated Crew Module**, encompassing the deceleration system is **dropped**

using a helicopter.

- **Highlights of test**
 - The Test was designed to **evaluate full suite of parachutes** that will **slow down and stabilize** the crew module during **re-entry and splashdown** of the actual human spaceflight mission.
 - This included **two drogue parachutes** which are conical or **funnel-shaped devices** with open ends, for initial slowing down, **followed by pilot chutes** and **three main parachutes** to ensure safe descent.

Integrated Food Security Phase Classification (IPC)

News: Recently, a global hunger monitoring body Integrated Food Security Phase Classification (IPC) officially declared that famine is occurring in Gaza.

About Integrated Food Security Phase Classification (IPC)

- It is the main global system for assessing hunger crises.
- It is **independent organisation** but funded by Western countries.
- **19 humanitarian organisations and regional bodies oversee it and work with national governments** to analyse data.
- **Purpose: Sound the alarm** early to prevent famine and guide humanitarian response.

- **Data collection method:** IPC relies on **UN World Food Programme (WFP)**, other relief organisations and government agencies.
- **Preferred measurement of malnutrition:** Children's weight and height and if not possible, mid-upper arm circumference is used.

How is Famine Determined?

- IPC classifies **acute food insecurity** on a **five-phase scale**. **Phase 5** is the highest: **Catastrophe** (individual household level). and **Famine** (wider area level).
- **Famine criteria:**
 - At least **20% of the population** face extreme food shortages.
 - **1 in 3 children** are acutely malnourished.
- At least **2 out of every 10,000 people die daily** from starvation, malnutrition, or related diseases.
- A **famine review committee** of up to 6 experts validates findings.
- IPC does not formally "declare" famine but provides **analysis for governments and agencies**.
- Even if an entire region is not in famine, IPC can still note "**famine conditions**" at household level.

SMILE Scheme

News: The central government has launched a 15-day Entrepreneurship Development Programme under the SMILE scheme to help transgender persons become self-reliant by providing economic empowerment.

About SMILE Scheme

- The **Support for Marginalized Individuals for Livelihood and Enterprise (SMILE)** is a **Central Sector Scheme** implemented by the **Ministry of Social Justice & Empowerment**.
- It functions as an umbrella programme that brings together two distinct sub-schemes:
 - **Comprehensive Rehabilitation for the Welfare of Transgender Persons**
 - **Comprehensive Rehabilitation of Persons Engaged in the Act of Begging**

Together, these aim to provide holistic welfare and rehabilitation measures for both transgender individuals and those dependent on begging.

Key Features

- **Educational support:** Scholarships are offered to transgender students from Class IX up to post-graduation, ensuring they can pursue and complete their studies.
- **Skill and livelihood development:** Training opportunities are provided under the **PM-DAKSH scheme** to strengthen employability and self-reliance.
- **Medical assistance:** The scheme integrates with **PM-JAY** to provide a composite health package. This includes support for **gender-reaffirmation surgeries** at designated hospitals.
- **Shelter and care:** Under the initiative of '**Garima Greh**', beneficiaries are provided food, clothing, medical support, skill training, and recreational facilities, ensuring dignity and social inclusion.
- **Legal and protection measures:** Every state will establish a **Transgender Protection Cell** to track offences, ensure proper investigation, and facilitate timely prosecution.
- **Information and accessibility:** A **National Portal and Helpline** has been set up to deliver information, guidance, and redressal services for transgender persons and those engaged in begging

X-Guard Fibre-Optic Towed Decoy (FOTD) System

News: During Operation Sindoor, the Indian Air Force (IAF) is believed to have successfully deployed the AI-enabled X-Guard Fibre-Optic Towed Decoy (FOTD) system, developed by Israel's Rafael.

About X-Guard Fibre-Optic Towed Decoy (FOTD) System



Source – Rafael

- It is a **state-of-the-art electronic warfare solution** to provide fighter aircraft with protection against advanced radar-guided missile threats.

Decoys

- They are specially designed systems or devices **used to mislead, distract, or confuse enemy surveillance, sensors, weapon systems, or decision-makers.**
 - **Goal:** Their primary goal is to **protect real military assets** (such as tanks, aircraft, ships, or command centers) by **presenting convincing false targets or signals** that divert attention or fire away from genuine assets.
- **Developed by:** Israel's Rafael Advanced Defense Systems as part of their electronic warfare (EW) suite.
 - **Features**
 - It is **lightweight (30 kg), retractable, and reusable.**
 - It can be **deployed**, either when the **aircraft approaches a threatened area** or upon **detection of an imminent threat**, to **counter radar-guided air-to-air and surface-to-air missiles** during operational missions.
 - **Working:** It **mimics the fighter aircraft's** (most optimally in Rafale) **Radar Cross-Section (RCS), doppler velocity, and spectral signature** across multiple radar bands.
 - It can also **replicate the fighter aircraft's onboard electronic countermeasures.**
 - It creates a **convincing illusion** for both human operators and tracking systems.
 - Its **360-degree jamming signal capability** integrates seamlessly with the **Rafale's SPECTRA (Self-Protection Equipment Countering Threats to Rafale Aircraft) EW suite.**
 - While **SPECTRA** manages **threat detection, blocking, and onboard defensive measures**, the **X-Guard adds a trailing expendable layer**, jointly forming a **multi-tiered defensive shield.**
 - **Benefits**
 - Increases aircraft survivability and mission success probability
 - Provides full sphere defense coverage
 - Fast deployment, low drag and lightweight; minimal limitation on aircraft maneuverability
 - Reusable; reeled-in after mission completion
 - Cost-effective; low Life Cycle Cost (LCC)
 - High reliability and safety operation during all flight phases; simple operation by pilot

Comparable systems

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- **Leonardo UL's BriteCloud:** It is being deployed on Eurofighter Typhoons, Sweden's Gripen-Es, and certain F-16 variants.
- **AN/ALE-50/55 series from Raytheon/BAE Systems:** It is being used on the F/A-18E/F Super Hornet.

Vithalbhai Patel

News: The Delhi Legislative Assembly is hosting a two-day All India Speakers' Conference to commemorate the 100th anniversary of Vithalbhai Patel becoming the President of the Central Legislative Assembly under British rule.

