

E-MAGAZINE

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EXAMS	POST	LAST DATE
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NICL	500	7 Aug 2026
ISRO	244	16 Aug 2026
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Himanshu



Aditya Uppal
IAS, Rank 19

I came to bharti sir when I was at the crossroads of my career. It was his motivation coupled with guidance that I took the decision to appear for the civil services and finally cracked it in my very first attempt. I owe my success to him a lot. Thank you sir for being the guiding light for me and many others like me. Aditya uppal (civil services exam 2013 AIR 202) (Indian revenue service)

1:54 pm



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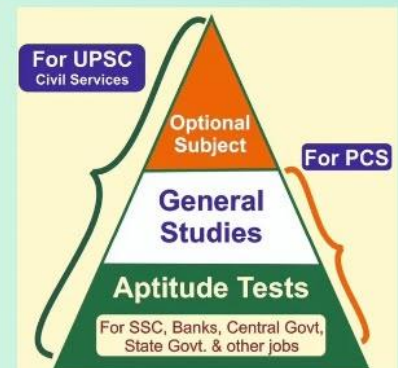
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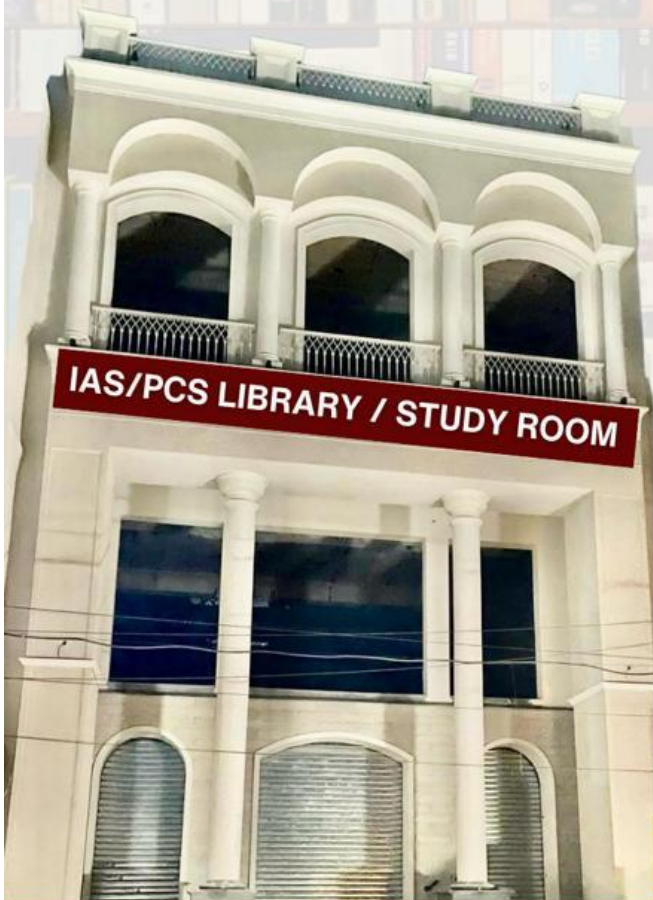
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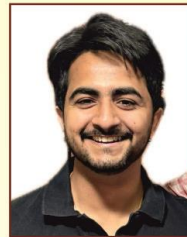
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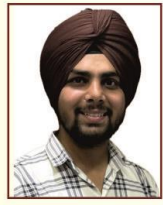
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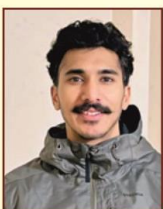
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- IBPS - RRB PO & Clerk
- IBPS - Specialist Officer
- SBI - PO & Clerk
- RBI - Officer & Assistant
- NABARD - Grade A & B
- SEBI - Grade A Officer

Insurance Exams

- LIC AAO & Assistants
- GIC AO & Assistants

State Govt. Exams

- Food & CS Inspectors
- Co-operative Inspectors
- High Court Clerks
- Taxation Inspectors
- Police SI & Constables
- PUDA, GLADA & PSPCL
- Tehsil Welfare Officer etc.
- Revenue Patwari
- Naib Tehsildar
- Municipal Corporation
- Agricultural Devt. Officer
- Labour Inspector
- Section Officer

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- SSC - CGL
- SSC - CHSL for +2
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- EPF Clerk
- EPF Asstt. Commissioner
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1. NATIONAL NEWS

1. India Approves 1ST Offshore Airport in Maharashtra



Why in News?

The Maharashtra Government has approved a Detailed Project Report (DPR) for the proposed Palghar Offshore Airport Project, marking a significant step towards establishing India's first offshore airport.

DPR Approved: Maharashtra Chief Minister Devendra Fadnavis approved the preparation of a Detailed Project Report (DPR) after a favourable pre-feasibility study and site inspection.

The airport has been proposed to support the development of the Vadhvan Port project and is being implemented under the supervision of the Maharashtra Airport Development Corporation. The project is expected to become India's first offshore airport.

Location: The proposed offshore airport is planned near Kore Beach in Palghar district, Maharashtra, in the Arabian Sea.

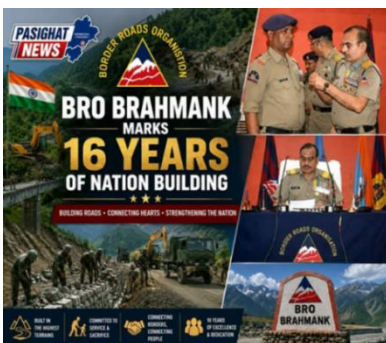
Objective: The project aims to strengthen the Mumbai Metropolitan Region (MMR) economy, unlock investment opportunities in Palghar, and promote the development of a new economic growth corridor north of Mumbai.

Offshore Airport: An offshore airport is constructed on reclaimed land or artificial islands in the sea rather than on the mainland.

Infrastructure: The proposed airport is around 4.75 km from the Uttan–Virar Sea Link, and extending the sea link up to the airport would ensure seamless connectivity with Mumbai and the airports in Mumbai and Navi Mumbai.

The model has been effectively implemented in countries like Japan, Hong Kong, and South Korea to overcome land scarcity and establish large-scale aviation hubs.

2. Project BRAHMANK Marks 16th Raising Day



Project BRAHMANK of the Border Roads Organisation (BRO) celebrated its 16th Raising Day on 29 June 2026 at Ranaghat, Arunachal Pradesh, marking fifteen years of service in developing strategic infrastructure and enhancing connectivity in the region.

Key Points

Establishment: Project BRAHMANK was raised on 29 June 2011 at Ranaghat, East Siang district, Arunachal Pradesh, and became fully functional on 3 December 2011.

The project is responsible for the development and maintenance of strategic road infrastructure across Siang region and Shi-Yomi districts of Arunachal Pradesh, along with parts of Dhemaji district in Assam.

Major Achievements: Constructed the 100-metre steel arch bridge over Siyom Nallah and the 165-metre PSC bridge over Simang Nallah on the Along–Yingkiong Road.

Inaugurated 13 bridges (390-metre cumulative span), completed 61 km of road blacktopping to NHDL standards, and developed helipads to enhance strategic connectivity.

Strategic Importance: Project BRAHMANK plays a vital role in providing strategic and operational connectivity to the Armed Forces while improving road access for remote villages in the region.

3. Sardar Sarovar Project Dispute Settlement



Why in News?

The states of Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan have signed a one-time settlement agreement to resolve long-pending financial disputes related to the Sardar Sarovar Project (SSP), marking a significant step towards cooperative federalism.

Background

The disputes primarily revolved around cost-sharing, resettlement and rehabilitation (R&R) expenses, and interest liabilities incurred during the construction of the Sardar Sarovar and Indira Sagar projects. As part of the settlement, Gujarat has agreed to increase its share of the project cost from 50% to 75%, reducing the financial burden on Madhya Pradesh.

About the Sardar Sarovar Project

The Sardar Sarovar Project is a terminal concrete gravity dam built across the Narmada River near Navagam, Gujarat, close to the Statue of Unity.

Conceived in 1946 by Sardar Vallabhbhai Patel, the project gained momentum after Jawaharlal Nehru laid its foundation stone in 1961. It is among India's largest multipurpose river valley projects and benefits Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan.

The project provides:

- Irrigation to drought-prone regions.
- Drinking water supply.
- Hydroelectric power generation.

4. Narmada Water Disputes Tribunal (NWDT)

The Narmada Water Disputes Tribunal (NWDT) was constituted in 1969 under the Inter-State River Water Disputes Act, 1956.

Its 1979 award determined the sharing of Narmada's waters and hydropower among the four beneficiary states. While water and power allocations were settled, financial issues relating to compensation, rehabilitation, and infrastructure costs continued until the recent agreement.

Narmada River



- Originates from the Amarkantak Plateau in Madhya Pradesh.
- Flows westward for about 1,312 km before emptying into the Gulf of Khambhat (Arabian Sea) in Gujarat.
- It is one of India's major west-flowing rivers and drains a basin of nearly 98,800 sq. km.

5. Chita Andolan (Pyre Protest)



Why in News?

The Chita Andolan (Pyre Protest) has resurfaced in Madhya Pradesh, where people affected by the Ken–Betwa Link Project are protesting against alleged delays in compensation, rehabilitation, and resettlement.

About

The Chita Andolan is a symbolic, non-violent protest in which displaced families sit beside funeral pyres to convey that the loss of their land, homes, forests, and livelihoods is akin to social death. Through this protest, they seek timely rehabilitation and fair compensation before displacement.

Key Highlights: The movement is led largely by tribal communities, particularly women affected by the Ken–Betwa Link Project.

Protesters demand:

- Timely payment of compensation.
- Proper rehabilitation and resettlement.
- Adequate housing and rehabilitation benefits before displacement.

The protest also raises concerns over:

- Loss of forests and traditional livelihoods.
- Ecological impacts on the Ken River.
- Potential effects on the Panna Tiger Reserve.

Why is it Significant?

The protest highlights the need to ensure that infrastructure development is accompanied by fair rehabilitation, environmental safeguards, and protection of the rights and livelihoods of affected communities, particularly tribal populations.

6. Medical Innovations Patent Mitra Initiative**Why in News?**

The National Medical Commission (NMC) has advised all medical colleges and healthcare institutions to utilise the Medical Innovations Patent Mitra platform developed by the Indian Council of Medical Research (ICMR) to promote innovation and intellectual property protection in the healthcare sector.

About the Initiative

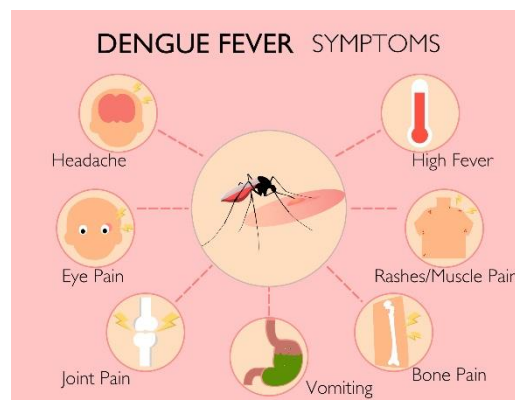
The Medical Innovations Patent Mitra is a centralized digital platform that provides comprehensive support for patenting and commercialising medical innovations developed by researchers, clinicians, faculty members, and students.

Developed by the ICMR, the initiative aims to reduce the financial and procedural barriers associated with patent filing and facilitate the translation of research into market-ready healthcare solutions.

Key Features

- Provides government-funded support for patent filing, legal drafting, prosecution, and maintenance of patents.
- Offers assistance to:
 - Researchers under ICMR-funded projects.
 - Faculty, clinicians, and students of recognised medical colleges.
 - DPIIT-recognised biomedical startups.
 - Independent medical innovators.
- Facilitates prior-art searches and expert evaluation to assess the novelty of inventions.
- Supports innovators throughout the patent lifecycle, including responding to examination reports and managing patent-related proceedings.
- Promotes technology transfer and commercialisation by connecting innovators with pharmaceutical and medical device industries.

7. QDENGGA: India's First Dengue Vaccine



Why in News?

India has approved QDENGGA (TAK-003), its first dengue vaccine, providing a major boost to dengue prevention as the country continues to face one of the world's highest dengue burdens.

About QDENGGA

QDENGGA (TAK-003) is a recombinant, live-attenuated, tetravalent dengue vaccine developed by Takeda. It is designed to provide protection against all four serotypes of the dengue virus (DENV-1, DENV-2, DENV-3 and DENV-4).

The vaccine is manufactured by Takeda GmbH (Germany) and will be imported into India by Takeda Biopharmaceuticals India.

The Central Drugs Standard Control Organisation (CDSCO) granted marketing approval after evaluating its quality, safety, and efficacy, under the Drugs and Cosmetics Act, 1940 and the Drugs Rules, 1945.

Key Features

- Eligible Age Group: Approved for individuals 4–60 years of age.
- Can be administered regardless of previous dengue infection.
- Does not require prior blood testing, unlike some earlier dengue vaccines.
- Protects against all four dengue virus serotypes, reducing the risk of severe dengue upon subsequent infections.
- Has received WHO prequalification and is approved in more than 40 countries.
- Over 32 million doses have been distributed globally.

