

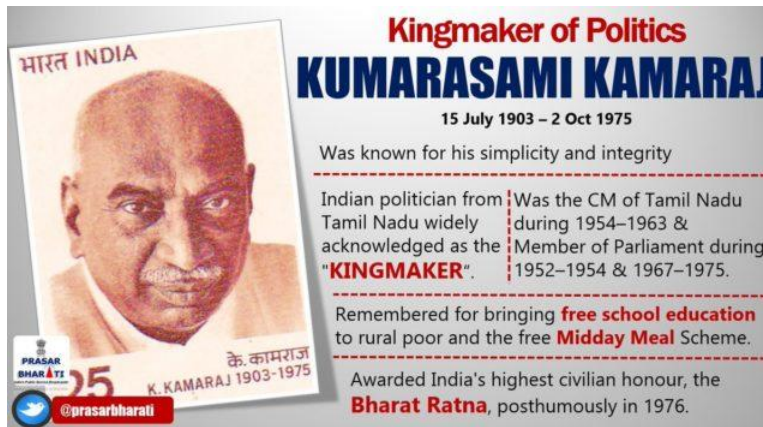
July - 19

## TNPSC BITS

- ❖ Yaktan in Pakyong district, Sikkim, has been declared India's first digital nomad village under the state's 'Nomad Sikkim' initiative.
- ❖ The India Army conducted a high-impact demonstration titled 'Prachand Shakti' at the Kharga Corps Field Training Area, in Uttar Pradesh's Meerut.
- ❖ Sudanese-Scottish author Leila Aboulela won the 2025 PEN Pinter Prize for her writing on migration, faith, and Muslim women's lives.
- ❖ Australia has launched Talisman Sabre 2025, its largest-ever joint military exercise with 19 countries, including India.
- ❖ A new Pradhan Mantri Divyasha Kendra (PMDK) will now be launched at the Government Medical College, Badaun, Uttar Pradesh.
  - It will offer integrated services like assessment, counselling, aid distribution, and post-care support for Divyangjan and elderly beneficiaries.
- ❖ The World Horse Day was observed for the first time on July 11, 2025, celebrating the historic and cultural significance of horses in human civilisation.
  - It was proposed by the Mongolian President Khurelsukh Ukhnaa on June 3, 2025, to honour horses worldwide.

## TAMIL NADU NEWS

### Educational Development Day 2025



The infographic features a portrait of K. Kamaraj on the left, with the text 'भारत INDIA' above it and 'के. कामराज 25 K. KAMARAJ 1903-1975' below it. To the right, the title 'Kingmaker of Politics' is in red, followed by 'KUMARASAMI KAMARAJ' in large blue letters. Below this, his dates '15 July 1903 – 2 Oct 1975' are listed. A quote states 'Was known for his simplicity and integrity'. A table follows with two columns: 'Indian politician from Tamil Nadu widely acknowledged as the "KINGMAKER".' and 'Was the CM of Tamil Nadu during 1954–1963 & Member of Parliament during 1952–1954 & 1967–1975.' Below the table, it says 'Remembered for bringing free school education to rural poor and the free Midday Meal Scheme.' and 'Awarded India's highest civilian honour, the Bharat Ratna, posthumously in 1976.' The bottom left corner has a Twitter logo and the handle '@prasarbharati'.

Indian politician from Tamil Nadu widely acknowledged as the "KINGMAKER".	Was the CM of Tamil Nadu during 1954–1963 & Member of Parliament during 1952–1954 & 1967–1975.
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- ❖ Tamil Nadu celebrates the Birth anniversary of K. Kamaraj (July 15th) as 'Education Day' or 'Education Development Day'.
- ❖ This day has been observed since 2006.

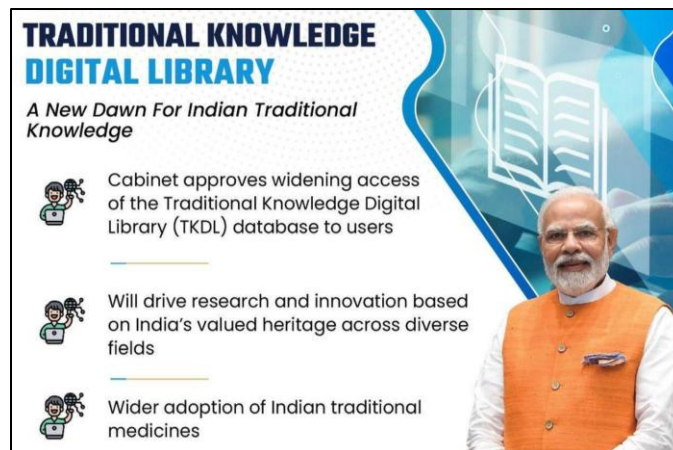


- ❖ Kamaraj was born on 15 July 1903 in Virudhupatti, Madras Presidency, to Kumaraswami Nadar and Sivakami Ammal.
- ❖ He served as the Chief Minister of Madras from 13 April 1954 to 2 October 1963.