About Vithalbhai Patel

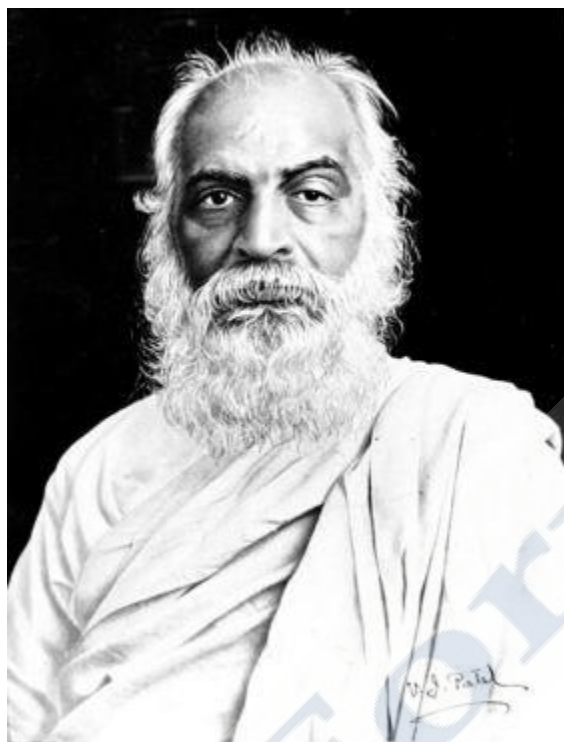


Figure 4. Source – SardarPatelTrust

- He was born on **September 27, 1873**.
- He was the **third of the five sons of Jhaverbhai** and mother **Ladba of Karamsad**.
- He **studied law in England**, and came back to **Bombay to practise**.
- **Political Career:**
 - He was elected to the **Bombay Legislative Council in 1912** and to the **Imperial Legislative Council in 1918**.
 - In **1924**, he was elected member of the **Central Legislative Assembly from Bombay city**.
 - **President:** He was the **first Indian to become the President** of the **Central Legislative Assembly**, Parliament's equivalent under British rule, on **August 22, 1925**.
 - He stayed the **president** of the Central Legislative Assembly for **two tenures**.
 - **Resignation:** He **resigned** as the President of the Assembly in **1930** to be fully involved in politics by joining the Congress Working Committee.
- **His role as President of Central Legislative Assembly**
 - **Parliament's security:** It was due to his efforts that the **Parliament's security (i.e. ward and watch system)** was **handed over to the Speaker**.
 - This system **continued till 2024**, when the **CISF** stepped into that role.
 - **Independent Parliament Secretariat:** He was able to set up an **independent Parliament Secretariat**, with the **officials in it reporting to none but the president**.
 - This was to ensure that the **staff advising and helping the president** were serving no other boss, and hence would be **fully independent**.
 - **Separate Legislative Assembly Department**
 - It was during his second term, a **separate Legislative Assembly Department** was created in the **portfolio of the Governor-General** but under the **de facto control of the President**.
- **Contribution in Freedom Struggle**

- He was among those senior Congress leaders who **opposed Mahatma Gandhi's decision to suspend the Non-Cooperation Movement** against the British after the Chauri Chaura incident.
- He, along with other **senior congress members** like Subhas Chandra Bose, Motilal Nehru, Chittaranjan Das, founded the **Swaraj Party in 1923**.
- However, they **worked closely with the Congress** for the cause of India's freedom.
- **Death:** Vithalbhai died in **Geneva** on **October 22, 1933**, of **ill-health**.

Smart Intelligent Village Project

News: Maharashtra Chief Minister has announced the setting up of India's first "Smart and Intelligent Village" in Nagpur district.

About Smart Intelligent Village Project



Figure 5. Source – IE

- It is a pioneering **rural development initiative** in India that **leverages advanced digital technologies** to transform everyday life in villages.

- It will provide the **requisite infrastructure, manpower, and basic facilities** for installation, including the GP office, school, anganwadi, water-well, and village lake.

- **Pilot project:** The Project is starting with a **pilot in Satnavri village, Nagpur district, Maharashtra**.

- **Smart Intelligent Village:**
 - A Smart Intelligent Village is envisaged as **representing a model of rural development** that uses **digital technologies, Internet of Things (IoT), Artificial Intelligence (AI)** and **seamless connectivity** to improve everyday living in India's villages.
- **Proposed proposed by:** The Project was proposed by the **Voice of Indian Communication Technology Enterprises (VoICE)**, a consortium of major Indian players in the telecom sector.
- **Implemented by:** It will be implemented by the **District Zilla Parishad and VoICE** with the participation of **Gram Panchayats and villagers**.
- **Working:** A **Central Network Management Control System (C-NOC)** monitors all devices in the Smart Intelligent Village, **tracks** their uptime and availability, and **instantly flags problems** to the right vendors for quick fixes.
 - This ensures **smooth functioning** of services and maximises their uptime.
- **Estimated cost:** It will cost **around Rs. 50 lakh** on average to build a smart, intelligent village.
- **Some of the Smart Interventions in a Smart Intelligent Village**
 - **Agriculture:** Smart agriculture uses **IoT sensors** to **monitor soil and crop conditions** in real time, helping farmers **save 25%-40% water**, cut the **costs of fertilisers** by 30%, detect **pests early**, and **increase yields** by up to 25%.
 - **Fisheries:** **Sensors** track the water **quality** in ponds, measuring **oxygen**, pH, temperature, etc., and alerts are sent to farmers in real time.

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- **Use of drones in farming:** Drones equipped with GPS and sensors spray fertilisers based on soil mapping, ensuring precise application and reducing the use of chemicals by 20%-30%, and lowering the environmental impact.
- **Safety & convenience:** IoT-linked CCTV cameras and drones monitor farms, assets, and public spaces in real time, and AI is used to detect intrusions or crop damage.
- **Drinking water:** An AI-powered system monitors drinking water **supply and quality** in real time, ensuring the supply of the mandated volume of 55 litres of water per capita per day.
- **Healthcare:** Comprehensive rural healthcare in the village offers on-the-spot testing for more than 120 health parameters, from **blood and cardiac checks to cancer and TB screening**, with results available within minutes in certain cases.
- **Education:** **Online** education in the village uses e-learning platforms, **Wi-Fi hotspots** at the Gram Panchayat offer **BharatNet** connectivity with speeds up to 100 Mbps for free.
- **Security:** The village has a public protection and emergency system in which security staff can use handheld devices with push-to-talk communication.
- **Waste management:** A smart waste management system uses IoT-enabled bins and tracking tools to ensure the safe collection and disposal of garbage, and prevent harmful chemicals such as lead, mercury, and cadmium from polluting soil and water.