About Dengue

Dengue is a mosquito-borne viral disease caused by the dengue virus (Genus: Flavivirus) and is transmitted primarily by the female *Aedes aegypti* mosquito. The same mosquito also spreads chikungunya, Zika, and yellow fever.

There are four distinct serotypes of the dengue virus:

- DENV-1
- DENV-2
- DENV-3
- DENV-4

Common Symptoms:

- Sudden high fever
- Severe headache
- Pain behind the eyes
- Muscle, joint, and bone pain
- Skin rash

8. Angen: First Santhali Film to Win a National Film Award**Why in News?**

Angen (Invisible), a Santhali-language short film, has created history by becoming the first Santhali film to win a National Film Award. At the 72nd National Film Awards, director Ravi Raj Murmu received the Best Debut Film of a Director (Non-Feature Category) award.

Angen is a 12-minute 10-second short film inspired by a traditional Santhali folktale. Written and directed by Ravi Raj Murmu, an FTII graduate from Jharkhand, the film narrates the story of a shepherd boy whose flute music attracts a celestial deity. After returning from the heavenly realm, he finds his village missing, symbolising the migration of rural youth to cities and the gradual loss of language, culture, and identity in the pursuit of development.



Featuring local Santhali artists and original Santhali folk music, the film highlights the importance of preserving indigenous heritage while embracing modernity. Its National Award is a landmark achievement for Santhali cinema, bringing national recognition to tribal-language films and encouraging the preservation of indigenous folklore and storytelling through cinema.

9. RajmargYatra App: Digital Local Pass & MargMitra Help Centre**Why in News?**

The National Highways Authority of India (NHAI) has introduced two new digital services on the RajmargYatra Mobile App—the Digital Local Pass and the MargMitra Help Centre—to enhance convenience and improve digital services for National Highway users.

The Digital Local Pass enables eligible commuters residing within a 20 km radius of a toll plaza to purchase their monthly toll pass online through the RajmargYatra App, eliminating the need to visit the toll plaza physically. The service has been launched initially at the Mundka–Bakkarwala Toll Plaza on Urban Extension Road-II (UER-II), Delhi, and will be expanded to other toll plazas. The system uses DigiLocker, VAHAN, FASTag, and GIS-based verification to authenticate eligibility digitally.

NHAI has also launched MargMitra, an AI-enabled digital help centre integrated into the app. It allows users to seek information, register grievances, track complaint status, recharge FASTag, check refund status, verify FASTag blacklisting, view pending e-notices, and report road safety issues through a conversational interface available in 22 Indian languages. These initiatives support the Digital India programme by making highway travel more transparent, efficient, and citizen-centric.

10. India's First Immersive Language Museum – Shabdlok



Why in News?

India's first immersive language museum, the Museum of Word (Shabdlok), has been inaugurated at the National Library campus, Kolkata.

Shabdlok has been developed by the National Library under the Ministry of Culture to showcase India's rich linguistic heritage through interactive and technology-driven exhibits. Unlike a conventional museum, it offers an immersive experience using digital displays, holograms, motion-sensor technology, and multimedia installations. The museum features nine galleries highlighting the evolution of Indian languages, scripts, literature, and the transition from oral traditions and ancient manuscripts to printed and digital texts.

The museum celebrates India's 22 official languages and enables visitors to explore how words, pronunciation, meanings, and scripts have evolved over time. By combining language, culture, and technology, Shabdlok aims to preserve India's linguistic diversity while promoting awareness of the country's literary and cultural heritage.

11. Pashujanya Yudh Abhyas (PYA)

Why in News?

The Department of Animal Husbandry & Dairying (DAHD) conducted Pashujanya Yudh Abhyas (PYA), a national-level mock drill under the National One Health Mission, to strengthen India's preparedness for animal health emergencies and zoonotic disease outbreaks.

About Pashujanya Yudh Abhyas (PYA)

Pashujanya Yudh Abhyas (PYA) is a multi-sectoral preparedness exercise designed to test India's emergency response mechanism for zoonotic diseases under the One Health approach. The third edition was held from 29 June to 3 July 2026 at Khari village, Vidisha district, Madhya Pradesh. The exercise simulated an Influenza A (H1N1) outbreak in animals with the potential to spread to humans and wildlife.

The mock drill assessed the entire response chain, including disease surveillance, early warning, outbreak investigation, sample collection, laboratory diagnosis, risk assessment, biosecurity, containment measures, movement control, and public communication. It

involved coordinated participation from DAHD, ICAR, ICMR, NCDC, NIHSAD, AIIMS Bhopal, MoEF&CC, and state and district authorities, demonstrating the importance of the One Health approach in managing zoonotic diseases.

One Health Approach

The One Health approach recognises that the health of humans, animals, and the environment is interconnected. It promotes coordinated action among multiple sectors to prevent, detect, and respond effectively to diseases that spread between animals and humans (zoonoses).

12. ICMR to Set Up India's First High-Altitude Medicine Centre



The Indian Council of Medical Research is establishing India's first dedicated centre for high-altitude medicine and public health research in Himachal Pradesh. The ICMR Centre for High Altitude Medicine and Public Health Research will come up at Keylong in the Lahaul and Spiti district and will upgrade the existing ICMR field station into a multidisciplinary research hub.

Keylong is the headquarters of Lahaul and Spiti district in Himachal Pradesh and lies at high altitude in the western Himalayas. The new centre will function as a research, innovation, and capacity-building facility under the Indian Council of Medical Research, which is India's apex body for

biomedical research.

The centre will work with the Armed Forces Medical Services, the Defence Research and Development Organisation, the Himachal Pradesh Government, and academic institutions. Such collaboration links civilian health research with defence medicine, mountain logistics, and field-based scientific studies.

13. India's First Air-Filled Rubber Dams



Gujarat is constructing its first two air-filled rubber dams across the Heran River in Chhota Udepur district and the Ambika River in Tapi district. The projects use South Korean technology and are designed for water storage, irrigation, and flood management.

Air-Filled Rubber Dam

An air-filled rubber dam is a flexible hydraulic structure made of a rubber bladder anchored across a river or canal. The bladder is inflated with air or water to raise the water level and deflated during high flows to allow water and silt to pass.

Project Locations and Cost

The Rajvasana Rubber Dam is being built at Rajvasana village in Chhota Udepur district, and the Pathakwadi Rubber Dam is being built at Pathakwadi village in Tapi district. The combined cost of the two projects exceeds ₹162 crore, with the Rajvasana project costing over ₹82.97 crore and the Pathakwadi project costing over ₹79.13 crore.

2. STATE NEWS

14. HP : 8 Newly GI-Tagged Products

Eight traditional products of Himachal Pradesh have been granted Geographical Indication (GI) status, increasing the state's total number of GI-tagged products to 17.

Product	District/Region	Specialty
Seabuckthorn (Chharma)	Spiti	Nutrient-rich wild berry
Salooni Safed Makka	Chamba	Traditional white maize
Chamba Metal Art	Chamba	Handcrafted brass & copper artefacts
Sirmauri Loiya	Sirmaur	Handwoven woollen shawl
Kinnauri Topi	Kinnaur	Traditional velvet-banded cap
Sepuvadi	Mandi	Traditional lentil-based dish/cake
Kinnauri Apple	Kinnaur	High-altitude apple with long shelf life
Kinnauri Jewellery	Kinnaur	Intricate handcrafted silver jewellery

Fact about GI Tags:

The Geographical Indications of Goods (Registration and Protection) Act, 1999 provides for the registration and protection of Geographical Indications (GIs) in India.

Implementing Agency: The GI registrations were secured through the Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE).

GI registration in India is administered by the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry.

A registered GI enjoys legal protection for a period of 10 years and can be renewed thereafter.

15. Sirsa Kinnow Receives GI Tag, Becomes Haryana's First Fruit with Geographical Indication Recognition

Haryana's Sirsa Kinnow becoming the first fruit from Haryana to obtain the Geographical Indication (GI) status. The GI status has been accorded by the Geographical Indications Registry in Chennai, which recognizes the distinctiveness and quality of Kinnow grown in Sirsa. The GI tag is likely to increase the commercial value of the Kinnow, safeguard its identity from counterfeiting, and create better prospects for farmers in Haryana. The GI registration was granted by the Geographical Indications Registry in Chennai to the Kharisuverian Farmer Producer Company, Sirsa.



16. Mission Golden Spice

Why in News?

The Union Minister for Development of North Eastern Region (DoNER) launched Mission Golden Spice, a ₹175.45 crore, five-year initiative to develop a farm-to-global-market ecosystem for Meghalaya's GI-tagged Lakadong turmeric.

What is Mission Golden Spice?

Officially known as the Integrated Lakadong Turmeric Value Chain Enhancement Project, Mission Golden Spice is a 2025–2030 initiative aimed at transforming Lakadong turmeric into a globally competitive premium spice brand.

The mission is part of the Centre's Unlock the Economic Potential of India's Northeast (USP) initiative under the Ashtalakshmi Strategy.

Implementing Agencies

Anchor Agencies

- Ministry of Development of North Eastern Region (MDoNER)
- North Eastern Council (NEC)

State Implementation

- Government of Meghalaya

Objectives

- Double farmers' income from ₹30–40/kg to ₹80/kg by 2030.
- Reduce post-harvest losses through better infrastructure.
- Establish modern processing and curcumin extraction facilities.
- Promote Lakadong turmeric as a premium export product in markets such as the US, EU, Japan, and Gulf countries.

About Lakadong Turmeric

- Grown mainly in the Jaintia Hills of Meghalaya.
- Holds a Geographical Indication (GI) tag.
- Known for its high curcumin content (around 7–12%), significantly higher than ordinary turmeric.

- Widely valued for its medicinal, nutritional, and commercial uses.

17. Punjab Becomes First State to Introduce AI as a Mainstream Subject



Punjab has become the first Indian state to introduce Artificial Intelligence (AI) as a mainstream subject for Classes I to XII under the Sarbat.AI initiative. The programme aims to integrate AI into school education to develop future-ready digital skills, promote innovation, and prepare students for the emerging knowledge economy.

The initiative will be implemented in phases, beginning with Classes VIII–XII through the Computer Science curriculum, followed by age-appropriate AI education for Classes I–VII. The curriculum is aligned with UNESCO's Ethical AI Framework and global best practices, and will use online classes, project-based learning, and a Learning Management System (LMS). The programme will cover over 25,000 schools and benefit around 31.5 lakh students, supported by large-scale teacher training.

18. Bihar's First River-Linking Project

Why in News?

Bihar has inaugurated its first river-linking project with the commissioning of the Belwa–Minapur Link Channel under the Bagmati–Burhi Gandak River Link Scheme.

The Belwa–Minapur Link Channel is a 68.8 km-long canal connecting the Bagmati River with the Burhi Gandak River, extending from Belwa Ghat in Sheohar district to Minapur in Muzaffarpur district. Developed at a cost of ₹130 crore, it is the first river-linking project in Bihar and aims to improve water management by facilitating the transfer of water between the two river systems.

The project is expected to enhance irrigation, improve agricultural productivity and farmers' incomes, promote fisheries, support groundwater recharge, and contribute to environmental conservation. During the inauguration, the state also launched 40 development projects worth ₹200 crore and provided ₹25 crore to 4,550 Jeevika Self-Help Groups (SHGs) to strengthen rural livelihoods and women's empowerment.

19. Ladakh to Extend Autonomous Hill Councils to All 7 Districts



The Ladakh administration has announced the extension of the Ladakh Autonomous Hill Development Council (LAHDC) framework to all seven districts, alongside the creation of 17 new tehsils, to strengthen democratic decentralisation, grassroots governance and protection of Ladakh's land, culture and identity.

Administrative Reorganization and Expansion: Ladakh earlier had only the Leh and Kargil districts.

Following the creation of five new districts (Sham, Nubra, Changthang, Zaskar, and Drass) in April 2026, the administration has added 17 new tehsils (bringing the total to 32). The Ladakh Autonomous Hill Development Council Act, 1995, permits the establishment of an Autonomous Hill Development Council in every district, although necessary amendments and delimitation of constituencies will be required.

Devolution of Regulatory Powers: Each of the seven districts will now possess its own elected Autonomous Hill Development Council (AHDC).

Under the existing LAHDC framework, these councils exercise important executive, financial and administrative functions relating to district-level development, land use and allotment, infrastructure, health, education and tourism.

20. Uttarakhand Gets 1st GI-Tagged Products Gallery

The gallery has been established at the Forest Training Academy (FTA), Haldwani.

Uttarakhand has more than 30 GI-tagged products across agriculture, handicrafts, food products, and manufactured goods.

- **Agricultural Products Displayed:** The gallery features Tejpatta (Indian bay leaf), Munsiyari White Rajma, Kumaon Kachyura Oil, Almora Lakhori Chilli, Berinag Tea, Uttarakhand Kala Bhat, Ramnagar Litchi, Ramgarh Peach, and Bedu (Himalayan Fig).
- **Traditional Crafts:** It showcases Kumaoni Aipan Art, Chamoli's Ramman Masks, Tamta Copperware, and Ringal Bamboo Craft, highlighting the state's rich artisanal traditions.
- **Special Products:** Nainital Candles and Buransh Squash (made from rhododendron flowers) are also displayed.