## **Nimirnthu Nil initiative**

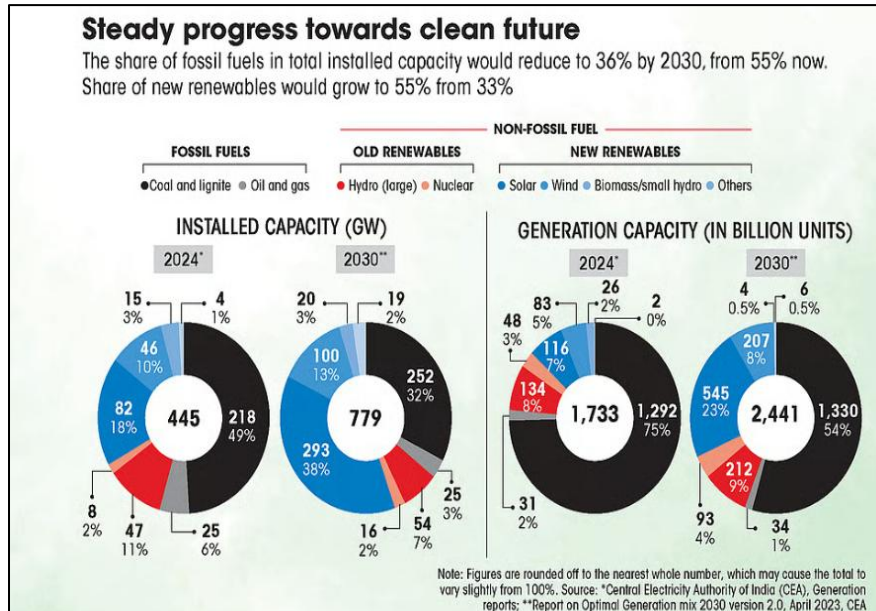
### **NATIONAL NEWS**

#### **Traditional Knowledge Digital Library**



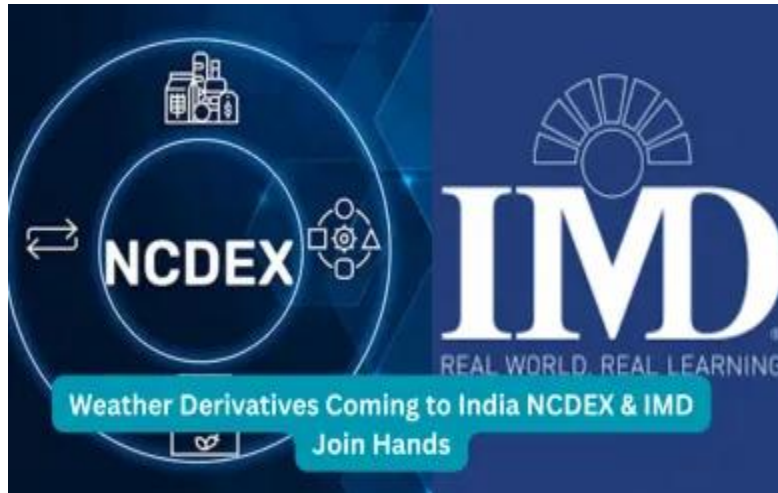
- ❖ The World Health Organization (WHO) has released a technical brief titled "the Mapping the Application of Artificial Intelligence in Traditional Medicine."
- ❖ This document acknowledges India as the first country to launch a Traditional Knowledge Digital Library (TKDL).
- ❖ India is recognized for its leadership in integrating Artificial Intelligence (AI) with traditional medicine systems, particularly with the Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (Ayush).

## 70 percent clean power by 2030



- ❖ The Round-the-clock (RTC) clean electricity matches hourly power use with zero-carbon sources like solar, wind, and battery storage.
- ❖ The RTC clean energy can save India's power grid up to ₹9,000 crore (\$1 billion) annually.
- ❖ New report shows that RTC clean energy could reduce emissions by 2.4% at 70% matching, more than double the 1% reduction achieved by annual matching.
- ❖ At 100% RTC matching, emissions cuts could reach up to 7%.
- ❖ Deploying 52 gigawatts (GW) of the RTC clean electricity capacity can serve 5% of India's projected national demand by 2030.
- ❖ The report highlights RTC clean electricity as a cost-effective, climate-smart, and future-ready solution aligned with India's goal of 500 GW non-fossil fuel capacity by 2030.

## India's first weather derivatives



- ❖ The National Commodity and Derivatives Exchange Ltd (NCDEX) signed a pact with the India Meteorological Department (IMD) to launch India's first weather derivatives.
- ❖ The agreement aims to help manage climate-related risks using market-based instruments.
- ❖ Weather derivatives will be based on rainfall and other weather data from IMD's historical and real-time datasets.
- ❖ It seeks to build a climate-resilient rural economy and reduce income volatility.

## ADEETIE scheme

- ❖ The Union Ministry of Power has launched a ₹1,000 crore Assistance in Deploying Energy Efficient Technologies in Industries and Establishments (ADEETIE) scheme.
- ❖ The event was launched in Panipat, Haryana.
- ❖ The scheme supports Micro, Small, and Medium Enterprises (MSMEs) to adopt cleaner and energy-efficient technologies.
- ❖ ADEETIE is implemented by the Bureau of Energy Efficiency (BEE).
- ❖ It offers financial and technical assistance, including:
  - Interest subvention on loans
  - Investment-grade energy audits
  - Preparation of detailed project reports (DPRs)
  - Post-implementation monitoring and verification

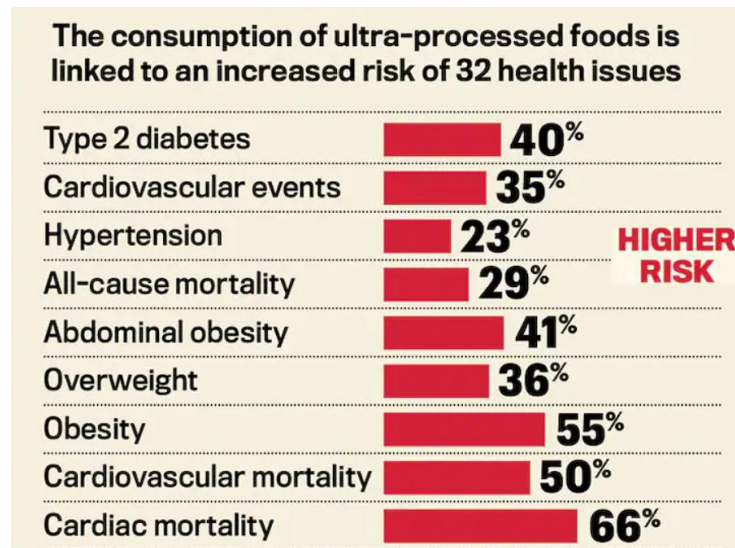
- ❖ The scheme targets 60 MSME clusters and 14 energy-intensive sectors in the first phase.