NASA CHAPEA Project

News: Recently, NASA has unveiled the second Crew Health and Performance Exploration Analog (CHAPEA) habitat to simulate year-long missions on the surface of Mars. It is scheduled to begin in late 2025 with four crew members

About NASA CHAPEA Project

- The Crew Health and Performance Exploration Analog (CHAPEA) is a mission series designed to simulate year-long stays on the surface of Mars.
- Each mission will place four crew members inside a 1,700-square-foot habitat, a 3D-printed habitat designed to replicate Martian living conditions.
- **Habitat features:** The CHAPEA habitat is a 3D-printed, isolated structure at NASA's Johnson Space Centre in Houston, TX.
 - It is built to replicate a realistic Mars habitat for long-duration, exploration-class missions.
 - Life inside the habitat is designed to closely mirror what future crews might experience while living on the Martian surface.
 - Its layout includes distinct zones for both living and working, supporting the day-to-day needs of the crew.
- During the simulation, the crew will perform mock spacewalks and contribute data on various aspects of health and performance, including both physical and behavioural factors.

Key Facts about Fiji

News: Recently, Prime Minister Narendra Modi announced that India will supply training and equipment to help strengthen Fiji's maritime security.

About Fiji



- Fiji is a sovereign island nation in **Melanesia, Oceania**.
- It is officially known as the **Republic of Fiji**.
- It is well known for its **strategic location in the South Pacific** as well as its **rich natural resources**.
- It lies in the **South Pacific Ocean**, about **2,000 kilometers northeast of New Zealand**.
- It is surrounded by the **Koro Sea** and forms **part of Oceania's Pacific archipelago**.
- The capital city, **Suva**, is **located on the island of Viti**

Levu.

- The country is an **archipelago consisting of more than 330 islands**, of which around 110 are permanently inhabited, along with approximately 500 smaller islets.
- The two largest islands, **Viti Levu and Vanua Levu**, are home to about 87 percent of the population.
- Fiji is of **volcanic origin**, with **geothermal activity** most notable on **Vanua Levu and Taveuni**.
- Its people are mainly of **Austronesian and Melanesian ancestry**, with significant Polynesian influences.
- The **official currency of Fiji is the Fijian Dollar (FJD)**.

National Designated Authority (NDA)

News: Recently, the Ministry of Environment, Forest and Climate Change has announced a National Designated Authority (NDA) to enable a carbon emissions trading regime.

About National Designated Authority (NDA)



Figure 6. Source – Montel

- The National Designated Authority (NDA) has been set up by the **Ministry of Environment, Forest and Climate Change (MoEFCC)**.
- It is a **mandatory** requirement under the **Article 6 of 2015 Paris Agreement**.
 - The **Article 6 within the Paris Agreement** defines the contours under which such an **emissions trading regime, or a market**, can take shape.

- **Purpose:** The main purpose of the NDA is to enable a **carbon emissions trading regime** or carbon markets in India.
- **Composition**
 - It is a **21-member committee**.
 - **Head:** It is **headed by the Secretary** of the **Environment Ministry**.
 - **Members:** Its members include representatives from the Ministry of External Affairs, Ministry of Renewable Energy, NITI Aayog and Steel Ministry among others.
 - The **maximum** representation is from the **Environment Ministry**.
- **Functions of NDA**
 - The NDA is responsible for **recommending to the Union Government a list of activities** that can be considered for the trading of emission reduction units under **Article 6**.
 - It evaluates and approves projects that aim to reduce carbon emissions.
 - It ensures that projects are in line with **India's sustainability goals, country-specific criteria, and national priorities**.
 - It authorizes projects to use emission reduction units so that India can achieve its **Nationally Determined Contributions (NDCs)**.
- **Importance**
 - It will help India in **achieving its NDC commitments** i.e. reducing its **GDP's emission intensity by 45% by 2030 from 2005 levels**, achieving **50% cumulative electric power capacity from non-fossil fuel sources by 2030**, and creating an **additional carbon sink of 2.5-3 billion tonnes** of carbon dioxide equivalent by 2030 through **afforestation**.

New World Screwworm

News: Recently, U.S.A. reported its **first human case** of New World Screwworm infestation, involving a person who had travelled to **El Salvador**.

About New World Screwworm



Figure 7. Source: 1010wcsi.com

the infected site.

- In severe cases, the larvae can invade deeper tissues such as the brain, leading to **sepsis** and possibly death.
- **Life cycle and reproduction**

- The New World Screwworm is a type of **blue-grey blowfly**.
- **Scientific name:** **Cochliomyia hominivorax**, which literally means “**man-eater**.”
- **Naming:** These flies are called **screwworms** because their **larvae burrow into the tissue in a screw-like way**.
- **Distribution:** They are usually found in **South America and the Caribbean**.
- **Symptoms of infestation:** They include **wounds or sores that do not heal, bleeding from open sores, movement of larvae under the skin**, and a **foul odor** from

- A single female screwworm can lay up to **300 eggs at a time**, and up to **3,000 eggs during her lifespan** of 10–30 days.
- The **eggs hatch into larvae** that feed on tissue, causing **infestation**.
- After feeding, the larvae fall to the ground, burrow into the soil, and emerge as adult flies.
- **Threat: Humans** are targeted **rarely**, but the risk increases when people travel to regions where the parasite is present.
 - The parasite poses a serious **threat to livestock**, especially cattle, because open wounds on animals provide easy entry points for infestation.
- **Control and eradication efforts**
 - The United States eradicated the New World Screwworm in **1966** using the **sterile insect technique**.
 - This method involved **rearing billions of sterile male flies** and **releasing** them into the wild.
 - When wild females mated with sterile males, they **did not produce** offspring, which helped reduce the population.

Arogyapacha and Kani Tribe

News: Kuttimathan Kani, the forest elder who revealed Arogyapacha, **died in poverty at 72 on August 23, 2025** near Kerala's Agasthyamalai forests.

About Arogyapacha



Figure 8. Source – DTE

- It is a small **rhizomatous perennial herb** (*Trichopus zeylanicus*),
- **Distribution:** **Sri Lanka, southern India, Malaysia**; near streams in lowland forests; around **1,000 m** in India
 - **In India:** It is endemic to the Western Ghats (Agasthya hills).
- **Importance:** It is revered as a “**miracle plant**.” Used by the **Kani tribe to combat fatigue**.
 - **University of Kerala** decoded its genome, enabling work on secondary metabolism, genetic improvement, and comparative studies

About Kani Tribe

- The **Kani (Kanikarars)** live in the **Agasthyamalai hills** of the Western Ghats, Thiruvananthapuram, Kerala.
- They are traditionally **nomadic**; but now **settled**. (**not** notified as a **PVTG**)
- **Population:** **Around 25,000** living in **hamlets of 10–20 families** around forest areas.
- **Language:** **Tamil and Malayalam**.
- **Governance**
 - Each settlement has a hereditary council: **Moottukani** (chief), **Vilikani** (convenor), **Pilathi/Plathi** (physician-priest).