- **Major Achievement:** The state received a record 18 GI tags in a single day in December 2023, marking a significant recognition of its indigenous heritage.
- **Objective:** It aims to familiarise trainees, government officials, and visitors with Uttarakhand's GI-tagged agricultural products, handicrafts, food items, and traditional crafts.

21. UP Govt launches cashless health scheme for teachers and non-teaching staff

Uttar Pradesh government has launched the cashless health scheme for teachers as well as non-teaching staff in the state. Chief Minister Yogi Adityanath launched the 'Chief Minister's Teachers' Cashless Medical Scheme' from Varanasi, which will offer medical coverage of up to 5 lakh rupees to more than 15 lakh teaching staff.

Under the scheme, teachers across the state and their families will gain access to cashless medical facilities worth up to 5 lakh rupees. About 15 lakh teachers and non-teaching staff associated with basic and secondary education will benefit from the scheme. Beyond regular teachers, the scheme will also benefit Shiksha Mitras (para-teachers), instructors, cooks, and eligible staff of Kasturba Gandhi Balika Vidyalyayas.

An MoU was also signed with the State Bank of India to provide social security cover to the teachers and their families. Speaking at the event, the Chief Minister said that the government has fulfilled its promises to safeguard the health and social security of teachers. The comprehensive social security and insurance programme for UP basic education department employees is a first-of-its-kind initiative in the country.

Under the scheme, contractual employees drawing a monthly salary of more than rupees 10,000 will receive a personal accident insurance cover ranging from 30 lakh rupees to 80 lakh rupees. In cases of permanent disability, insurance benefits between 30 lakh rupees and 80 lakh rupees will be provided, while partial disability will be covered for 15 lakh rupees to 40 lakh rupees. The scheme also includes air accident insurance, along with add-on benefits to support the education of employees' children and the marriage of daughters in the event of an unforeseen tragedy.

22. World's Oldest Scientifically Dated Banyan Tree Found in Bihar



Why in News?

Scientists have identified a 700-year-old banyan tree in Munger, Bihar, as the oldest accurately dated banyan tree (*Ficus benghalensis*) using radiocarbon dating, marking a major breakthrough in the scientific dating of tropical heritage trees.

Key Points

Research Institution: The study was led by Dr. Trina Bose of the Birbal Sahni Institute of Palaeosciences, an autonomous institute under the Department of Science and Technology (DST), Government of India.

Scientific Methodology: Researchers extracted alpha-cellulose from wood samples collected near the pith of the tree and conducted Accelerator Mass Spectrometry (AMS) radiocarbon dating.

The results were calibrated using the IntCal20 calibration curve and OxCal software to determine the tree's age accurately. Scientific analysis established the tree's age at approximately 700 years

Research Publication: The findings have been published in the journal Quaternary Research.

3. INTERNATIONAL NEWS

23. India and Saudi Arabia Sign Water Management Pact



India and Saudi Arabia signed a Memorandum of Understanding on 29 June 2026 for cooperation in water resource management. The pact was formalised during the inaugural Saudi Water Week conference in Jeddah, Saudi Arabia. The MoU covers collaboration in water resources planning, sustainable water management, capacity building, and exchange of best practices. The agreement also includes cooperation on irrigation systems and related areas of water management. The Indian embassy in Riyadh described the pact as a step in the India–Saudi Arabia strategic partnership. Water management cooperation is linked to long-term water security in arid and semi-arid regions.

24. Prambanan Temple



Why in News?

Prime Minister Narendra Modi and Indonesian President Prabowo Subianto jointly launched an international conservation and restoration project at the Prambanan Temple Compounds in Yogyakarta, Indonesia.

Background

Prambanan, also known locally as Roro Jonggrang (Loro Jonggrang), is the largest Hindu temple complex in Indonesia and one of Southeast Asia's most significant Hindu monuments. Built during the 8th–9th centuries CE, it reflects the zenith of Shaivite architecture and the influence of Hindu civilisation in the Indonesian archipelago.

Located on the island of Java, the temple complex lies along the border of the Special Region of Yogyakarta and Central Java.

Historical Evolution

- Constructed around 850 CE under the Sanjaya Dynasty.
- Built during the resurgence of Shaivite Hinduism in Java, around the same period as the nearby Borobudur Buddhist monument.
- The complex was abandoned in the 11th century following political changes and repeated natural disasters, including earthquakes and volcanic activity from Mount Merapi.
- Rediscovered in the early 19th century during British rule in Java.
- Scientific restoration began in 1918.

- Declared a UNESCO World Heritage Site in 1991 and recognised as Indonesia's National Cultural Property in 1998.

Key Features

Prambanan is renowned for its well-planned temple layout and advanced stone architecture.

- The complex follows a three-tiered concentric square plan, symbolising different spiritual realms.
- The innermost courtyard houses 16 principal temples, while the middle zone originally contained 224 smaller guardian shrines (Perwara temples).
- At the centre stand three towering temples dedicated to the Hindu Trimurti:
 - Shiva Temple (47 metres high), the tallest and most prominent shrine.
 - Brahma Temple.
 - Vishnu Temple.
- Opposite these are three temples dedicated to their respective vahanas (mounts)—Nandi, Hamsa, and Garuda.
- The temple walls feature elaborate bas-reliefs depicting episodes from the Ramayana and the Bhagavata Purana, reflecting the Javanese adaptation of these epics.
- The structures were built using dry interlocking stone masonry, without mortar, a technique that enhanced their resilience against earthquakes.

25. NATO Ankara Summit 2026

Why in News?

The NATO Ankara Summit 2026, hosted by Türkiye, concluded with major decisions on higher defence spending, long-term support for Ukraine, and strengthening Europe's defence industrial base. The summit also has important implications for countries like India that depend on global defence supply chains.

The NATO Ankara Summit

The NATO Ankara Summit is a high-level meeting of leaders from NATO's 32 member countries to review the Alliance's security environment, assess defence preparedness, and decide future strategic priorities. It builds upon the commitments made at the 2025 Hague Summit, with a stronger emphasis on military readiness, defence production, and collective security.

Major Outcomes of the Summit

- Reaffirmed **Article 5** collective defence commitment.
- Approved **5% of GDP defence spending** target by **2035**.
- Pledged **continued military and financial support to Ukraine**.
- Agreed to **strengthen Europe's defence industrial base**.
- Shifted focus towards **scaling defence production and innovation**.

26. Mount Olympus

Why in News?

Greece's nomination to inscribe Mount Olympus as a UNESCO World Heritage Site (Mixed Site) is under consideration by the World Heritage Committee in Busan, South Korea.



Mount Olympus is the highest mountain in Greece, rising to 2,918 metres at Mytikas Peak. Located in northern Greece near the Aegean Sea, it lies along the boundary of the regions of Macedonia and Thessaly. Famous in Greek mythology as the home of Zeus and the Twelve Olympian Gods, the massif comprises 52 peaks, deep gorges such as the Enipeas Gorge, and remarkable ecological diversity. It was formed mainly from limestone and dolomite rocks uplifted by the collision of the African and Eurasian tectonic plates.

Mount Olympus is both a natural and cultural heritage site. It was declared Greece's first National Park in 1938 and is also a UNESCO Biosphere Reserve, protecting rich biodiversity, endemic flora, and diverse wildlife. Its unique blend of mythological significance, geological features, and ecological importance forms the basis of Greece's nomination as a mixed UNESCO World Heritage Site.

27. 16th India–Japan Annual Summit 2026

Why in News?

The 16th India–Japan Annual Summit was held in New Delhi, where both countries strengthened their Special Strategic and Global Partnership through agreements on defence, economic security, clean energy, AI, and resilient supply chains.

Key Outcomes

Defence & Security

- Agreement in principle on UNICORN (Unified Complex Radio Antenna), the first India–Japan defence co-development project.
- Expanded cooperation in defence equipment, maritime security, MRO, Maritime Domain Awareness (MDA), and joint military exercises.
- Decision to hold the 4th India–Japan 2+2 Ministerial Meeting in 2026.
- Economic Security & Supply Chains
- Adopted the India–Japan Joint Declaration on Economic Security Cooperation.
- Enhanced cooperation in semiconductors, critical minerals, ICT, clean energy, and pharmaceuticals.
- Agreed to build resilient and diversified supply chains to reduce dependence on any single country.

Energy & Clean Technology

- Adopted a Joint Statement on Energy Resilience.

- Launched the India–Japan Cooperative Biogas for Growth (CBG) Initiative.
- Expanded cooperation in green hydrogen, clean ammonia, solar PV, and nuclear energy.
- Japan reaffirmed support for India's membership of the International Energy Agency (IEA).

Artificial Intelligence

- Launched the India–Japan AI Strategic Dialogue.
- Adopted a Joint Statement on AI Cooperation covering trusted AI, digital infrastructure, AI supply chains, and responsible AI governance.

Trade & Investment

- Agreed to accelerate the review of the Comprehensive Economic Partnership Agreement (CEPA).
- Signed an MoC for a USD 10 billion investment package.
- Expanded cooperation in MSMEs, startups, logistics, agriculture, healthcare, manufacturing, and payment systems.

Indo-Pacific Cooperation

- Reaffirmed commitment to a Free and Open Indo-Pacific (FOIP) aligned with India's IPOI and MAHASAGAR vision.
- Strengthened cooperation through the Quad, ASEAN, and BIMSTEC.
- Supported UNCLOS, freedom of navigation, UN Security Council reforms, and counter-terrorism.
- Announced a 1.5-track policy dialogue with the Philippines on maritime security.

India–Japan Relations at a Glance

India and Japan share long-standing ties rooted in Buddhism. Diplomatic relations were established in 1952, upgraded to a Global Partnership (2000), Special Strategic and Global Partnership (2014), and are now guided by the Japan–India Vision 2025.

Key pillars of cooperation include:

- Defence: 2+2 Dialogue, JIMEX, Dharma Guardian, Malabar, Veer Guardian, and logistics agreement (2020).
- Economy: Bilateral trade of USD 27.48 billion (FY 2025–26); Japan is India's 5th largest FDI source and major provider of Official Development Assistance (ODA) for projects such as the Mumbai–Ahmedabad High-Speed Rail and Delhi Metro.
- Science & Technology: Joint LUPEX Moon Mission, Digital Partnership in AI, IoT, and semiconductors.
- People-to-People Ties: Technical Intern Training Programme (TITP), Specified Skilled Worker (SSW) scheme, and around 59,000 Indians living in Japan.

Key Challenges

- Bilateral trade remains below potential.
- Delays in projects such as the Mumbai–Ahmedabad Bullet Train.
- Slow progress of the Asia–Africa Growth Corridor (AAGC).

- Non-tariff barriers for Indian exports.
- Language barriers limiting skilled worker mobility.
- Differences over Russia and defence technology transfer constraints.

28. Guwahati Declaration

- The Guwahati Declaration was adopted to strengthen cooperation against illicit drug trafficking and related transnational organized crime.
- **Adopted by:** The declaration was adopted by the BRICS nations, under India's 2026 BRICS chairmanship.
- **Theme:** The meeting was held under the theme "Building for Resilience, Innovation, Cooperation and Sustainability."
- **Aim:** The declaration aims to strengthen cooperation to prevent and combat illicit drug trafficking and related transnational organized crime.
- **Key Pillars:**
 - **Information Sharing:** The declaration calls for timely exchange of information, intelligence and best practices in line with national laws and international obligations.
 - **Technology and Innovation:** The declaration highlights the use of innovative technologies, digital tools and data-driven approaches to strengthen law enforcement and regulatory measures against illicit drug trafficking.
 - **Demand Reduction:** The declaration stresses the need to reduce drug demand, promote healthy lifestyles and protect vulnerable groups, especially children and young people, through evidence-based and people-centred strategies.
 - **Coordinated International Action:** The declaration reaffirms the commitment of BRICS nations to strengthen cooperation to prevent and combat illicit drug trafficking and related transnational organised crime.



4. BANKING / ECONOMY

29. Polymer Banknotes in India

Why in News?

The Reserve Bank of India's (RBI) currency printing subsidiary, Bharatiya Reserve Bank Note Mudran Private Limited (BRBNMPL), has invited Expressions of Interest (EoI) from global firms for the supply of opacified polymer substrate sheets with embedded security features, indicating renewed efforts to introduce polymer banknotes in India.

About Polymer Banknotes

Polymer banknotes are currency notes made from biaxially oriented polypropylene (BOPP) instead of traditional cotton-rag paper.

First introduced by Australia, polymer notes are now used in over 60 countries because of their greater durability, improved security features, and longer circulation life.

Key Features

- Made from BOPP polymer substrate instead of paper.
- Last 2.5–4 times longer than conventional paper notes.
- Resistant to moisture, dirt, oils, and tearing.
- Incorporate advanced security features such as transparent windows, colour-shifting inks, and metallic security elements.
- Particularly suitable for low-denomination, high-circulation notes such as ₹10 and ₹20.