## ALL ABOUT THE SCHEME

- It is a first-of-its-kind national scheme focused on the MSME sector to promote energy-efficient technologies
- The scheme offers technical handholding, interest subvention on loans, and policy support to industries
- A dedicated web portal will be launched during the Panipat event
- Scheme supports India's climate goals, including reducing emissions intensity by 45% by 2030



### Snack nutrition campaign



- ❖ The Indian Health Ministry has launched a national campaign to promote the awareness about the nutritional content of popular snacks.
- ❖ The initiative focuses on revealing hidden sugars, oils, and trans fats in everyday Indian snack foods to combat rising lifestyle-related diseases.
- ❖ A pilot project began at the All-India Institute of Medical Sciences (AIIMS), Nagpur.
- ❖ The Popular Indian snacks like samosas, pakoras, chai biscuits, and jalebis are highlighted for their high sugar, oil, and trans-fat content.

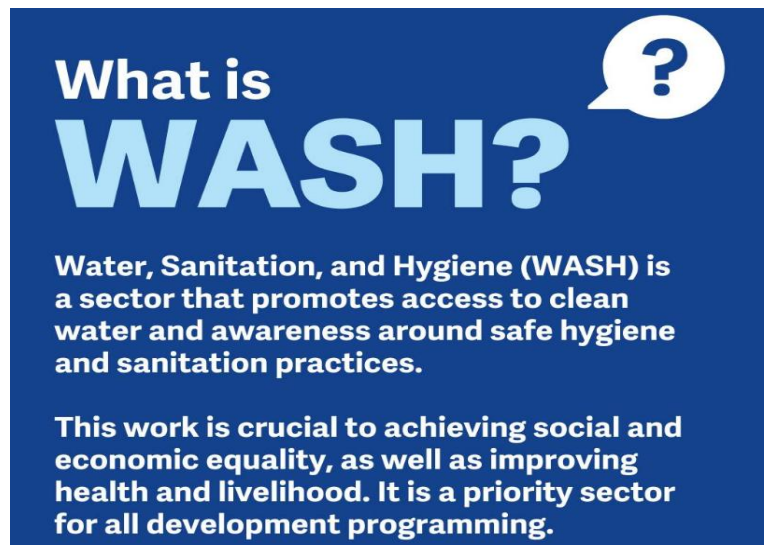


- ❖ These ingredients are linked to the obesity, diabetes, heart disease, stroke, and the cancer.
- ❖ A report by the Lancet warns that India could have around 450 million overweight or obese people by 2050, ranking second globally after China.

## INTERNATIONAL NEWS

### WASH progress tracker 2025

- ❖ The WHO and UNICEF released the 2025 WASH (Water, Sanitation and Hygiene) tracker covering 100+ countries.
- ❖ Only 17% of countries have adequate funding to improve the WASH, waste, and electricity in health care facilities.
- ❖ WASH is critical for reducing the infections like cholera, diarrhoea, sepsis, and the neglected tropical diseases.
- ❖ Linked to the Sustainable Development Goals 3 and 6, WASH access is also a recognized human right by the United Nations.
- ❖ India is recognized for strong WASH progress through initiatives like Swachh Bharat Mission, Jal Jeevan Mission, and Namami Gange.



## ECONOMY NEWS

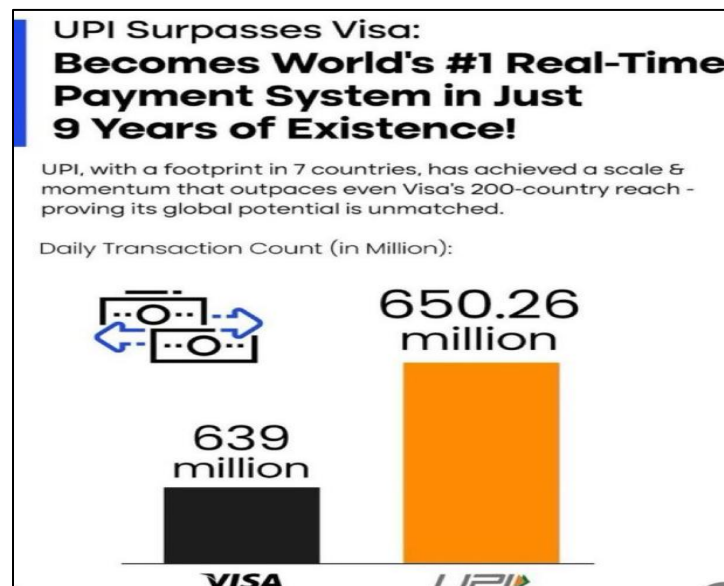
### Retail inflation of 2.10 percent

- ❖ India's retail inflation, measured by the Consumer Price Index (CPI), dropped to 2.10% in June 2025, the lowest since January 2019.

- ❖ This marks a sharp fall from 2.82% in May 2025, driven by positive base effects and easing inflation across major food categories.
- ❖ The Consumer Food Price Index (CFPI) has showed a year-on-year contraction of -1.06% (provisional) in June 2025 compared to June 2024.
- ❖ Rural CFPI-based food inflation recorded -0.92% (provisional), while urban food inflation stood at -1.22% (provisional) in June 2025.