- The **Moottukani** combined the roles of **lawgiver, protector, judge**, and healer.
- **Pilathi/Plathi** are believed to have special powers. They perform rituals, chant mantras, and use the **Kokara**. Only **Pilathi/Plathi** may **preserve and transmit** traditional medical knowledge.
- **Livelihoods**
 - **Handicrafts**, seasonal collection of **honey** and **beeswax**.
 - Farming **tapioca, banana, millets**, and cash crops.
- **Key strength**
 - Vast expertise in **medicinal plants** – famous for using **Arogyapacha**.

Exercise Bright Star 2025

News: Egypt will conduct the multilateral 'Exercise Bright Star' from August 28 to September 10, 2025.

About Exercise Bright Star 2025



Figure 9. Source – DD News

- Exercise Bright Star is a **multilateral tri-service exercise** hosted by **Egypt** with the **United States since 1980**.
- It is held **biennially** and is among the largest in the region.
- **2023 edition:** The 2023 edition included **India** and multiple participating nations.
- **2025 edition**
 - The **key activities** to be undertaken in the Exercise are –
 - Live Firing by the three Services showcasing the operational capabilities of the

Indian Army, Indian Navy and Indian Air Force

- Command Post Exercise to enhance joint planning, decision-making and operational coordination
- Short Training Exercises by all three Services focusing on varied aspects of modern warfare
- Subject Matter Expert Interactions on multiple domains of contemporary military operations.
- **Significance for India**
 - Underscores commitment to regional peace, stability, and security.
 - Enhances jointness, interoperability, and cooperation with friendly countries.

PM SVANidhi Scheme 2.0

News: The Union Cabinet approved the restructuring and extension of PM SVANidhi ("PM SVANidhi Scheme 2.0").

About PM SVANidhi Scheme 2.0



Figure 10. Source – SMEStreet

● **Full Name:** Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi 0

● **Extended version:** This scheme is an **extension and restructuring** of the original **PM SVANidhi scheme**.

○ The original **PM SVANidhi Scheme** was launched on **1 June 2020** to support street vendors during the **COVID-19**

● **Implementing agencies:** Implementation of the scheme would be the **joint responsibility** of Ministry of Housing & Urban

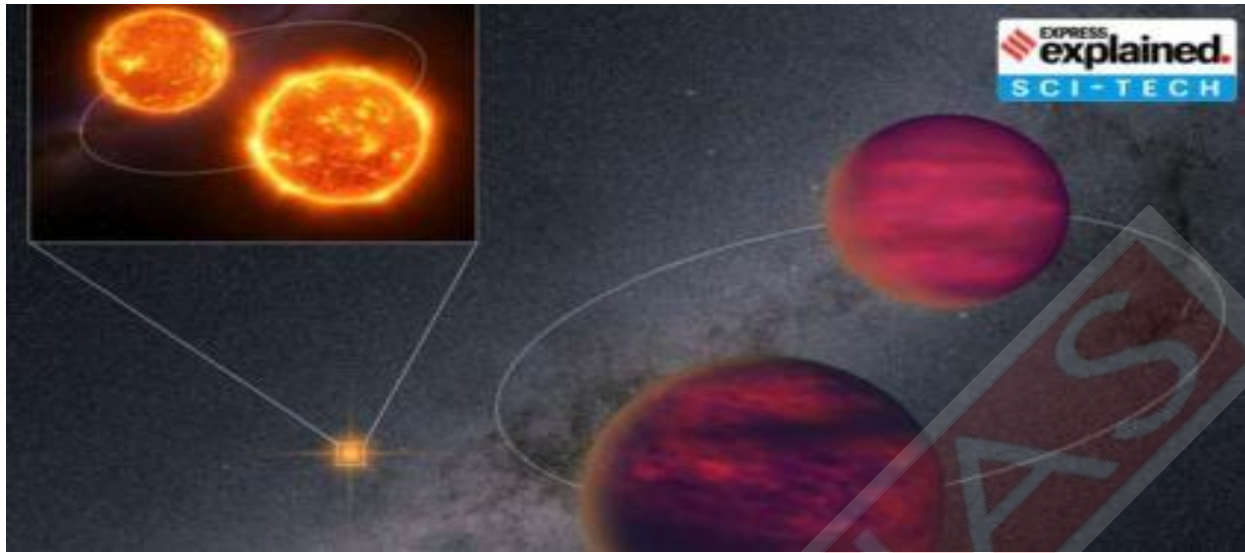
Affairs (**MoHUA**) and Department of Financial Services (**DFS**).

- The DFS is responsible for facilitating access to loan/ credit cards through banks/financial institution and their ground level functionaries.
- **Key features of scheme**
 - **Total outlay:** The total outlay for the scheme is ₹7,332 crore.
 - **Timeline:** The lending period now runs till 31 March 2030.
 - **Targeted areas:** Its coverage to grow **beyond statutory towns to census towns and peri-urban areas** in a graded manner
- **Benefits of scheme**
 - **Enhanced loan structure:** The enhanced loan structure includes –
 - First tranche loans increased up to Rs 15,000 (from Rs 10,000)
 - Second tranche loans increased up to Rs. 25,000 (from Rs. 20,000)
 - Third tranche remains unchanged at Rs. 50,000.
 - **UPI-linked RuPay Credit Card:** It is provided to vendors who have repaid the 2nd tranche loan for quick access to emergency credit.
 - **Digital incentives:** The street vendors can avail cashback incentives up to Rs. 1,600 on making retail and wholesale transactions.
 - **Capacity building and standards**
 - Entrepreneurship, financial literacy, digital skills, and marketing through convergence.
 - Standard hygiene and food safety trainings for street food vendors with FSSAI.
- **National recognition:** The scheme was awarded the **PM's Award for Excellence in Public Administration (2023)** for Innovation (Central Level) and **Silver Award** for Excellence in Government Process Re-engineering for Digital Transformation (**2022**).

Quadruple Star System and Brown Dwarfs

News: Recently, Scientists have discovered a **rare quadruple star system** in the Milky Way galaxy.