Advantages

- Longer Lifespan: Requires less frequent replacement, reducing note-printing demand.
- Lower Lifecycle Cost: Although initially expensive, longer durability lowers replacement, transportation, and disposal costs over time.
- Better Security: Advanced security features make counterfeiting much more difficult.
- Cleaner Currency: Polymer notes remain cleaner and more hygienic as they do not absorb moisture or dirt.
- Environmental Benefits: Fewer replacement cycles reduce the overall carbon footprint during the note's lifetime.

Challenges

- Higher Initial Cost: Polymer notes cost 30–60% more to manufacture than paper notes.
- Import Dependence: India imports a significant share of the polypropylene required for polymer substrates.
- Infrastructure Upgrades: ATMs, currency sorting machines, and vending systems may require recalibration to handle polymer notes.

Growing Digital Payments: Increasing adoption of UPI and the Digital Rupee (e₹) raises questions about large investments in physical currency.

30. Nifty500 Ahimsa Index

Why in News?

NSE Indices Limited, in collaboration with the Ahimsa Foundation, has launched the Nifty500 Ahimsa Index—India's first equity index that tracks companies following the principle of Ahimsa (non-violence towards animals).

The Nifty500 Ahimsa Index is a rules-based equity index that includes 326 companies from the Nifty 500 after screening them using the Ahimsa Investment Movement (AIM) Framework. Companies are classified into Green, Orange, and Red categories based on their involvement in activities affecting animal welfare, with only Green-band companies eligible

for inclusion. The index is weighted by free-float market capitalisation, has a base date of 1 April 2016, and is reviewed twice a year.

The index excludes companies involved in sectors such as meat, dairy, poultry, leather, animal-tested cosmetics, and certain pharmaceutical activities, as well as financial institutions financing such sectors. It aims to promote ethical and values-based investing, while serving as a benchmark for investment products such as mutual funds, Exchange-Traded Funds (ETFs), and index funds.

31. White Gold: India's Cotton Story

Why in News?

The Press Information Bureau (PIB) published the feature article "White Gold: India's Cotton Story – From Seed to Shirt", highlighting the importance of India's cotton sector and recent initiatives to improve its productivity, quality, and global competitiveness.

India is the only country that cultivates all four recognised cotton species, ranking first in the world in cotton cultivation area and second in production and consumption. The cotton sector supports around 6 million farmers and provides employment to 40–50 million people across the textile value chain, making it a vital contributor to the country's agriculture, manufacturing, and export economy.

To strengthen the sector, the Government has launched initiatives such as the Mission for Cotton Productivity, Kapas Kisan App, Kasturi Cotton Bharat, and Minimum Support Price (MSP) procurement. These measures promote high-density planting, climate-resilient cotton varieties, digital procurement, and blockchain-based traceability, aiming to improve farmer incomes, enhance cotton quality, and boost India's competitiveness in the global textile market under the Atmanirbhar Bharat vision.

32. E-Commerce Council of India (ECCI)

Why in News?

The Internet and Mobile Association of India (IAMAI) has launched the E-Commerce Council of India (ECCI) in Bengaluru to provide a unified platform for India's digital commerce ecosystem.

The E-Commerce Council of India (ECCI) is India's first dedicated national industry council for the e-commerce sector. Established under the IAMAI, it aims to represent the interests of digital commerce stakeholders and serve as a common platform for engagement with the government on policy and regulatory matters. The council brings together e-commerce platforms, logistics companies, payment service providers, D2C brands, travel, mobility, and other digital businesses under a single umbrella.

The ECCI will focus on policy advocacy, cross-border e-commerce, MSME digital onboarding, and the adoption of emerging technologies such as AI-powered commerce and

digital payments. It also plans to organise the Indian E-Commerce Summit (IECS) annually to promote collaboration among industry, government, academia, and global partners. The initiative is expected to strengthen India's digital economy by encouraging innovation, investment, and a stable policy environment.

33. India–UK Comprehensive Economic and Trade Agreement (CETA)

Why in News?

The India–UK Comprehensive Economic and Trade Agreement (CETA), along with the Double Contribution Convention (DCC), came into effect on 15 July 2026, marking a major milestone in India–UK economic relations.

The CETA is a Free Trade Agreement (FTA) that expands bilateral trade by improving market access for goods and services, promoting investment, and facilitating the movement of professionals. Under the agreement, the UK has granted zero-duty access to nearly 99% of India's exports, while India has offered tariff concessions on 89.5% of its tariff lines, with phased implementation to protect sensitive sectors. India has excluded products such as dairy, agriculture, millets, apples, edible oils, and gold from tariff concessions. The agreement is expected to benefit sectors including textiles, pharmaceuticals, engineering goods, marine products, leather, gems & jewellery, plastics, sports goods, and IT-enabled services, while also supporting the Make in India and PLI initiatives.

Alongside CETA, the Double Contribution Convention (DCC) eliminates dual social security contributions for eligible Indian professionals working temporarily in the UK. It extends the exemption from UK National Insurance contributions from 12 months to 60 months (5 years), provided workers obtain a Certificate of Coverage (CoC) from the Employees' Provident Fund Organisation (EPFO). The DCC is expected to benefit over 75,000 Indian professionals and 900 companies, reduce employment costs, improve take-home earnings, and encourage greater investment in Global Capability Centres (GCCs) in India.

34. Electronic Gold Receipts (EGRs)

Why in News?

The National Stock Exchange (NSE) has introduced Electronic Gold Receipts (EGRs), enabling investors to buy and sell gold in electronic form through the stock exchange.

Electronic Gold Receipts (EGRs) are exchange-traded securities that represent ownership of physical gold of specified purity stored in SEBI-regulated vaults. Like shares, EGRs are held in a demat account, traded through registered stockbrokers, and follow a T+1 settlement cycle. Investors require both trading and demat accounts to transact in EGRs. They are available in 99.9% (999) and 99.5% (995) purity standards, with denominations ranging from 10 mg to 1 kg, and can be converted into physical gold through a prescribed process. EGRs provide a transparent, standardised, and secure way to invest in gold by eliminating concerns related to purity, storage, and authenticity. The initiative is expected to deepen the organised gold market and offer investors a convenient alternative to holding physical gold.

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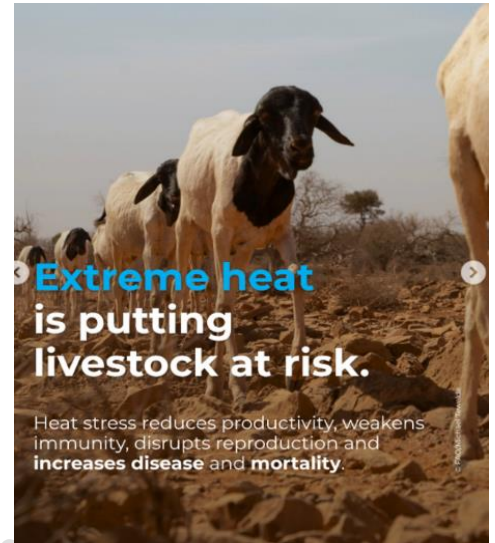
Science & Technology

Presentation Skills

Career Counselling

5. SUMMIT, RANKS AND REPORTS

35. FAO and WMO release report on extreme heat and agriculture



Food and Agriculture Organisation of the United Nations (FAO) and World Meteorological Organization (WMO) jointly released a report titled “Extreme Heat and Agriculture” yesterday. The report said that rising temperatures and extreme heat are reducing food production and incomes in agrifood systems that 1.23 billion people rely on. It also warned that agricultural yield losses can triple when heat combines with other hazards such as drought and are projected to get much worse as the world warms.

The report further said that extreme heat is emerging as one of the most urgent and least understood threats to agriculture and food security. It said that rising temperatures, prolonged heatwaves, and shifting climate patterns are already disrupting crop yields, livestock health, water availability, and rural livelihoods – with impacts falling disproportionately on the most vulnerable.

36. UDISE+ Report 2025–26

Why in News?

The Ministry of Education has released the Unified District Information System for Education Plus (UDISE+) Report 2025–26, providing a comprehensive overview of the status of school education across the country.

About UDISE+

The Unified District Information System for Education Plus (UDISE+) is one of the world's largest school education management information systems. Maintained by the Department of School Education and Literacy, it serves as the primary database for planning, monitoring, and policymaking in the school education sector.

It covers over 14.8 lakh schools, 1.02 crore teachers, and more than 26 crore students across India, and supports evidence-based implementation of the National Education Policy (NEP) 2020.

Key Findings

The report indicates encouraging progress in several educational indicators:

- Dropout rates have declined across school stages, reflecting improved student retention.
- The Gross Enrolment Ratio (GER) at the secondary level has increased, indicating wider access to education.
- Student transition rates between different stages of schooling have improved.
- The Pupil-Teacher Ratio (PTR) remains below the NEP benchmark of 30:1, suggesting better teacher availability.
- The number of single-teacher and zero-enrolment schools has reduced due to school rationalisation.
- More schools now have computers, internet connectivity, electricity, drinking water, and functional toilets.
- Women continue to constitute the majority of the teaching workforce.

Key Concerns

Despite the improvements, the report highlights several persistent challenges:

- Student retention at the secondary level continues to remain a concern.
- Over one lakh schools are still functioning with only one teacher.
- More than 40% of schools lack adequate accessibility infrastructure for Children with Special Needs (CWSN).
- The availability of functional playgrounds has marginally declined.
- Adoption of rainwater harvesting systems remains limited, affecting sustainability initiatives in schools.

Way Forward

The report recommends expanding secondary school infrastructure, ensuring a minimum of two teachers in every school, improving accessibility for CWSN, strengthening digital

learning through better internet integration, and promoting sustainable infrastructure such as rainwater harvesting and rooftop solar installations. These measures would support the objectives of NEP 2020 and improve the quality and inclusiveness of school education in India.

37. Investment Friendliness Index (IFI)

Why in News?

NITI Aayog has launched the first-ever Investment Friendliness Index (IFI) to assess and benchmark the investment ecosystem across States and Union Territories, supporting the Viksit Bharat @2047 vision.

What is the Investment Friendliness Index (IFI)?

The Investment Friendliness Index (IFI) is a comprehensive, evidence-based assessment framework that evaluates how effectively States and Union Territories create an environment conducive to attracting and retaining domestic and foreign private investment.

The index is developed and published by NITI Aayog.

Objectives

- Promote competitive and cooperative federalism.
- Encourage reforms to improve the investment climate.
- Help States identify strengths and areas requiring improvement.
- Enhance India's attractiveness as an investment destination.
- Support the Viksit Bharat @2047 vision through sustained private investment.

Coverage

The index evaluates:

- 28 States
- 8 Union Territories

Eight Evaluation Pillars

The IFI assesses investment attractiveness across the following eight pillars:

1. Infrastructure
2. Business Climate
3. Resources
4. Government Policy
5. Regulatory Ease
6. Institutional Environment
7. Financial Health
8. Environmental Resilience

Key Findings

Top Performers

Only five States scored above 50:

State	Score
Gujarat	56.6

Maharashtra	53.7
Tamil Nadu	53.3
Goa	53.1
Odisha	50+

State	Key Strength
Gujarat	Ports and infrastructure
Maharashtra	Business climate and Private Equity/Venture Capital (PE/VC) investments
Tamil Nadu	Manufacturing and exports

Foreign Direct Investment (FDI)

Five regions account for nearly 85% of India's FDI:

- Maharashtra
- Karnataka
- Gujarat
- Delhi
- Tamil Nadu

In contrast, the North-Eastern States receive less than 1% of total FDI.

38. State of Food Security and Nutrition in the World (SOFI) 2026

Why in News?

The State of Food Security and Nutrition in the World (SOFI) 2026 report highlights a decline in hunger and undernourishment in India but points to continuing challenges in ensuring access to affordable and nutritious diets.

The report estimates that India's undernourished population declined to 142.5 million (9.8%) during 2023–25, compared to 243.9 million (21.1%) in 2004–06. However, the cost of a healthy diet increased to PPP \$4.11 per person per day, making it unaffordable for about 520.1 million people (35.5% of the population). While child stunting has declined, concerns remain over high levels of wasting, rising obesity, and anaemia among women.

To address these challenges, the report recommends improving access to diverse and nutritious foods, strengthening maternal nutrition, promoting dietary diversification, and expanding nutrition-focused programmes. In India, initiatives such as the National Food Security Act (NFSA), POSHAN 2.0, PM Garib Kalyan Anna Yojana, Mid-Day Meal Scheme, food fortification, and the Poshan Tracker continue to support food security and nutritional outcomes.

About SOFI

The State of Food Security and Nutrition in the World (SOFI) is an annual global report monitoring progress towards SDG 2 (Zero Hunger). It is jointly published by FAO, IFAD, UNICEF, WFP, and WHO.

39. UNFPA Demographic Futures Survey 2026

Why in News?

The United Nations Population Fund (UNFPA) has released the Lives, Choices and Futures – Demographic Futures Survey 2026, a global study examining the aspirations, relationships, and family decisions of young adults aged 18–39 years across 73 countries and territories.