### 650 million UPI daily transactions

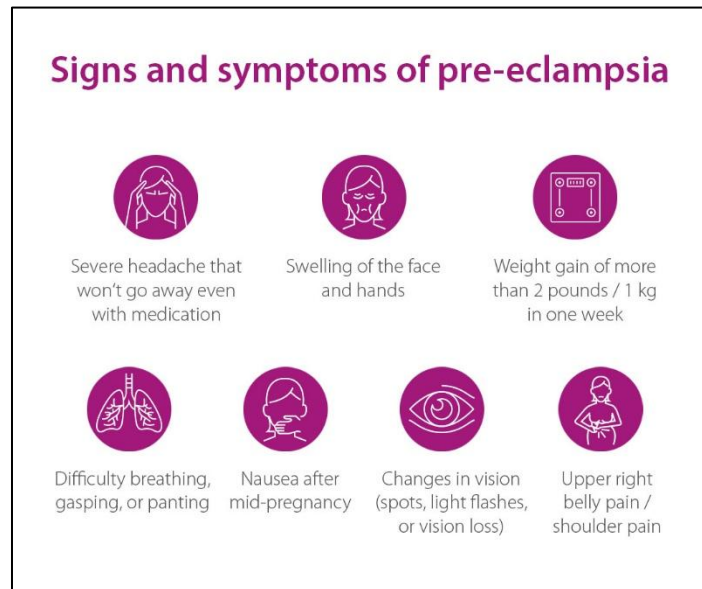


- ❖ The Unified Payments Interface (UPI) has now become the world's top real-time payment system with over 650 million daily transactions.
- ❖ UPI surpassed Visa's 639 million daily transactions despite Visa operating in over 200 countries, while UPI is active in only 7 countries.
- ❖ UPI was launched in 2016 as an instant inter-bank payment system for mobile platforms developed by the National Payments Corporation of India (NPCI).

- ❖ The UPI processes over 18 billion transactions monthly and dominates India's electronic retail payments.

## SCIENCE AND TECHNOLOGY NEWS

### Biosensor for pre-eclampsia testing

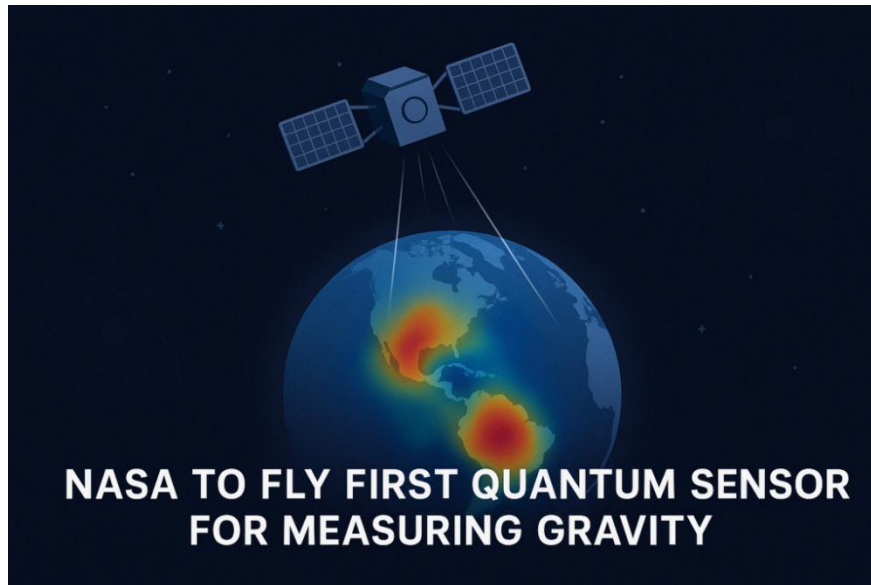


- ❖ IIT Madras-led research team develops the biosensor for pre-eclampsia testing in pregnant women.
- ❖ It has developed a point-of-care testing using fibre optics sensor technology as a possible alternative to existing technologies.
- ❖ The low-cost diagnostic test has the potential to be used to detect other diseases such as cancer and Alzheimer's.
- ❖ Pre-eclampsia, which can lead to eclampsia if left untreated, is a life-threatening condition that occurs during pregnancy.
- ❖ Eclampsia poses significant risks to both pregnant women and newborns.
- ❖ The current methods to detect pre-eclampsia are time-consuming and require a lot of infrastructure and trained personnel.

### Quantum Gravity Gradiometer

- ❖ A team of NASA scientists has proposed the deployment of a Quantum Gravity Gradiometer (QGG) onboard a satellite in low-Earth orbit.
- ❖ It aims to detect minute gravitational variations on Earth.

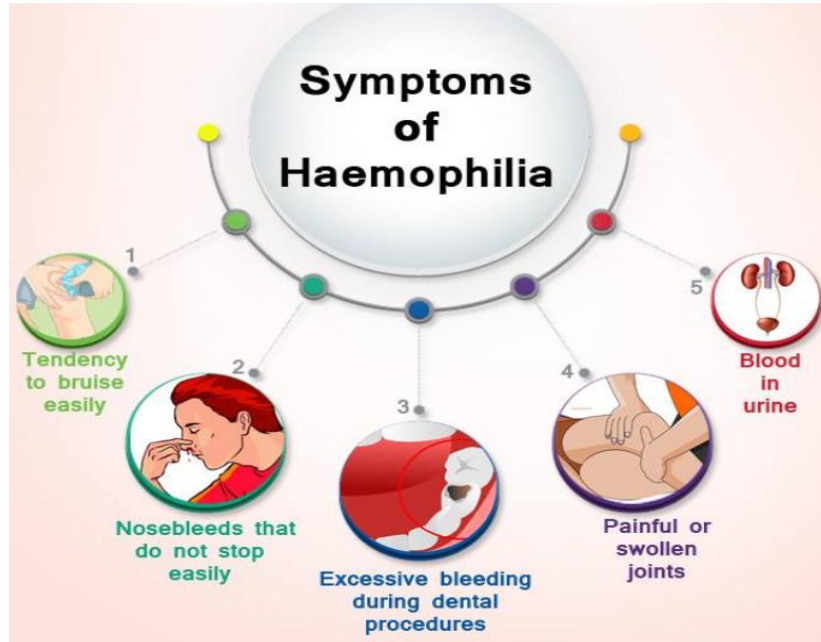
- ❖ It would allow for precise monitoring of the planet's subsurface mass distribution, aiding in climate studies and enhancing national security.
- ❖ It is a highly sensitive scientific instrument used to measure the variation in the gravitational acceleration over a specific distance.
- ❖ Based on the Newton's second law ( $F = ma$ ), the Gravity Gradiometer detects the variations in gravitational force and acceleration caused by changes in local mass distribution.