About the Quadruple Star System



Source – IE

- A **star system** in the Milky Way galaxy named as **UPM J1040–3551 AabBab**, is also called as a **rare quadruple star system** by the scientists.
 - It consists of **two cold brown dwarfs** orbiting **two young red dwarf stars**.
 - This specific configuration has **never been seen before** in astronomy.
 - The discovery was made by an international team of scientists led by **Professor Zenghua Zhang of Nanjing University**.
- **The system is important because:**
 - It helps scientists learn more about how **different types of stars and sub-stellar objects form together**.
 - **Multiple-star systems are common for massive stars**, but much less common for **smaller stars and brown dwarfs**.

About Brown Dwarfs

- These are celestial objects that are often called “**failed stars**”.
- **Features**
 - **Formation:** They form in the same way as stars, from **collapsing clouds of gas and dust**.
 - **Not true stars:** They **do not have enough mass to sustain hydrogen fusion**, which is the process that makes stars shine.
 - Because of this, they are **not true stars** and instead are **cooler and fainter**.
 - They share some features with **planets like Jupiter and Saturn**, especially in their atmospheres.
 - Brown dwarfs can be as massive as **70 times the mass of Jupiter**.
 - Brown dwarfs are **cold and faint**, so they emit **very little visible light**.
 - **Hard to detect:** Astronomers usually detect them when they are part of a system with **brighter stars**.
- **Importance**
 - Studying the brighter companion stars helps **scientists estimate the age, temperature, and composition** of the faint brown dwarfs.
 - The discovery of brown dwarfs in a **quadruple system** is especially useful, because all four objects likely formed from the **same material at the same time**, giving more reliable data.

Why Do Scientists Study Brown Dwarfs?

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- Studying brown dwarfs helps scientists understand the **conditions needed to form stars and planets**.
- They also help in estimating the **distribution of mass in the universe**.
- Since much of the universe's mass is invisible and exists as **dark matter**, brown dwarfs provide important clues to fill the gap in our understanding.
- Discovering systems like UPM J1040-3551 helps scientists see how **rare low-mass objects** (like brown dwarfs) can exist in stable multiple-star systems.

FIDE World Cup 2025

News: The FIDE World Cup 2025 will be hosted in **Goa, India**.

About FIDE World Cup 2025



Figure 11. Source – FIDE

- **Organizer:** The event is being organized by **FIDE (International Chess Federation)**.

- **Timing:** The tournament will take place from **October 30 to November 27, 2025**.

- **Number of Players:** A total of **206 chess players from more than 90 countries** will participate.

Tournament Format

- **Knockout format:** The competition will follow a

knockout format, where a player must win to move forward.

- If a player loses, they are **immediately eliminated** from the tournament.
- **Match format:**
 - The World Cup will be played over **eight rounds in total**.
 - Each match between two players will have **two classical games**.
 - If the score is **tied** after these games, there will be **tie-breaks on the third day**.
 - The **top 50 players** will receive a **bye** in the first round, meaning they start directly from round two.
 - The knockout system works like other sports World Cups, where **only winners advance** to the next round.

Candidates Tournament

- The World Cup is important because the **top three finishers** will qualify for the **2026 Candidates Tournament**.
- The Candidates Tournament decides who will challenge the reigning **World Chess Champion**.
- This makes the FIDE World Cup a **key step toward the World Championship title**.

Big names and Indian players

- The **reigning World Champion D Gukesh** from India will play in the event.
- **Viswanathan Anand**, a five-time World Champion and FIDE Deputy President, is also listed, though he is semi-retired.

- Other famous Indian players include **Praggnanandhaa R, Arjun Erigaisi, Vidit Gujrathi, Nihal Sarin, and Aravindh Chithambaram** among others.
- In total, **21 Indian players** have qualified for the tournament.

Sectors worst hit by U.S. tariffs on India

News: U.S. 50% tariffs on Indian imports began on August 27, triggering demand drops in several labour-intensive export sectors.

Sectors Worst Hit by U.S. Tariffs on India



Figure 12. Source – TH

Mechanism of assessing impact: We can judge impacts by **three signals used together:**

1. **Dollar sales to the U.S.** (how big the market is),
2. **U.S. share in a sector's total exports** (how dependent it is),
3. **The new final tariff** (how steep the price penalty is).

- When **all three are high**, the impact is **severe**; when **U.S. share is small**, the impact is **limited**.

Sectors facing severe impact

- **Shrimp:** India exports \$2.4 billion worth of shrimp to the U.S.
 - It is about one-third of total shrimp (32.4%).
 - Tariffs increase from 10% to 60%.
 - Andhra Pradesh is going to face a severe impact.
- **Diamonds, gold, jewellery:** It accounts for \$10 billion of exports India's exports to the U.S.
 - It is about two-fifths (40%).
 - Final tariffs now, 52.1%.
 - Production cuts reported in hubs like Surat; its polishing industry employs ~12 lakh people.
- **Textiles & apparel:** India has \$10.8 billion of exports to U.S; with apparel exports of \$5.4 bn.
 - U.S. is **35%** of India's apparel exports.
 - Final tariffs now is 63.9%(**9%+ 50%**).
 - **This will impact Indian cities such as Tiruppur, Noida-Gurugram, Ludhiana, and Bengaluru.**
- **Carpets:** India exports \$1.2 billion worth of carpets to the U.S.
 - India has **high dependence** on U.S. (**~58.6% of total carpet exports**).
 - Tariffs increase from **9% to 52.9%**.
- **Also hit:** handicrafts; leather and shoes; furniture and bedding; basmati rice, spices, tea, pulses, sesame.

Sectors with modest impact

- **Organic chemicals:** India has \$2.7 billion worth of exports.
 - It is about one-eighth of total organic chemical export (13.2%).
 - Tariffs increase from **4% to 54%**.

- **Metals (steel, aluminium, copper):** India has \$4.7 billion worth of exports to U.S.
 - It is about one-sixth (17%).
 - Global Trade Research Initiative (GTRI) warns of risks to SMEs and jobs in stainless steel, aluminium casting, copper semi-finished goods.
- **Machinery & mechanical appliances:** India has \$6.7 billion worth of exports.
 - It is about one-fifth (20%).
 - Demand expected to ease.

Government response

- Leaders reiterate 'swadeshi' and 'go vocal for local'.
- A multi-ministry plan (reported August 13) aims to ease short-term exporter pain.
- Medium-to-long term: diversify markets and use FTAs better;

Unified District Information System for Education Plus (UDISE+) and Report 2024-25

News: The UDISE+ Report 2024-25 shows a decline of 11.13 lakh students in 2024-25 over 2023-24, led by government and government-aided schools, while private schools recorded an increase.