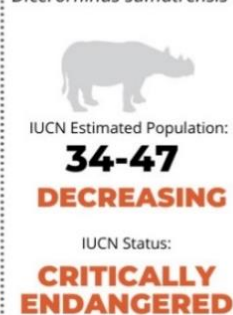
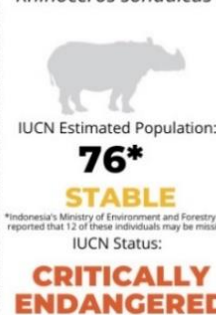
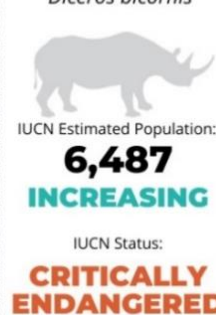
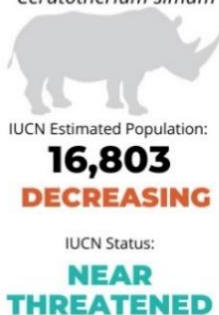
The survey found that marriage and parenthood remain strong aspirations among young people, but economic and social barriers are preventing many from achieving these goals. Globally, 81% of respondents considered financial security essential before entering a partnership, while 88% viewed financial stability as the most important prerequisite for having children. Rising living costs, expensive housing, job insecurity, and inadequate institutional support emerged as the major reasons for delayed marriage and declining fertility. In India, the ideal family size was reported as 2.1 children for women and 2.2 for men, whereas the actual average among respondents aged 35–39 was only about one child.

The report recommends strengthening youth employment, affordable housing, childcare services, parental leave, and gender equality in unpaid care work. It also calls for a rights-based approach to population policies that focuses on expanding individual choice and reproductive freedom rather than pursuing fixed birth-rate targets.

About UNFPA:

The United Nations Population Fund (UNFPA) is the UN agency responsible for promoting sexual and reproductive health, reproductive rights, gender equality, and population data. It was established in 1969 and is headquartered in New York, USA.

40. Dudhwa Rhino Census



Why in News?

The Indian Rhinoceros' population in Uttar Pradesh's Dudhwa Tiger Reserve (DTR) has risen to 53, following the successful completion of the fourth rhino census conducted in June 2026.

- The 4th census recorded a net increase of 5 rhinos since the previous count.
- Geographical Stronghold - Uttar Pradesh remains one of only 3 states in India alongside Assam and West Bengal to support a wild population of the greater one-horned rhinoceros.
- Enclosure Management - DTR manages its rhinos across two specialised, high-security rhino rehabilitation enclosures (RR1 and RR2).
- Currently, 6 rhinos reside in RR1 and 36 in RR2.
- Free-Ranging Success - To improve genetic diversity and combat inbreeding depression, 11 rhinos have been successfully released from the enclosures to roam completely free in the wild.
- Predation and Mortality - The net increase of 5 was achieved despite 3 recent mortalities.
- Reintroduction History - The rhino reintroduction programme in Dudhwa began in 1984–85 with the translocation of seven founder rhinos from Assam and Nepal.

Dudhwa Tiger Reserve

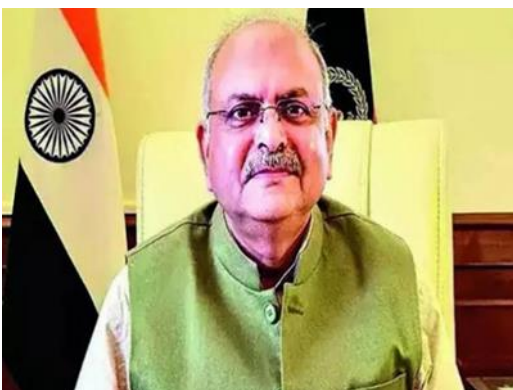
- Located on the Indo-Nepal border in the Lakhimpur-Kheri district of Uttar Pradesh, it comprises a unique Terai grassland and swamp ecosystem.
- It is home to endangered species like the Bengal tiger, swamp deer (barasingha), and Asian elephant.

Greater One-Horned Rhinoceros

- Scientific Name- Rhinoceros unicornis
- IUCN Red List Status – Vulnerable.
- CITES - Appendix I.
- Wildlife Protection Act, 1972 - Schedule I.

6. APPOINTMENTS / RESIGNATIONS

41. Ravi Agrawal Reappointed as CBDT Chairman



Why in News?

The Union Government has extended the tenure of CBDT Chairman Ravi Agrawal by six months, ensuring continuity in the leadership of the apex direct tax policymaking body.

Key Points

Tenure Extension: The Appointments Committee of the Cabinet (ACC) approved the reappointment of Ravi Agrawal as Chairman of the CBDT for six months.

His new tenure will be effective from 1 July 2026 to 31 December 2026, or until further orders, whichever is earlier.

Ravi Agrawal is a 1988-batch Indian Revenue Service (IRS) officer who was due to retire on 30 June 2026.

Previous Appointments: He was appointed as CBDT Chairman in June 2024 for a one-year term, and his tenure was extended by another year in June 2025 before the latest six-month extension.

CBDT

Statutory Body: Constituted under the Central Board of Revenue Act, 1963.

Administrative Control: Functions under the Department of Revenue, Ministry of Finance.

Composition: Headed by a Chairman and comprises six Members

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UNION PUBLIC SERVICE COMMISSION PROGRAMME OF EXAMINATIONS/RECRUITMENT TESTS (RTs) -2026					
Sl. No.	Name of Examination	Date of Notification	Last Date for receipt of Applications	Date of commencement of Exam	Duration of Exam
1.	Reserved for UPSC RT/ Examination			10.01.2026 (Saturday)	2 Days
2.	Reserved for UPSC Examination			17.01.2026 (Saturday)	2 Days
3.	Combined Geo-Scientist (Preliminary) Examination, 2026	03.09.2025	23.09.2025	08.02.2026 (Sunday)	1 DAY
4.	Engineering Services (Preliminary) Examination, 2026	17.09.2025	07.10.2025	08.02.2026 (Sunday)	1 DAY
5.	CBI (DSP) LDCE	24.12.2025	13.01.2026	28.02.2026 (Saturday)	2 DAY
6.	CISF AC(EXE) LDCE-2026	03.12.2025	23.12.2025	08.03.2026 (Sunday)	1 DAY
7.	N.D.A. & N.A. Examination (I), 2026	10.12.2025	30.12.2025	12.04.2026 (Sunday)	1 DAY
8.	C.D.S. Examination (I), 2026				
9.	Civil Services (Preliminary) Examination, 2026	14.01.2026	03.02.2026	24.05.2026 (Sunday)	1 DAY
10.	Indian Forest Service (Preliminary) Examination, 2026 through CS(P) Examination 2026				
11.	Reserved for UPSC RT/ Examination			06.06.2026 (Saturday)	2 DAYS
12.	I.E.S./I.S.S. Examination, 2026	11.02.2026	03.03.2026	19.06.2026 (Friday)	3 DAYS
13.	Combined Geo-Scientist (Main) Examination, 2026			20.06.2026 (Saturday)	2 DAYS
14.	Engineering Services (Main) Examination, 2026			21.06.2026 (Sunday)	1 DAY
15.	Reserved for UPSC RT/ Examination			04.07.2026 (Saturday)	2 DAYS
16.	Central Armed Police Forces (ACs) Examination, 2026	18.02.2026	10.03.2026	19.07.2026 (Sunday)	1 DAY
17.	Combined Medical Services Examination, 2026	11.03.2026	31.03.2026	02.08.2026 (Sunday)	1 DAY
18.	Reserved for UPSC Examination			08.08.2026 (Saturday)	2 DAYS
19.	Civil Services (Main) Examination, 2026			21.08.2026 (Friday)	5 DAYS
20.	N.D.A. & N.A. Examination (II), 2026	20.05.2026	09.06.2026	13.09.2026 (Sunday)	1 DAY
21.	C.D.S. Examination (II), 2026				
22.	Reserved for UPSC RT/ Examination			26.09.2026 (Saturday)	2 DAYS
23.	Reserved for UPSC RT/ Examination			10.10.2026 (Saturday)	2 DAYS
24.	Reserved for UPSC RT/ Examination			31.10.2026 (Saturday)	2 DAYS
25.	Indian Forest Service (Main) Examination, 2026			22.11.2026 (Sunday)	7 DAYS
26.	S.O./Steno (GD-B/GD-I) LDCE	16.09.2026	06.10.2026	12.12.2026 (Saturday)	2 DAYS
27.	Reserved for UPSC RT/ Examination			19.12.2026 (Saturday)	2 DAYS
Note: The dates of notification, commencement and duration of Examinations/ RTs are liable to alteration, if the circumstances so warrant.					

TENTATIVE CALENDAR OF EXAMINATIONS FOR THE YEAR 2026-2027

S.No.	Name of Examination	Tier/Phase	Date of Advertisement	Closing Date	Month of Exam
1.	JSA / LDC Grade Limited Departmental Competitive Examination, 2025 (for DoPT only)	Paper-I (CBE)*	16 March 2026	07 April 2026	May 2026
2.	SSA / UDC Grade Limited Departmental Competitive Examination, 2025 (for DoPT only)	Paper-I (CBE)*	16 March 2026	07 April 2026	May 2026
3.	ASO Grade Limited Departmental Competitive Examination, 2025	Paper-I (CBE)*	16 March 2026	07 April 2026	May 2026
4.	Combined Graduate Level Examination, 2026	Tier-I (CBE)*	March 2026	April 2026	May – June 2026
5.	Junior Engineer (Civil, Mechanical & Electrical) Examination, 2026	Paper-I (CBE)*	March 2026	April 2026	May – June 2026
6.	Selection Post Examination, Phase-XIV, 2026	CBE*	March 2026	April 2026	May – July 2026
7.	Combined Higher Secondary (10+2) Level Examination, 2026	Tier-I (CBE)*	April 2026	May 2026	July – September 2026
8.	Stenographer Grade 'C' & 'D' Examination, 2026	CBE*	April 2026	May 2026	August – September 2026
9.	Combined Hindi Translators Examination, 2026	Paper-I (CBE)*	April 2026	May 2026	August – September 2026
10.	Multi-Tasking (Non-Technical) Staff & Havaladar (CBIC & CBN) Examination, 2026	CBE*	June 2026	July 2026	September – November 2026
11.	Sub-Inspector in Delhi Police & Central Armed Police Forces Examination, 2026	Paper-I (CBE)*	May 2026	June 2026	October – November 2026
12.	Constables (GD) in Central Armed Police Forces (CAPFs), NIA, SSF and Rifleman (GD) in Assam Rifles Examination, 2027	CBE*	September 2026	October 2026	January – March 2027

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Ranika



Gurpreet



Aman



Tamana



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Shivani



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Maninder



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Suman



Avneet



Rupinder



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7. DEFENCE NEWS

42. INS Mahendragiri (F38)

Why in News?

The Indian Navy is set to commission INS Mahendragiri (F38), the sixth Project 17A indigenous guided-missile stealth frigate, at Visakhapatnam.

About INS Mahendragiri

INS Mahendragiri is a Nilgiri-class (Project 17A) multi-role stealth frigate designed for operations across air, surface, and sub-surface domains. Developed with a high degree of automation, it is intended to enhance the Indian Navy's combat capability and strengthen maritime security in the Indian Ocean Region (IOR).

The warship has been designed in-house by the Indian Navy's Warship Design Bureau (WDB) and constructed by Mazagon Dock Shipbuilders Limited (MDL), Mumbai, using advanced modular construction techniques.

Key Features

- Built with over 75% indigenous content under the Aatmanirbhar Bharat initiative.
- Equipped with Combined Diesel or Gas (CODOG) propulsion, enabling fuel-efficient cruising as well as high-speed operations.
- Designed with advanced stealth features to reduce radar, acoustic, and infrared signatures.
- **Armed with:**
 - BrahMos supersonic cruise missiles.
 - Barak-8 Long-Range Surface-to-Air Missile (LRSAM) system.
 - Indigenous torpedoes and anti-submarine rocket launchers.
 - A main naval gun for surface warfare.
- Features an indigenous Combat Management System (CMS) integrated with advanced radar, electronic warfare systems, and hull-mounted and towed sonar for enhanced situational awareness.

Project 17A

Project 17A is the follow-on programme to the Shivalik-class (Project 17) stealth frigates and aims to strengthen the Indian Navy's blue-water capabilities through a new generation of indigenous stealth warships.

The seven Project 17A frigates are:

- INS Nilgiri (F34)
- INS Himgiri (F35)
- INS Udaygiri (F36)
- INS Dunagiri (F37)
- INS Mahendragiri (F38)
- INS Taragiri (F41)
- INS Vindhyagiri (F42)

43. Underwater Fiber Optic Sensing System (UFOSS)

Why in News?

The Defence Research and Development Organisation (DRDO) has initiated a project to deploy an indigenous Underwater Fiber Optic Sensing System (UFOSS) in the Indian Ocean Region (IOR) to strengthen underwater surveillance and enhance the Indian Navy's anti-submarine warfare capabilities.

What is UFOSS?