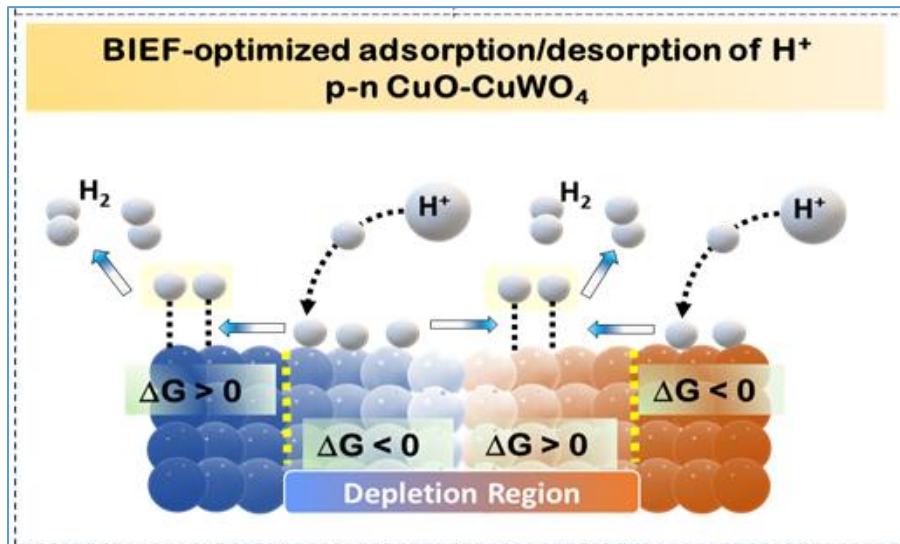
### **Gene Therapy for Haemophilia**

- ❖ The Indian scientists develop novel gene therapy treatment for haemophilia.
- ❖ Haemophilia A, a rare hereditary condition, is resulting from a faulty gene.
- ❖ It triggers severe, spontaneous, and potentially fatal bleeding episodes.
- ❖ Though only tested on five patients in Tamil Nadu so far, none of them have reported bleeding episodes over an average follow-up period of 14 months.
- ❖ It is not unusual for those afflicted by haemophilia to have the weekly bleeding episodes, requiring frequent treatment.
- ❖ A gene introduced into the body teaches it to create enough of the clotting factor that can prevent such haemorrhage.
- ❖ Haemophilia can be classified as minor or severe depending on the percentage of clotting factor present in those afflicted.
- ❖ Haemophilia A, the more common version of the condition, is caused by the absence of a blood-clotting factor called Factor VIII.

- ❖ Even though haemophilia is a rare disorder, India has the world's second largest patient pool, with an estimated 40,000 to 100,000 patients.
- ❖ There is only one gene therapy — Roctavian — which was approved by the U.S. Food and Drug Administration for commercial use in 2023.



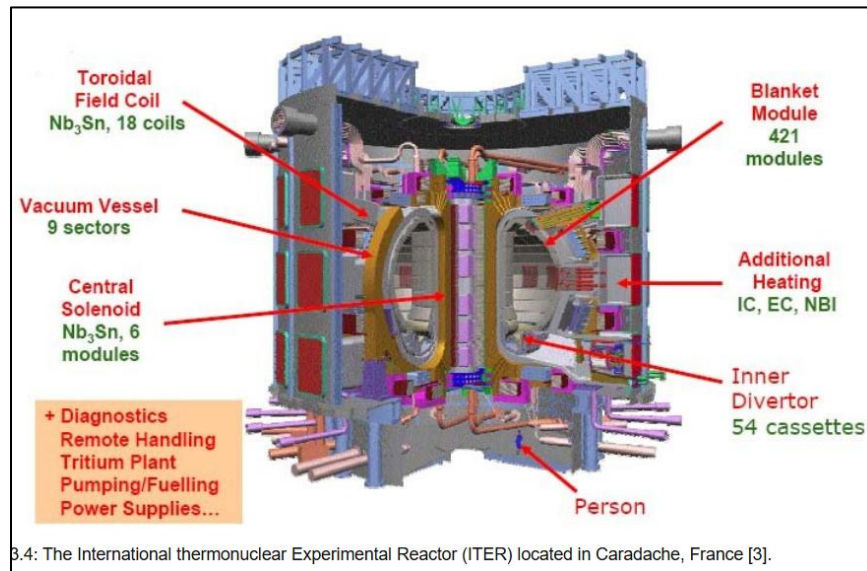
### Green hydrogen generation with the effect of BIEF



- ❖ Researchers at the Institute of Nano Science and Technology (INST), Mohali, have developed new insights into proton adsorption on catalyst surfaces.
- ❖ It will be paving the way for more efficient green hydrogen production.

- ❖ A novel heterostructure, combining Copper Tungsten Oxide ( $\text{CuWO}_4$ ) and Copper Oxide ( $\text{CuO}$ ), has been created to exploit the Built-In Electric Field (BIEF) effect for enhanced hydrogen evolution.
- ❖ This BIEF plays a crucial role in modulating proton adsorption and desorption, directly influencing the Hydrogen Evolution Reaction (HER) efficiency.
- ❖ A Green Hydrogen is produced through the electrolysis of water using renewable energy sources like solar, wind, or hydropower, releasing no greenhouse gases.