About Unified District Information System for Education Plus (UDISE+)

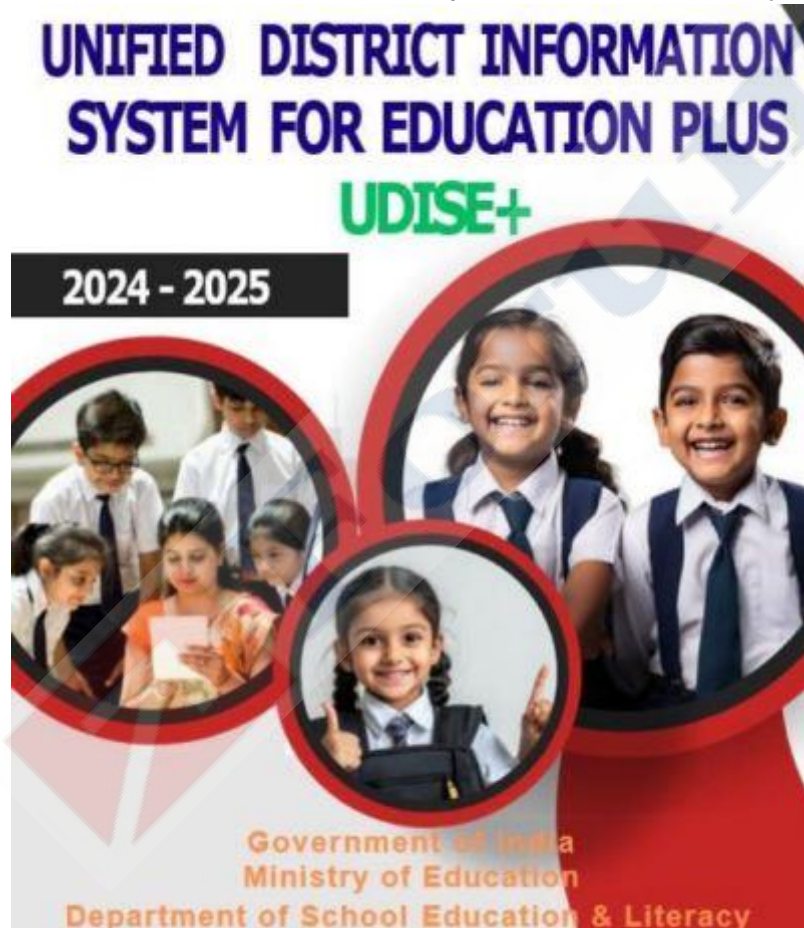


Figure 13. Source – UDISE

- It is a **unified platform**, facilitating streamlined **data reporting** by **schools** providing formal as well as special education.
- **Nodal Ministry:** It is India's **national Educational Management Information System** under the **Department of School Education & Literacy, Ministry of Education**.
- It is the **official statistics platform** for **school education** (from **pre-primary** to **higher secondary levels**).
- It lets **recognized schools** enter **data on infrastructure, facilities, students, and teachers** each **academic year** in near real time.
- **Evolution**
 - UDISE began in **2012-13**, integrating **DISE** (elementary) and **SEMIS** (secondary) into one of the largest MIS for school education.
 - **UDISE+** is the upgraded version.
 - It is fully online and gradually real-time.
 - From **2018-19**, data has been

collected through UDISE+ software to improve quality, credibility, and analysis.

- **Coverage and Scale**

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- UDISE+ covers **all recognized schools**—formal and special—from **pre-primary to higher secondary**.
- **Working**
 - Schools use a **central online portal**. Each school has a **login ID and password**. Data is entered through the **Data Capture Format (DCF)** at the school level. UDISE+ thus serves as a single, standardised mechanism for compiling school-wise data across the country.

Highlights of UDISE+ Report 2024-25

- **Dropout Rates Decline:** Dropouts fell across levels-Preparatory at 2.3%, Middle at 3.5%, and Secondary at 8.2%.
- **Retention Improves:** Student retention rose to 98.9% at the Foundational level, 92.4% at Preparatory, 82.8% at Middle, and 47.2% at Secondary.
- **Enrolment Growth:** Gross Enrolment Ratio (GER) increased to 90.3% in Middle grades and 68.5% at Secondary level.
- **Smooth Transitions:** Progression rates between stages improved-98.6% from Foundational to Preparatory, 92.2% from Preparatory to Middle, and 86.6% from Middle to Secondary.
- **School Infrastructure Upgrades:**
 - Schools with computers rose to 64.7% from 57.2% last year.
 - Internet connectivity reached 63.5%, up from 53.9%.
 - Electricity access is available in 93.6% of schools; safe drinking water in 99.3%.
- **Sanitation facilities are nearly universal:** girls' toilets (97.3%), boys' toilets (96.2%), handwashing stations (95.9%).
- **Inclusivity:** Schools with ramps and handrails increased to 54.9%, enhancing accessibility for children with disabilities.
- **Single-Teacher and Zero-Enrolment Schools:** Single-teacher schools declined by 6%, while zero-enrolment schools dropped by 38%.
- **Gender Representation in Teaching:** Female teachers now constitute 54.2% of the workforce.

Index of Industrial Production (IIP)

News: Industrial growth touched a four-month high of 3.5% in July 2025, as per the Index of Industrial Production (IIP) released by the Ministry of Statistics and Programme Implementation.

About Index of Industrial Production (IIP)



Figure 14. Source – KNN India

- IIP is a **monthly volume index** that measures **short-term changes in industrial output**.
- **Formula used:** The index is calculated as a **simple weighted arithmetic mean** using **Laspeyres' formula**.
- **Sectors covered:** It tracks **production in key industrial sectors** and shows whether activity is **expanding or contracting over a period**.

Factly Compilation [Fourth Week] August 2025

- IIP covers three broad sectors: **Manufacturing (77.6% weight)**, **Mining (14.4%)**, and **Electricity (8%)**.
- The **eight core industries** together account for about **40.27% of the weight of items** included in the IIP.
 - These are refinery products, electricity, steel, coal, crude oil, natural gas, cement, and fertilizers, listed in **descending order of their share**.