The Underwater Fiber Optic Sensing System (UFOSS) is a fixed network of seabed-mounted acoustic sensors connected through fibre-optic cables. It is designed to provide continuous underwater surveillance by detecting and tracking submarines and other underwater vessels moving through strategically important maritime areas.

The system aims to bridge surveillance gaps left by periodic patrols of ships and aircraft and improve India's maritime domain awareness.

How Does It Work?

The seabed-mounted sensors detect the acoustic signatures generated by submarines and ships, such as propeller noise and engine vibrations. These signals are transmitted through undersea fibre-optic cables to naval shore stations, where they are analysed using advanced software to identify the type of vessel. Once a target is confirmed, the information is relayed to naval assets such as P-8I maritime patrol aircraft, MH-60R helicopters, or warships for further action.

Key Features

- Provides round-the-clock underwater surveillance in the Indian Ocean.
- Built using marine-grade fibre-optic cables, hydrophones, junction boxes, and seabed sensor nodes.
- Designed for an operational life of around 20 years with minimal maintenance.
- Fibre-optic cables will be buried beneath the seabed to protect them from anchors, fishing activities, and sabotage.
- The project is expected to be completed within 48 months under the supervision of a Lead System Integrator.

44. Exercise Pitch Black 2026

Why in News?

The Indian Air Force (IAF) is participating in Exercise Pitch Black 2026, a major multinational air combat exercise hosted by the Royal Australian Air Force (RAAF) in Australia's Northern Territory from 20 July to 7 August 2026.

Exercise Pitch Black is the RAAF's largest multinational air combat exercise, involving more than 100 aircraft and personnel from over 19 countries, including India, Australia, the USA,

the UK, Japan, France, Indonesia, Singapore, South Korea, and Canada. The exercise focuses on advanced air combat tactics, mission planning, and high-intensity operational training to enhance interoperability, coordination, and military cooperation among participating air forces.

The exercise is one of the Indo-Pacific's premier air warfare exercises, strengthening defence partnerships and promoting regional security. Other major India–Australia military exercises include AUSTRA HIND (Army), AUSINDEX (Navy), and MALABAR, a multilateral naval exercise involving India, the USA, Japan, and Australia.

45. Operation Southern Readiness 26-2

Why in News?

The Indian Navy is hosting Operation Southern Readiness 26-2, a multinational maritime training exercise, at the Southern Naval Command, Kochi.

Operation Southern Readiness 26-2 is a four-day multinational maritime training exercise conducted in partnership with the Combined Maritime Forces (CMF) under the Indian Navy-led Combined Task Force 154 (CTF 154), the CMF's dedicated training task force. It brings together personnel from CMF partner nations for professional maritime security training, practical exercises, and the exchange of best practices. The Combined Maritime Forces (CMF) is a multinational maritime partnership comprising over 40 countries, working to enhance maritime security and regional cooperation.

The training programme includes classroom sessions, simulator-based training, and onboard practical exercises covering Maritime Law, Maritime Domain Awareness, Information Sharing, Counter-Narcotics, Force Protection, Asymmetric Threats, maritime uncrewed systems, damage control, firefighting, survival at sea, maritime communications, and boarding procedures. The exercise aims to strengthen regional capacity building, improve interoperability, and enhance collective maritime security among participating nations.

46. INS Malvan Commissioned



Why in News?

The Indian Navy commissioned INS Malvan, the second Mahe-class Anti-Submarine Warfare Shallow Water Craft (ASW-SWC), at Karwar. Built by Cochin Shipyard Limited (CSL), the warship has over 80% indigenous content, reinforcing the Aatmanirbhar Bharat initiative.

INS Malvan is designed for Anti-Submarine Warfare (ASW), underwater surveillance, mine warfare, and Low Intensity Maritime Operations (LIMO). It is the second of eight Mahe-class ASW-SWCs and the sixth of sixteen ASW-SWCs planned for induction into the Indian

Navy. Equipped with advanced indigenous sonar systems, lightweight torpedoes, ASW rocket launchers, torpedo decoy launchers, and modern electronic warfare systems, the vessel will enhance coastal defence, littoral security, and Maritime Domain Awareness (MDA). It is also the largest Indian warship to use a diesel engine–waterjet propulsion system.

Named after the historic coastal town of Malvan in Maharashtra, the ship reflects India's rich maritime heritage associated with Chhatrapati Shivaji Maharaj. The commissioning of INS Malvan significantly strengthens the Navy's anti-submarine capabilities and supports India's growing self-reliance in defence shipbuilding and maritime security.

47. India, Indonesia deepen defence partnership with BrahMos, Astra pacts



Special Features of BRAHMOS cruise missile

- Universal Missile for multiple platforms
- "Fire and Forget" principle of operation
- High supersonic speed all through the flight
- Long flight with varieties of trajectories
- Low radar signature
- Pin point accuracy & high lethal power



Guidance System

Advanced guidance system incorporating high manoeuvres & steep dive capabilities

Propulsion System

Air-breathing ramjet propulsion for fuel-efficiency & supersonic speed

Wings & Fins

For better stability & accurate direction of missile during the flight

Solid State Propellant

Solid-propellant rocket for initial acceleration of the missile

India and Indonesia have reached in-principle agreements for the procurement of an additional battery of the BrahMos supersonic cruise missile system and Astra Mk-1 beyond-visual-range air-to-air missiles, marking another milestone in the growing defence partnership between the two countries. Under the proposed arrangement, Bharat Dynamics Limited (BDL), which manufactures the Astra missile, will integrate the weapon system with the Indonesian Air Force's Su-30 fighters. The Astra Mk-1 is already in operational service with the Indian Air Force and is powered by a solid rocket motor, offering an engagement range of approximately 80-110 kilometres.

The Astra Mk-2, a longer-range variant of the indigenous beyond-visual-range air-to-air missile, is in the final phase of development and flight trials. The missile has already received clearance from the Defence Acquisition Council (DAC), paving the way for its eventual induction into service following the successful completion of trials. The BrahMos missile, jointly developed by India's Defence Research and Development Organisation (DRDO) and Russia's NPO Mashinostroyenia, has a range of over 290 kilometres and travels at speeds of up to Mach 2.8.

8. SCIENCE AND TECH

48. Sub-Orbital Launch Vehicle for Experiments (SOLVE)

Why in News?

The Indian Space Research Organisation (ISRO) successfully conducted the first static ground test of the solid motor for its Sub-Orbital Launch Vehicle for Experiments (SOLVE) at the Satish Dhawan Space Centre, Sriharikota.

What is SOLVE?

SOLVE is a solid propellant-based sub-orbital launch vehicle developed by ISRO as a cost-effective platform for conducting high-altitude and atmospheric experiments. It is primarily designed to test critical technologies under near real-flight conditions without the need for a full-fledged orbital launch.

A key objective of the vehicle is to support the Gaganyaan mission by validating the Integrated Parachute Test (IPT) system of the crew module.

Key Features

- Developed by ISRO for sub-orbital experimental missions.
- Uses a modified PSLV Strap-on Motor (PSOM), reducing development cost by leveraging proven technology.
- Employs a solid propulsion system with a modified slow-burning propellant for controlled flight.
- Equipped with Secondary Injection Thrust Vector Control (SITVC) for improved flight control and stability.
- Capable of simulating atmospheric re-entry conditions for testing space systems.

Applications

- Validation of the Gaganyaan crew module's parachute recovery system.
- Testing of atmospheric re-entry technologies at lower cost.
- Evaluation of experimental payloads under high-altitude conditions.
- Supports research in hypersonic technologies, atmospheric science, and microgravity experiments, contributing to India's indigenous space capabilities.

49. I-2SEA Submarine Cable System

Why in News?

A consortium comprising Microsoft, Singtel, Tata Communications, and Lightstorm has announced the development of the India–Southeast Asia (I-2SEA) Submarine Cable System to strengthen digital connectivity between India and Southeast Asia.

About I-2SEA

The I-2SEA is an undersea fibre-optic cable system that will connect India's east coast with Malaysia and Singapore. It aims to meet the growing demand for AI, cloud computing, and high-speed data transmission across the region.

Submarine fibre-optic cables form the backbone of global internet connectivity by carrying the majority of international data and telecommunication traffic.

Key Features

- Approximately 3,600 km long.
- Dual landing stations in India at:
 - Machilipatnam (Andhra Pradesh)
 - South Chennai (Tamil Nadu)
- Designed with carrier-neutral landing infrastructure, allowing multiple telecom operators to use the network.
- Features deep cable burial to protect against accidental damage and external threats.
- Will integrate with Lightstorm's SmartNet AI Fabric and Polarin platform for efficient network management.
- Expected to become operational by Q4 2029.

Significance

The cable system will enhance India–Southeast Asia digital connectivity, provide high-capacity, low-latency data transmission, and support the expanding AI, cloud computing, hyperscale data centres, and digital infrastructure ecosystem. It will also offer one of the fastest data routes between Singapore/Malaysia and Hyderabad, strengthening India's position as a regional digital hub.

50. India–Japan Relations: An Overview

India and Japan share long-standing civilisational ties rooted in Buddhism. Diplomatic relations were established in 1952, and over the decades the partnership has steadily evolved—from a Global Partnership (2000) to a Special Strategic and Global Partnership (2014).

Some important milestones include:

- Annual Summit mechanism (2006).
- Comprehensive Economic Partnership Agreement (CEPA), 2011.
- India–Japan Act East Forum (2017).
- Japan–India Vision 2025 for peace and prosperity in the Indo-Pacific.

Major Areas of Cooperation

Strategic and Defence

India and Japan have institutionalised security cooperation through mechanisms such as the 2+2 Ministerial Dialogue, Reciprocal Provision of Supplies and Services Agreement (2020), and regular military exercises including JIMEX, Malabar, Dharma Guardian, and Veer Guardian.

Economic Cooperation

Japan remains one of India's most important economic partners.

- Bilateral trade stood at USD 27.48 billion in FY 2025–26.
- Japan is the 5th largest source of FDI in India.
- Japanese Official Development Assistance (ODA) has supported major infrastructure projects, including the Mumbai–Ahmedabad High-Speed Rail, Delhi Metro, and other metro rail networks.

Connectivity and Technology

Cooperation has expanded to the development of North-East India through the India–Japan Act East Forum. In science and technology, ISRO and JAXA are jointly developing the LUPEX mission, while both countries are collaborating in AI, semiconductors and digital technologies.

51. Vikram-1: Charting India's Cosmic Future



The successful Vikram-1 mission makes India the third country after the US and China where a private company has independently reached orbit, marking a globally rare achievement by placing satellites into Low Earth Orbit (LEO) on its maiden orbital mission. It is designed to carry payloads of around 300-480 kg to Low Earth Orbit (LEO), catering specifically to the booming small satellite market.

Unique Materials and Methods: Vikram-1 stands out globally due to its innovative engineering:.

Carbon Composite Architecture: Unlike traditional rockets built from heavy metallic alloys, Vikram-1 extensively uses all-carbon composite structures.

This makes the rocket significantly lighter, increasing its fuel efficiency and payload capacity.

3D-Printed Engines: Features a 3D-printed liquid-fuelled Raman engine for precise orbital insertion and manoeuvres.

This reduces manufacturing time, parts count, and overall cost.

Solid Propulsion: The lower stages (Kalam series engines) utilize advanced solid propellants, offering high thrust and reliability.

Symbolic Tributes: The Maiden flight carries "Cosmic Bloom" (a floral artwork) and an 18-karat gold micro-rocket containing microscopic sculptures of Indian scientists C.V. Raman, Vikram Sarabhai, and A.P.J. Abdul Kalam.

52. AI Squatting

Why in News?

Cybersecurity researchers have identified AI Squatting as an emerging cyber threat in which attackers exploit AI hallucinations generated by Large Language Models (LLMs) instead of traditional software vulnerabilities.

What is AI Squatting?

AI Squatting is a cyberattack technique in which attackers exploit incorrect or fabricated information (hallucinations) generated by AI models.

When an AI chatbot or coding assistant invents a non-existent website, software package, or repository, attackers register or create those fake assets and use them to:

- Steal user credentials
- Distribute malware
- Spread ransomware
- Compromise software supply chains

Unlike conventional cyberattacks, AI Squatting exploits AI-generated misinformation rather than flaws in software code.

Types of AI Squatting

1. Phantom Squatting (Internet Domains)

In this attack:

- An AI chatbot generates a fake website or domain name.
- Attackers register that domain before anyone else.
- Users who trust the AI-generated link are redirected to malicious websites.

Possible consequences:

- Phishing attacks
- Credential theft
- Malware downloads
- Financial fraud

2. HalluSquatting (Software Supply Chain)

This attack targets developers using AI coding assistants.

- The AI suggests a non-existent software library or package.
- Attackers publish a malicious package using that exact name.
- Developers unknowingly install the fake package.

Possible consequences:

- Malware infection
- Backdoors in software
- Data theft
- Compromised enterprise systems

53. Proton Exchange Membrane (PEM) Fuel Cell

Why in News?