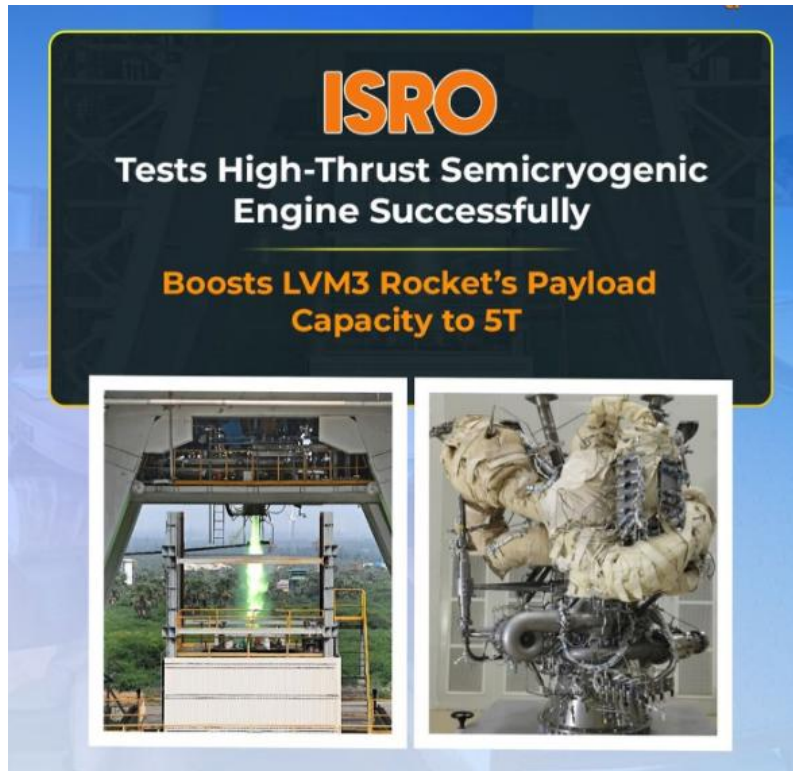
### Superconducting fusion magnet system – ITER



- ❖ The world's largest and most powerful device being built for clean energy reached an important milestone in 2025.
- ❖ The International Thermo-Nuclear Experimental Reactor (ITER) Project is now currently under construction in a 180-hectare site in Southern France.
- ❖ Over 30 countries, including India, are collaborating to build the world's largest tokamak.
- ❖ It is a magnetic fusion device to prove the feasibility of nuclear fusion as a large-scale and carbon-free source of energy.
- ❖ Nuclear fusion generates energy through merging of two light nuclei to form a single heavier nucleus.
- ❖ Fusion reactions power the Sun and other stars.
- ❖ ITER aimed at demonstrating that nuclear fusion can be a safe, carbon-free, and sustainable energy source.
- ❖ It uses the deuterium and tritium (hydrogen isotopes) to undergo the fusion at temperatures over 150 million °C.

- ❖ Its goal is to achieve a fusion gain (Q) of 10, producing 500 megawatts of fusion power from just 50 megawatts of input heating power, a 10x gain.

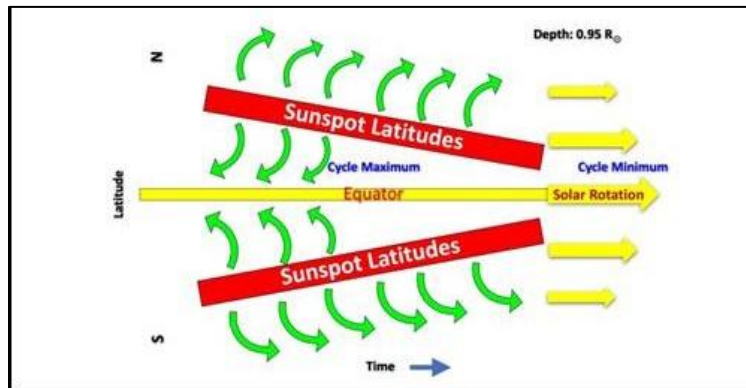
### **ISRO's second short hot test of semi-cryogenic engine**



- ❖ The ISRO has successfully conducted a short duration hot test of the semi-cryogenic engine at ISRO Propulsion Complex (IPRC), Mahendragiri.
- ❖ This test involves briefly firing the engine using actual fuel to verify its ignition and performance under real operating conditions.
- ❖ In this test, the Engine Power Head Test Article, encompassing all engine systems except the thrust chamber.
- ❖ The thrust chamber was subjected to a hot test for a duration of 3.5 seconds.
- ❖ That validated the engine start-up sequence.
- ❖ During the test, the engine was successfully ignited and operated up to 60% of its rated power level, demonstrating stable and controlled performance.
- ❖ The Semi Cryogenic Engine is a liquid rocket engine that uses liquid oxygen (LOX) as an oxidizer and refined kerosene (RP-1) as fuel.
- ❖ It was designed to power the booster stages of future heavy-lift launch vehicles.
- ❖ Semi-cryogenic engine's LOX-kerosene combination offers higher density impulse than cryogenic systems, enhancing propulsion performance.

- ❖ Additionally, kerosene is cheaper and easier to handle than the liquid hydrogen, reducing costs and simplifying operations.
- ❖ It will boost ISRO's payload capacity and support future launch vehicles like the Next Generation Launch Vehicle (NGLV).