Sector	Base year 2011-12		Base year 2004-05	
	Weights (%)	Item groups	Weights (%)	Item groups
Mining	14.373	1	14.157	1
Manufacturing	77.633	405	75.527	397
Electricity	7.994	1	10.316	1
Total	100	407	100	399

Source – MoSPI

- **Published by:** It is published by the Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MoSPI).
 - It is compiled and published **every month, six weeks after** the reference month ends.
- **Base year:** The **current base year is 2011-12**, adopted to reflect the modern industrial structure.
 - The base has been **periodically revised** from earlier years such as **1937, 1946, 1951, and 1956**, and so on, to keep the index relevant.
- **Significance**
 - Key **high-frequency indicator** of industrial momentum.
 - Inputs for **GDP nowcasting, monetary/fiscal policy**, capacity and investment planning.
 - Used to gauge **business cycles** and sectoral performance.
- **Limitations (in the requested style):**
 - Narrow scope—excludes **services, agriculture, and much of the unorganized sector**
 - **Data-quality issues** from reporting gaps and potential inaccuracies
 - **Reliance on monthly data** that can obscure long-term trends
 - **Outdated base year/weights** over time
 - **Quality vs quantity** measurement problems for **high-value, low-volume** products
 - **Time lags and revisions**
 - **Slow basket updates**—with reforms underway to include **newer products like solar panels**

Samudrayaan Project

News: Recently, as part of preparation for this Samudrayaan Project, two Indian “aquanauts” travelled in the French vessel *Nautilus* in the Atlantic Ocean to gain deep-sea exploration experience.

About Samudrayaan Project

Source: cpr.in

- The **Samudrayaan Project** is **part of India’s Deep Ocean Mission**, which was approved by the Union Cabinet in 2021.

- **Agency involved:** The National Institute of Ocean Technology (NIOT) is the coordinating agency responsible for developing the submersible and associated technologies.
- **Aim:** To send three humans to a **depth of 6,000 m in the ocean by the year 2027**.
- **Goal:** To conduct **surveys** for mineral deposits, particularly polymetallic nodules that contain valuable materials such as nickel, cobalt, rare earth elements, manganese, and iron.
- **Objectives of the Project**
 - It seeks to **develop technologies for deep-sea mining, underwater vehicles, and robotics**, along with designing and deploying a crewed submersible.
 - It also aims to **study the impacts of climate change in the oceans and create advisory services based on models and observations**.
 - The project further intends to **explore deep-sea biodiversity and develop technologies to conserve it**.
 - It also seeks to **develop methods for generating energy and freshwater from the ocean and to establish an advanced marine station** for ocean biology and engineering research.
- **Feat:** With this mission, **India will join an elite group of countries that already have deep-sea exploration capabilities**, namely the United States, Russia, China, Japan, and France.

About Matsya-6000 (The Submersible)

- The submersible being **developed for the mission is called Matsya-6000**.
- This vehicle will **carry three aquanauts to the ocean depths**.
- It has been **designed with a personnel sphere of 2.1 metres in diameter to house the humans inside**.
- The vehicle will be **capable of sustaining three crew members for missions lasting up to 12 hours, and in case of emergencies, it can support life for up to 96 hours**.

National Biofoundry Network

News: Recently, India's first national-level biofoundry network was launched by Union Science and Technology Minister.

About National Biofoundry Network



- It is a **landmark initiative** launched to **transform the nation's biotech innovation, biomanufacturing capacity, and advancement towards a bio-based economy**.

- It was launched on **August 27, 2025**.

- **Launched under: BioE3 Policy** (Biotechnology for Economy, Environment, and Employment)

- **Implementing agency:**

It will be implemented by the Department of Biotechnology (DBT), Ministry of Science & Technology.

- **Aim:** It is aimed at making biotechnology a **driver of the economy, environment, and employment**.

- It also aims to expand **energy access** with biofuels and green technologies.
- **Composition of the Network:** The Network is comprised of **six leading institutions across India**.
 - It has been designed to **scale up proof-of-concept developments and strengthen indigenous biomanufacturing capacity**.
- **Objectives of the Network:**
 - To provide a **platform for scaling proof-of-concept solutions** into deployable technologies.
 - To **enhance indigenous biomanufacturing capacity** and reduce reliance on imports.
 - To foster **sustainable development** through biotech-driven solutions in **health, agriculture, industry, and environment**.
 - To create **employment opportunities** and strengthen India's **bio-startup ecosystem**.

BioE3 Challenge for Youth

- It is an **initiative conceptualized** under National Biofoundry Network.
- **Theme:** It is a nationwide **call to young innovators** under the theme **"Design Microbes, Molecules & More"**.
- **Aim:** The programme aims to **empower grassroots innovators**, foster youth-led change, and strengthen India's journey towards a **sustainable and self-reliant bioeconomy**.
- **Participants:** The initiative invites school students (**Classes 6–12**), **university students, researchers, faculty, startups and Indian nationals** to design **safe-by-default biological solutions** addressing challenges in **health, agriculture, environment, and industry**.
- **Challenge included:** The challenge will be **announced on the first of every month** beginning October 2025.
- **Incentives**
 - The top 10 winning solutions each will **receive a cash award of ₹1 lakh** along with **recognition and mentoring support**.
 - **100 selected awardees** will be eligible for **funding of up to ₹25 lakh**, provided in **two tranches through BIRAC**, to convert their ideas into proof-of-concept solutions.
 - These projects will also **gain access to facilities and incubation support** at **BRIC+ institutions** across India.

Daruma doll

News: Prime Minister Shri Narendra Modi was presented a Daruma doll by Rev Seishi Hirose, Chief Priest of the Shorinzan Daruma-Ji temple.

About Daruma doll



Figure 15. Source – IE

- It is an auspicious **Japanese talisman of perseverance and success**.
- It is modeled on **Bodhidharma** (Daruma Daishi), it promotes goal-setting and patience.
- **Name:** The name "Daruma" derives from the Sanskrit "**Dharma**"—meaning cosmic law or duty—reflecting its spiritual roots..
- **Historical linkage**
 - Daruma's roots **go back to** Bodhidharma, a 5th-century Indian monk from Kanchipuram

(Tamil Nadu), **who is** revered in Japan as Daruma Daishi.

- He is said to have travelled to china and Japan over a thousand years ago, **spreading Zen Buddhist philosophy.**
- His teachings inspired the figure now known as the Daruma doll.
- **Takasaki City in Gunma** became the **birthplace of these famous dolls**, tying the link to local craft.
 - The doll, therefore, shows an **India–Japan civilizational bridge** older than modern diplomacy..

- **Significance**

- **Cultural reverence:** The presentation by Rev Seishi Hirose highlights shared philosophical roots.
- **Civilizational bond:** It renews historical links and reinforces India–Japan spiritual kinship during the 15th Annual India–Japan Summit.
- **People-to-people links:** The exchange aligns with cultural MoUs, tourism exchanges, and educational collaborations focused on deeper connections.