The Prime Minister flagged off India's first hydrogen-powered train, the NaMo Green Rail, on its maiden run along the 89-km Jind–Sonipat section in Haryana. The train is powered by a Proton Exchange Membrane (PEM) Fuel Cell, marking a major step towards clean and sustainable railway transportation.

What is a Proton Exchange Membrane (PEM) Fuel Cell?

A Proton Exchange Membrane (PEM) Fuel Cell is an electrochemical device that converts the chemical energy of hydrogen directly into electricity, without burning the fuel. In the NaMo Green Rail, the PEM fuel cell acts as a compact onboard power plant, generating electricity to run the train's traction motors. The only by-products are water vapour and heat, making it a zero-emission technology.

Developed By

- Technical specifications: Research Designs and Standards Organisation (RDSO)
- System engineering and integration: M/s Medha Servo Drives

How Does a PEM Fuel Cell Work?

1. Hydrogen Enters the Anode

Hydrogen gas stored in high-pressure cylinders is supplied to the anode, where a catalyst splits hydrogen molecules into:

- Protons (H^+)
- Electrons (e^-)

2. Proton Exchange Membrane

The polymer membrane allows only protons to pass through while blocking the electrons.

3. Electricity Generation

The electrons are forced to travel through an external circuit, generating electric current that powers the train's motors.

4. Water Formation at the Cathode

At the cathode, the protons and electrons combine with oxygen from the air to produce:

- Water vapour
- Heat

Thus, the fuel cell produces electricity without releasing carbon dioxide or other harmful pollutants.

Key Technical Features of the NaMo Green Rail

Hybrid Energy Storage System

The train has two Hydrogen Driving Power Cars (DPCs), each combining:

- PEM fuel cells
- Lithium Iron Phosphate (LFP) batteries

The batteries provide additional power during acceleration and store excess energy, ensuring smooth and reliable operation.

High-Pressure Hydrogen Storage

- Hydrogen is stored onboard in cylinders.
- Refuelling is carried out at 350 bar.
- Hydrogen is supplied from a 500-bar green hydrogen electrolysis and compression facility at Jind.

Advanced Safety System

Since hydrogen is highly flammable, colourless, and odourless, the train is equipped with:

- Hydrogen leak detectors
- Flame sensors
- Heat sensors
- Automatic hydrogen supply shut-off system

Continuous Ventilation

The hydrogen power cars have active ventilation systems that immediately disperse any leaked hydrogen, preventing dangerous gas accumulation.

Key Terms

Fuel Cell

An electrochemical device that converts the chemical energy of a fuel directly into electricity without combustion.

Proton Exchange Membrane (PEM)

A special polymer membrane that allows only hydrogen ions (protons) to pass through while blocking electrons, enabling electricity generation.

Green Hydrogen

Hydrogen produced by electrolysis of water using electricity generated from renewable energy sources such as solar or wind power.

Lithium Iron Phosphate (LFP) Battery

A lithium-ion battery known for its high safety, long life, thermal stability, and suitability for electric mobility applications.

54. India Launches First Postdoctoral Fellowship in Bioastronautics

Why in News?

The Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) and ISRO's Human Space Flight Centre (HSFC) have launched India's first Postdoctoral Fellowship in Bioastronautics and Space Medicine to develop expertise for future human space missions under the Gaganyaan programme.

What is the Fellowship?

It is a two-year postdoctoral programme designed to train researchers in bioastronautics—the study of how the space environment affects the human body and how to protect astronauts during space missions.

The programme is a joint initiative of SCTIMST, Thiruvananthapuram, and ISRO's Human Space Flight Centre (HSFC), Bengaluru.

Objectives

- Develop specialists in space medicine and bioastronautics.
- Study the effects of microgravity, cosmic radiation, isolation, and other extreme space conditions on the human body.
- Develop biomedical technologies to ensure astronaut health and safety during long-duration missions.
- Strengthen India's indigenous capabilities in human spaceflight research.

Key Features

- Duration: 2 years
- Eligibility: Candidates with postgraduate medical degrees, super-speciality qualifications, or PhDs in relevant disciplines.
- Training Centres: SCTIMST (Thiruvananthapuram) and HSFC (Bengaluru).
- Annual Intake: Two fellows every year, beginning from the July academic session.

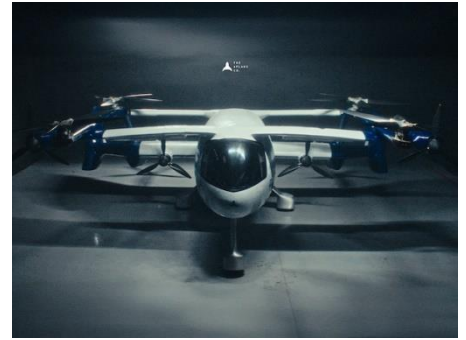
Background

- April 2025: SCTIMST and HSFC signed an MoU for collaboration in space medicine research.
- November 2025: A Centre for Space Medicine Research was established at SCTIMST.
- June 2026: An implementing agreement formalised the fellowship programme.

55. India's First eVTOL Aircraft (e200X)

Why in News?

Chennai-based The ePlane Company, incubated at IIT Madras, has unveiled e200X (PT-01)—India's first full-scale prototype of an Electric Vertical Take-Off and Landing (eVTOL) aircraft.



What is e200X?

The e200X is an electric vertical take-off and landing (eVTOL) aircraft, also known as an electric air taxi. It is a battery-powered, zero-emission aircraft that takes off and lands vertically like a helicopter before transitioning to forward flight like a conventional aeroplane.

It has been designed, engineered, and assembled in-house by The ePlane Company.

How Does It Work?

Dedicated Propulsion System

Instead of using rotating engines, the e200X uses:

- Six vertical lift rotors for take-off, landing, and hovering.
- Four forward propellers for cruise flight.

Distributed Electric Propulsion (DEP)

The aircraft uses multiple electric motors. If one motor or propeller fails, the remaining motors automatically redistribute thrust, enabling a safe landing and reducing the risk of single-point failures.

Patented Synergistic Lift Architecture

Its specially designed wings generate aerodynamic lift even at low speeds, improving stability while keeping the aircraft compact.

Advanced Computing & Sensor Fusion

Powered by an 800V high-voltage electric powertrain and the NVIDIA IGX Thor platform, the aircraft integrates data from cameras, LiDAR, and radar to provide a real-time 360° situational view for safe navigation in congested urban environments.

Key Features

- Compact Footprint: Measures 8 m × 11 m, allowing operations from existing helipads and hospital rooftops without dedicated vertiports.
- Lightweight Structure: Built using carbon-fibre composite materials with a maximum gross weight of 2 tonnes.
- Capacity: Carries one pilot and a 200 kg payload, accommodating up to two passengers or one trauma patient with a paramedic.
- Range: Approximately 110 km on a single battery charge.

- **Digital Twin Validation:** Designed and tested virtually using NVIDIA Omniverse before physical assembly, supported by over 10,000 km of flight testing on subscale prototypes.

Key Terms

eVTOL (Electric Vertical Take-Off and Landing)

An aircraft powered by electricity that can take off and land vertically like a helicopter and then fly horizontally like an aeroplane.

Distributed Electric Propulsion (DEP)

A propulsion system that uses multiple electric motors. If one motor fails, the others compensate, improving flight safety and efficiency.

LiDAR (Light Detection and Ranging)

A remote sensing technology that uses laser pulses to measure distances and create precise 3D maps of the surroundings for navigation.

Digital Twin

A virtual replica of a physical system used to simulate, test, and optimise its performance before actual manufacturing.

56. White Rabbit Technology-based Indian Standard Time (IST) Dissemination Demonstration Network



Why in News?

The Union Minister for Consumer Affairs, Food & Public Distribution commissioned the White Rabbit Technology-based Indian Standard Time (IST) Dissemination Demonstration Network at the Regional Reference Standard Laboratory (RRSL), Bengaluru, marking a major step towards building a secure and indigenous time-synchronisation infrastructure for India.

About the IST Dissemination Demonstration Network

The IST Dissemination Demonstration Network is a secure, tamper-resistant network that distributes Indian Standard Time (IST) across critical digital infrastructure with extremely high precision.

It is a collaborative initiative of:

- Department of Consumer Affairs
- CSIR–National Physical Laboratory (CSIR–NPL)
- Indian Space Research Organisation (ISRO)

The network disseminates IST that is directly traceable to UTC (NPLI), India's official realization of Coordinated Universal Time, using White Rabbit (WR) Technology based on the Precision Time Protocol (PTP).

Key Features

- Enables highly accurate and secure distribution of Indian Standard Time (IST).
- Uses White Rabbit (WR) Technology, capable of synchronising network devices with microsecond to nanosecond accuracy.
- Operates through terrestrial optical fibre networks, making it more secure than satellite-based timing systems.
- Designed for critical sectors such as banking, financial markets, 5G/6G telecommunications, smart grids, transportation, and digital governance.
- A successful pilot demonstration was conducted between RRSL Bengaluru and the National Stock Exchange (NSE), Chennai.

What is White Rabbit Technology?

White Rabbit (WR) is an advanced extension of the Precision Time Protocol (IEEE 1588) that combines high-precision time synchronisation with standard Ethernet networking.

Unlike satellite-based systems such as GPS, White Rabbit uses optical fibre networks, making it highly resistant to spoofing, jamming, and signal disruptions, while providing microsecond-to-nanosecond accuracy.

57. Bharat 6G Alliance & Spectrum Roadmap for 6G in India

Why in News?

The Bharat 6G Alliance (B6GA) has expanded to 90 members, while the Department of Telecommunications (DoT) has released the Spectrum Roadmap for 6G in India to accelerate the country's vision of becoming a global leader in 6G technology.

What is the Bharat 6G Alliance (B6GA)?

The Bharat 6G Alliance (B6GA) is an industry- and academia-led collaborative platform established to drive research, innovation, standardisation, and indigenous technology development for 6G communications in India.

It brings together stakeholders from:

- Telecom service providers
- Telecom equipment manufacturers
- Startups
- Research and Development (R&D) institutions
- Academic institutions
- Other telecom ecosystem partners

As of 15 July 2026, the Alliance has 90 members.

Objectives of B6GA

- Promote indigenous 6G research and innovation.
- Strengthen India's Intellectual Property Rights (IPR) ecosystem.
- Encourage collaboration between industry, academia, startups, and research institutions.

- Identify technology gaps and develop advanced 6G testbeds.
- Support implementation of India's 6G Vision.

Key Terms



6G

The sixth generation of wireless communication technology expected to provide ultra-high data speeds, extremely low latency, AI-native networks, integrated sensing, and ubiquitous connectivity, enabling applications such as holographic communication, immersive extended reality (XR), and advanced automation.

Terahertz (THz) Communication

A next-generation wireless communication technology that uses terahertz-frequency spectrum to achieve extremely high data transmission rates over short distances.

IMT-2030

The International Mobile Telecommunications-2030 (IMT-2030) framework developed by the ITU, which defines the global vision and technical requirements for 6G mobile communication systems.

58. Department of Space (DoS) Workforce Vacancy

Why in News?

The Department of Space (DoS) recorded its highest workforce vacancy rate in 25 years, with nearly 28% of sanctioned posts vacant during 2025–26, raising concerns over manpower availability for India's expanding space programme.

The Department of Space (DoS) is the apex government department responsible for formulating India's space policy and overseeing ISRO and other space institutions. Functioning under the Prime Minister's Office (PMO), the department currently has 5,632 vacancies out of 20,269 sanctioned posts, leaving staffing at just 72.2%. Employee strength has declined from 17,222 in 2019–20 to 14,637 in 2025–26, with vacancies largely affecting scientists, engineers, and technical personnel.

The manpower shortage comes at a time when India is pursuing major missions such as Gaganyaan, the Next Generation Launch Vehicle (NGLV), future Chandrayaan, Mars and Venus missions, and the proposed Bharatiya Antariksh Station. To address the gap, the DoS has initiated recruitment for over 2,300 posts, with appointments expected before the end of 2026.

59. Sub-Orbital Launch Vehicle for Experiments (SOLVE)



Why in News?

ISRO successfully conducted the first static ground test of the Sub-Orbital Launch Vehicle for Experiments (SOLVE) at the Satish Dhawan Space Centre (SDSC), Sriharikota.

About SOLVE

The Sub-Orbital Launch Vehicle for Experiments (SOLVE) is a solid propellant-based sub-orbital launch vehicle developed by ISRO as a cost-effective test platform for atmospheric and high-altitude experiments. It is primarily designed to validate the Integrated Parachute Test (IPT) system of the Gaganyaan crew module by simulating atmospheric re-entry conditions without requiring a full-fledged orbital launch.

SOLVE uses a modified PSLV Strap-on Motor (PSOM) with a slow-burning solid propellant and Secondary Injection Thrust Vector Control (SITVC) for stable flight. During the mission, it carries the payload to an altitude of about 10–17 km, where the crew module separates and deploys a sequence of 10 parachutes before making a safe splashdown. Besides supporting the Gaganyaan mission, SOLVE will also be used for hypersonic technology demonstrations, atmospheric research, and microgravity experiments, strengthening India's indigenous space research capabilities.

60. VIJAY Roadmap for the Indian Army

Why in News?