### Near-Surface Shear Layer (NSSL)

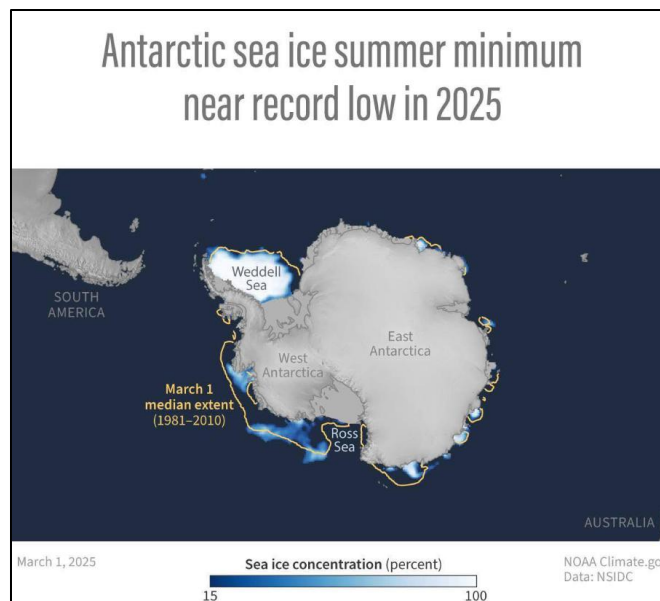


- ❖ An international team of solar physicists, including the scientists from the Indian Institute of Astrophysics (IIA), has mapped dynamic plasma currents in the Sun's Near-Surface Shear Layer (NSSL).
- ❖ It is revealing patterns that correlate with the Sun's 11-year magnetic activity (sunspot) cycle.
- ❖ The plasma currents shift with the Sun's magnetic heartbeat and could have a far-reaching influence on space weather and Earth.
- ❖ They employed helioseismology methodology to observe changes in the movement of solar material.
- ❖ It is an advanced technique that tracks sound waves as they travel through the Sun.
- ❖ The Near-Surface Shear Layer (NSSL) is a crucial region located just beneath the Sun's visible surface, extending to a depth of about 35,000 km.
- ❖ In the NSSL, the Sun's angular velocity (a rotation speed) decreases rapidly with the radius, creating a rotational shear that varies with depth, latitude, and solar magnetic activity.
- ❖ The study revealed surface plasma flows converge towards sunspot latitudes but reverse midway in the NSSL and flow outward, forming large circulation cells.
- ❖ These flows are shaped by the Sun's rotation and the Coriolis force, which also influences Earth's hurricanes.

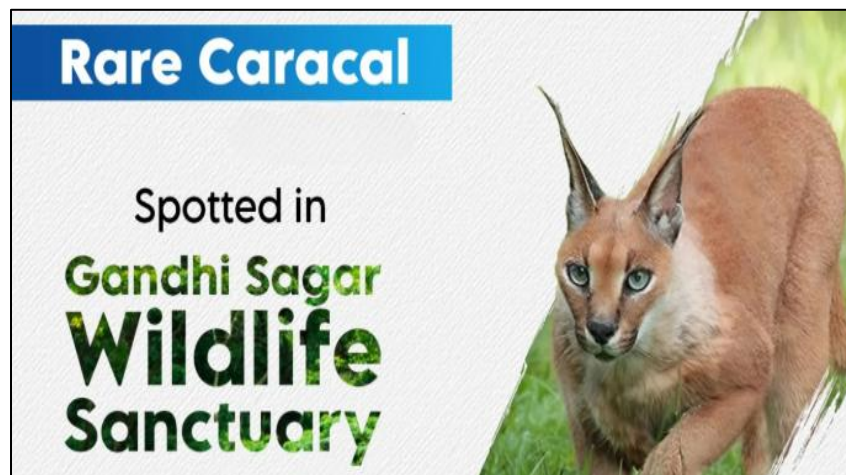
## ENVIRONMENT NEWS

### Antarctic ice meltdown

- ❖ Antarctic summer sea ice has hit record lows for four consecutive years.
- ❖ In March 2025, a 70% reduction in sea ice was recorded near Denman Glacier.
- ❖ Over 50% of the Antarctica's coastline was exposed in 2022 and 2023, doubling iceberg formation.
- ❖ Entire colonies of emperor penguins faced breeding failures, and seals struggled to find stable ice platforms.
- ❖ Shrinking sea ice is also disrupting resupply missions to Antarctic bases.



### Caracal in Madhya Pradesh



- ❖ A rare caracal was spotted inside the Gandhi Sagar Wildlife Sanctuary, Madhya Pradesh, for the first time in almost 20 years.
- ❖ Caracals are medium-sized wild cats native to Africa, the Middle East, Central Asia, and parts of India.
- ❖ They are nocturnal, solitary hunters preferring dry scrublands, semi-arid zones, and moist woodlands.
- ❖ The species is listed as threatened under Schedule I of the Wildlife (Protection) Act, 1972 in India.