Crocothemis Erythraea

News: Odonatologists have reconfirmed the elusive dragonfly *Crocothemis erythraea* in the high-elevation southern Western Ghats.

About *Crocothemis Erythraea*



Figure 16, Source – TH

- The scarlet dragonfly (*Crocothemis erythraea*) is a **species of dragonfly** in the family **Libellulidae**.
- Its **common names** include **broad scarlet, common scarlet-darter, and scarlet darter.**
- **Distribution:** High-elevation **Southern Western Ghats**; also **Himalayas, parts of Europe and Asia.**
 - **Migration:** Likely reached southern India during **Pleistocene cooling.**

- **Species in India:** The Indian genus has **two** species: ***C. ervilia* and *C. erythraea*.**
 - ***Crocothemis servilia***
 - **Distribution:** It is widespread in **Indian lowlands** where it is frequently recorded.
 - **Appearance:** It **resembles *erythraea*** which has been a source of past confusion.
 - ***Crocothemis erythrae*:**
 - **Names:** Broad scarlet / common scarlet-darter / scarlet darter.
 - **Appearance:** Male bright scarlet with a broad, flattened abdomen; small amber patches at hindwing bases; red leading veins.
 - **Females/immatures** yellow-brown with a pale stripe on the thorax.
 - **Significance of discovery**
 - This discovery confirms two similar dragonflies share the Western Ghats.

- It fixes past misidentifications, directs surveys to cool highlands for *erythraea*, supports protecting those habitats, and shows how Ice Age climates helped the species reach southern India.

Cashless Bail

News– Recently, President Donald Trump signed an executive order against cashless bail in the U.S., cutting federal funding to jurisdictions that permit the practice.

About Cashless Bail

- **Definition:** A system where an accused is released *without depositing money* as bail, but with conditions to ensure they appear in court.
- **Traditional Cash Bail:** Requires an accused to *deposit money or property* as surety; refunded at the end of trial if conditions are met.
- **Problem:** Cash bail disproportionately affects the poor, who may remain in jail for minor offences due to inability to pay.
- **Purpose of Cashless Bail:** To prevent unnecessary detention of individuals accused of non-violent or minor crimes, while still ensuring court attendance.

Bail System in India

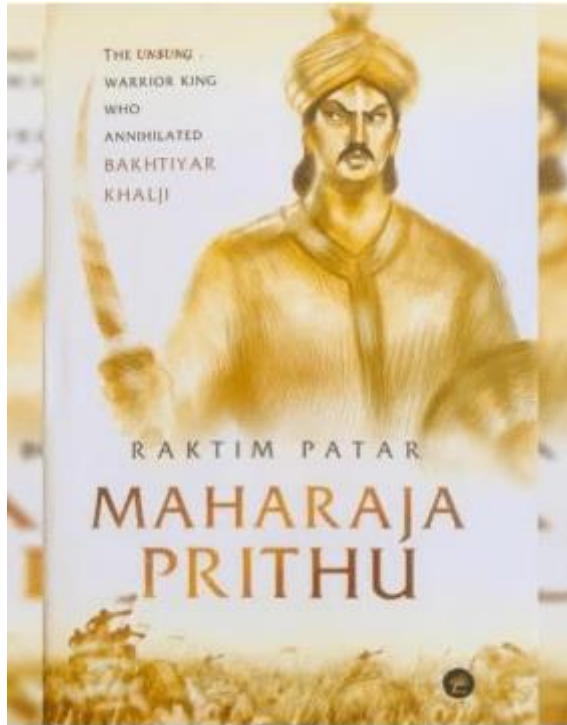
- Governed by *Chapter 35 of Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023*, replacing CrPC 1973.
- **Types of Bail Conditions:**
 - **Bond:** Accused signs an agreement (often with cash deposit).
 - **Bail Bond:** Surety from another person with financial verification.
 - **Personal Recognisance (PR) Bond:** Release without monetary deposit, based on trust that accused will return for trial.

Issues in India

- Thousands of undertrials remain in jail despite bail due to inability to furnish surety or deposit small sums.
- **Law Commission of India (268th Report, 2017):** Said bail decisions based purely on money are **contrary to constitutional ethos**.
- **Supreme Court Guidelines (2023):** If a prisoner remains in jail for over a week despite bail, jail authorities must alert *District Legal Services Authority* for assistance.

Prithu Raja Rae

News– The Assam Cabinet has resolved to name the upcoming flyover in central Guwahati after Prithu, the 13th-century ruler of Kamrup.



Source- Indian Express

About Prithu Raja Rae

- **Period of Rule:** Early 13th century, over *Kamrupa (present-day Assam)*.
- **Dynastic Lineage:** A king from the *Khen Dynasty*, which claimed descent from *Narakasura*.
- **Religious Affiliation:** The dynasty was devoted to *Goddess Kamteswari*, regarded as an incarnation of Goddess Durga.
- **Rise of the Khens:** After the decline of the *Pala dynasty*, the Khens rose as influential local chieftains and went on to establish the *Kamata Kingdom*. This realm was also referred to in different sources as *Kamru*, *Kamrud*, *Kamrupa*, *Kamata*, *Koch*, or *Koch Hajo*.

Key Contributions

- **Military Achievement:** Raja Prithu Rae successfully repelled the invasion of *Bakhtiyar Khilji*, thereby safeguarding *Kamrupa*.
- **Epigraphic Evidence:** The *Kanai Varasi rock inscription* stands as testimony to the complete destruction of the Turkish forces.
- **Ethical Warfare:** Despite his military success, he displayed magnanimity by pardoning prisoners of war and upheld the principles of *Dharma Yuddha*.

Air Quality Life Index (AQLI)

News- The 2025 edition of the Air Quality Life Index (AQLI) Annual Update has been published.



Source- Downtoearth

About Air Quality Life Index (AQLI)

- It is a scientific tool that calculates how *particulate air pollution (PM2.5)* shortens human life expectancy.
- **Developer:** Designed by Michael Greenstone, Professor at the Energy Policy Institute, *University of Chicago (EPIC)*.

Key Findings – 2025

- **India:** If air pollution were reduced to meet WHO guidelines, the average Indian could *live 3.5 years longer*, while residents of Delhi could gain 8.2 additional years—the highest in the country.
- **Global Impact:** If particulate pollution globally met WHO standards, the average person would *gain 1.9 years of life*, adding 15.1 billion life years worldwide.
- **South Asia:** Continues to hold the distinction of being the *most polluted region in the world*, with Bangladesh, India, Nepal, and Pakistan facing the steepest losses in life expectancy.