### **New Dragonfly Species in Western Ghats**



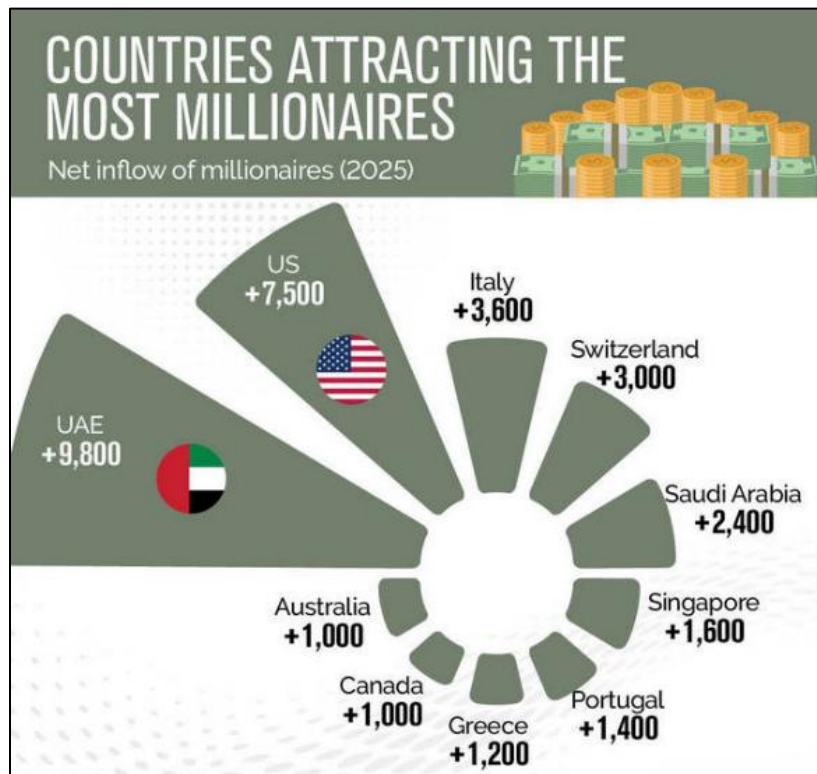
- ❖ A new dragonfly species named *Lyriothemis abrahami* has been discovered in the Western Ghats.
- ❖ The dragonfly was named in the very honour of Abraham Samuel, a well-known odonatologist from Kerala.
- ❖ It is endemic to the southern and central Western Ghats and found in lowland rainforests as well as mid-elevation evergreen and deciduous forests.
- ❖ With this addition, Kerala's odonate (dragonflies and damselflies) species count has risen to 191, with 78 species found only in the region.

## **REPORTS AND INDICES**

### **Millionaire Migration Report 2025**

- ❖ The Henley Private Wealth Migration Report 2025 reveals a record 142,000 millionaires, or high-net-worth individuals (HNWIs), are relocating globally this year.

- ❖ India ranks 57th globally, with a net outflow of about 3,500 millionaires.
- ❖ The United Arab Emirates (UAE) tops the list, attracting some 9,800 millionaires, followed by the United States (7,500) and Italy (3,600).
- ❖ Saudi Arabia is the fastest-growing destination, gaining 2,400 millionaires due to returning citizens and foreign investors.
- ❖ The United Kingdom leads in the millionaire losses with an outflow of 16,500, followed by China with 7,800.
- ❖ Despite migration, India's millionaire population has grown 72% from 2014 to 2024, showing strong domestic wealth creation.



## STATES' NEWS

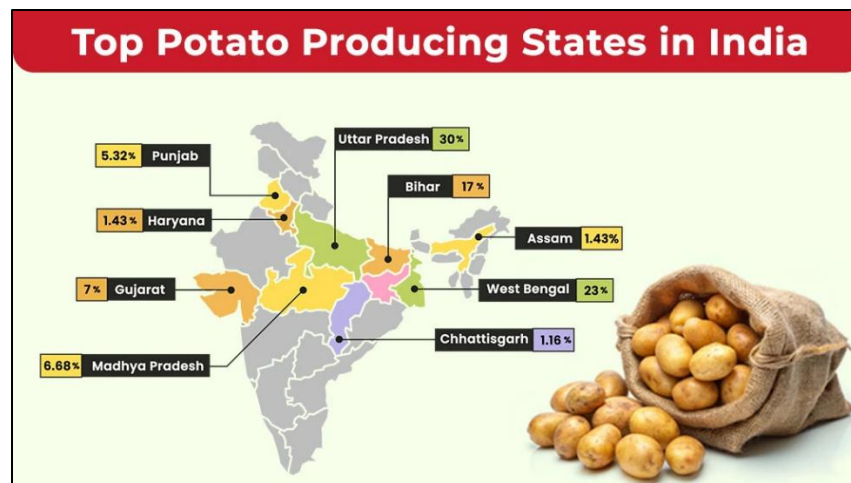
### U-shaped classroom - Kerala

- ❖ The Kerala state schools are replacing traditional backbench seating with U-shaped arrangements to promote inclusivity and participation.
- ❖ The U-shaped layout places the students around the teacher in a semicircle, ensuring direct visibility for all.
- ❖ This setup reduces classroom hierarchies and minimises distractions common in the back rows.



### Processed potato production in 2024–25

- ❖ Gujarat has become India's leading producer of processed potatoes used for the French fries and chips in 2024–25.
- ❖ Banaskantha district leads Gujarat in processed potato production for the third consecutive year.
- ❖ It was producing 18.70 lakh tonnes from over 61,000 hectares in 2024–25.
- ❖ This is an increase from 15.62 lakh tonnes produced in 2023–24.
- ❖ Banaskantha's productivity is 30.65 tonnes per hectare, meeting high demand for French fry-quality potatoes.
- ❖ Other major producing districts include Sabarkantha with 12.97 lakh tonnes and Aravalli with 6.99 lakh tonnes.



## PERSONALITIES, AWARDS, AND EVENTS

### Fauja Singh



- ❖ Fauja Singh, believed to be the world's oldest distance runner, has died recently.
- ❖ Singh, an Indian-born British national, is nicknamed the "Turbaned Tornado".
- ❖ In 2011, Fauja Singh, at the age of 100, achieved eight world age-group records in a single day.
- ❖ He was awarded the Ellis Island Medal of Honour by the National Ethnic Coalition in 2003 for being a symbol of racial tolerance.
- ❖ He was the first non-American to receive the honour.
- ❖ Fauja Singh was also awarded the Pride of India title in 2011.

## IMPORTANT DAYS

### World Population Day 2025 - July 11

- ❖ This day aims to raise awareness about concerns such as family planning, gender equality, maternal health, poverty, and human rights, especially as population growth impacts sustainable development.
- ❖ It was established by the United Nations Development Programme (UNDP) in 1989.

- ❖ The "Five Billion Day" was observed on July 11, 1987, when the global population hit five billion.
- ❖ Theme for 2025 is "Empowering young people to create the families they want in a fair and hopeful world."