The Chief of the Army Staff, General Dhiraj Seth, unveiled the VIJAY Roadmap for the modernization of the Indian Army, aligned with the Ministry of Defence's Decade of Transformation (2023–2032).

About the VIJAY Roadmap

The VIJAY Roadmap is the Indian Army's long-term modernization strategy aimed at building a technology-driven, digitally enabled, self-reliant, and multi-domain capable force. Guided by the vision of Viksit Bharat 2047, it seeks to enhance operational readiness, integrate emerging technologies, strengthen tri-service jointness, and promote indigenous defence capabilities under Aatmanirbhar Bharat.

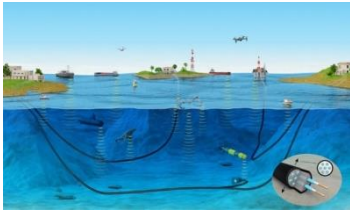


The roadmap is based on five core pillars represented by the acronym VIJAY:

- V – Vigilance: Enhanced operational readiness and border security.
- I – Innovation and Transformation: Adoption of advanced technologies and modern military doctrines.

- J – Jointness and Integration: Greater synergy among the Army, Navy, Air Force, and civil agencies through a Whole-of-Nation approach.
- A – Atmanirbharta: Promoting indigenous defence technologies under the principle of "Winning Our Wars with Indigenous Solutions."
- Y – Yodha First: Focusing on the training, welfare, and technological upskilling of soldiers, including Agniveers, veterans, and Veer Naris.

61. I-2SEA Submarine Cable System



Why in News?

A consortium comprising Microsoft, Singtel, Tata Communications, and Lightstorm has announced the India–Southeast Asia (I-2SEA) Submarine Cable System to strengthen digital connectivity between India and Southeast Asia.

About I-2SEA

The India–Southeast Asia (I-2SEA) is an approximately 3,600-km submarine fibre-optic cable system that will connect India's east coast with Malaysia and Singapore, enhancing high-speed digital connectivity across the region. It is designed to meet the growing demand for artificial intelligence (AI), cloud computing, hyperscale data centres, and enterprise services. The cable will have landing stations at Machilipatnam and South Chennai, providing one of the fastest data routes between Singapore/Malaysia and Hyderabad through Lightstorm's terrestrial network.

The system features carrier-neutral landing infrastructure, interoperable cable architecture, deep cable burial for protection, and integration with SmartNet AI Fabric for efficient network management. Expected to be operational by Q4 2029, the project will strengthen India's digital infrastructure, support AI and cloud ecosystems, and improve low-latency connectivity with Southeast Asia.

Submarine Cables: These are undersea fibre-optic cables that carry the majority of global internet, telecom, and data traffic, forming the backbone of international digital communication.

62. Mission Aagaman: Vikram-1



Why in News?

Skyroot Aerospace successfully launched Vikram-1 under Mission Aagaman, making it India's first privately developed orbital-class rocket to place multiple payloads into Low Earth Orbit (LEO).

About Mission Aagaman

Mission Aagaman is the maiden orbital mission of Vikram-1, developed by Skyroot Aerospace and authorised by IN-SPACe. It marks the first orbital launch by an Indian private company,

demonstrating India's growing private space capabilities under the Indian Space Policy 2023. The mission aims to validate indigenous private orbital launch technology and establish the commercial viability of private launch services.

The mission deployed multiple payloads into a 450-km Low Earth Orbit, including SCOPE (Skyroot Aerospace), SOLARAS S3 (Grahaa Space), DCUBED technology demonstration payload, and Embrace, a robotic space debris-capture payload by CosmoServe Space. It also carried symbolic payloads, including the Cosmic Bloom artwork and an 18-karat gold micro-rocket featuring microscopic sculptures of C. V. Raman, Vikram Sarabhai, and A. P. J. Abdul Kalam.

About Vikram-1

Vikram-1 is India's first privately developed orbital launch vehicle, designed to launch small satellites into Low Earth Orbit (LEO). Built by Skyroot Aerospace, it can carry up to 350 kg to LEO and is designed as a cost-effective, commercial launch vehicle for communication, Earth observation, navigation, scientific research, and technology demonstration missions. The rocket features an all-carbon composite structure, solid-fuel boosters, and a 3D-printed liquid rocket engine, enabling lightweight construction and improved performance. Its successful launch marks a major milestone in India's commercial space ecosystem and highlights the success of IN-SPACe-led reforms in encouraging private participation in the space sector.

63. DAE Inaugurates World's First Nuclear Heat-Based Hydrogen Production Facility



Department of Atomic Energy (DAE) has inaugurated the world's first Hydrogen Production Facility based on the Copper–Chlorine (Cu–Cl) Thermochemical Cycle using nuclear process heat from the Fast Breeder Test Reactor (FBTR) at the Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam. The facility demonstrates the indigenous Cu–Cl thermochemical hydrogen production technology developed by the Bhabha Atomic Research Centre (BARC) and integrates it with nuclear process heat.

Purpose: The plant has been established as a technology demonstrator to validate carbon-free hydrogen production using nuclear energy and to facilitate future commercial-scale deployment.

Bhabha Atomic Research Centre (BARC)

Headquarters: Trombay, Mumbai, Maharashtra.

Administrative Control: Functions under the Department of Atomic Energy (DAE), which is directly under the Prime Minister of India.

Founder: India's nuclear programme was conceived by Dr. Homi Jehangir Bhabha.

Established the Tata Institute of Fundamental Research (TIFR) in 1945 to advance nuclear science research.

9. SPORTS NEWS

64. 135th IndianOil Durand Cup



Why in News?

The trophy tour for the 135th IndianOil Durand Cup commenced in Guwahati on 16 July 2026, marking the beginning of the tournament's promotional activities ahead of its scheduled kick-off.

About the Durand Cup

The Durand Cup is the oldest football tournament in Asia and one of the oldest existing football competitions in the world. Instituted in 1888, it is named after Sir Mortimer Durand, a British diplomat and civil servant.

The tournament is conducted annually and is regarded as one of India's most prestigious domestic football competitions.

Key Highlights

- The trophy set comprises three historic trophies:
 - Durand Cup
 - President's Cup
 - Simla Trophy

The 135th edition will be held from 25 July to 23 August 2026.

- Matches will be played across five host cities:
 - Kolkata
 - Guwahati
 - Shillong
 - Imphal
 - Ranchi
- Guwahati will host six Group F matches at the Indira Gandhi Athletic Stadium, Sarusajai, from 1–13 August 2026.
- Group F features NorthEast United FC, Bodoland FC, Karbi Anglong Morning Star FC, and FC 1 Club.

65. Spain wins FIFA World Cup 2026

Why in News?

Spain defeated Argentina 1–0 after extra time to win the 2026 FIFA World Cup, securing their second FIFA World Cup title.

About FIFA World Cup 2026

The 2026 FIFA World Cup was the 23rd edition of the FIFA World Cup. It was jointly hosted by the United States, Canada, and Mexico from 11 June to 19 July 2026.



This edition created history as:

- First FIFA World Cup with 48 teams (earlier 32).
- First World Cup jointly hosted by three countries.
- Mexico became the first country to host World Cup matches in three different editions (1970, 1986 and 2026).

Final Match

- Champions: Spain
- Runners-up: Argentina
- Final Score: Spain 1–0 Argentina (After Extra Time)
- Winning Goal: Ferran Torres (106th minute)
- Venue: MetLife Stadium, East Rutherford, New Jersey, USA

Spain won their second FIFA World Cup title, adding to their 2010 triumph.

Award	Winner	Country
Golden Ball (Best Player)	Rodri	Spain
Golden Boot (Top Scorer)	Kylian Mbappé	France
Golden Glove (Best Goalkeeper)	Unai Simón	Spain
Best Young Player	Pau Cubarsí	Spain
Fair Play Award	Netherlands	Netherlands

Spain's Achievements

- Won their second FIFA World Cup title after the 2010 victory.
- Became one of the few nations to win multiple FIFA World Cups.
- Dominated the tournament with disciplined possession-based football and a strong defensive record.

Records & Highlights

- Lamine Yamal (19 years, 6 days) became the third-youngest player to win a FIFA

World Cup.

- Pau Cubarsí won the Best Young Player Award.
- Rodri and Pau Cubarsí each completed 100+ passes in the final, a rare achievement in FIFA World Cup finals.
- Ferran Torres' extra-time goal decided the championship.

Facts

- Edition: 23rd FIFA World Cup
- Hosts: USA, Canada & Mexico
- Champions: Spain
- Runners-up: Argentina
- Venue of Final: MetLife Stadium, East Rutherford, New Jersey (USA)
- First 48-team FIFA World Cup
- First FIFA World Cup hosted by three countries
- Mexico became the first nation to host World Cup matches in three different editions (1970, 1986, 2026)

66. First-Ever Mixed Disability Ashes 2027**Why in News?**

England will host Australia in the first-ever Mixed Disability Ashes in 2027, marking a historic milestone in the growth of international disability cricket.

The Mixed Disability Ashes will be the first bilateral Ashes series featuring mixed disability men's teams from England and Australia. It will be played in the T20 International (T20I) format as part of England's 2027 Ashes summer, alongside the Men's and Women's Ashes. The initiative aims to expand international opportunities for cricketers with disabilities and promote greater inclusion in the sport.

The series is expected to enhance the visibility of disability cricket, encourage greater investment in inclusive sports, and strengthen efforts to integrate disability cricket into the mainstream international cricket calendar.

67. The Durand Cup**Why in News?**

The President of India unveiled and flagged off the three winner trophies of the 2026 Durand Cup at a ceremony held at the Rashtrapati Bhavan Cultural Centre.

About the Durand Cup

The Durand Cup (officially the IndianOil Durand Cup) is Asia's oldest and the world's third-oldest surviving football

tournament, established in 1888 by Sir Henry Mortimer Durand at Annadale, Shimla. Organised by the Durand Football Tournament Society (DFTS) under the aegis of the Indian Army, Navy, and Air Force, it is regarded as the season-opening football tournament in India, featuring clubs from the Indian Super League (ISL), I-League, and the Armed Forces. The tournament shifted its permanent base to New Delhi in 1940, and Mohammedan Sporting Club became the first civilian team to win the title that year.

Unique Feature: Three Winner Trophies

Unlike most football tournaments, the Durand Cup awards three trophies to the champions:

- The Durand Cup – the original trophy instituted in 1888.
- The Shimla Trophy – presented by the residents of Shimla in 1905.
- The President's Cup – introduced in 1956 by Dr. Rajendra Prasad, India's first President, as a permanent keepsake.

2026 Edition

The 2026 Durand Cup will be hosted across five cities:

- Kolkata
- Guwahati
- Imphal
- Shillong
- Ranchi

The tournament continues to promote Indian football by bringing together professional clubs, historic football institutions, and Services teams.

Facts

- Founded: 1888
- Founder: Sir Henry Mortimer Durand
- Oldest football tournament in Asia
- Third-oldest surviving football tournament in the world
- Organised by: Durand Football Tournament Society (DFTS) under the Indian Armed Forces
- Most successful club: Mohun Bagan Super Giant (17 titles)
- First civilian champion: Mohammedan Sporting Club (1940)

68. Neeru Dhanda clinches gold in Women's trap event at National Shooting Championship in New Delhi

In shooting, Asian Championships gold medallist Neeru Dhanda claimed the women's trap gold at the National Shooting Championship at Dr Karni Singh Range in Delhi today.

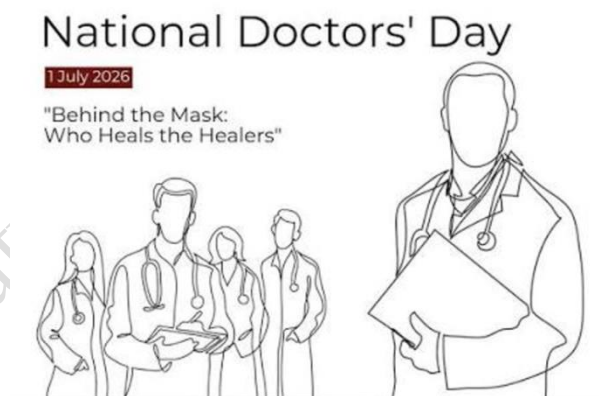
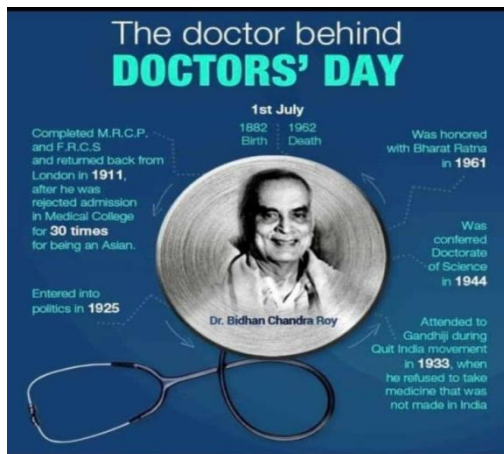
Delhi's Kirti Gupta took silver, while Neeru's Madhya Pradesh teammate Pragati Dubey won bronze. In junior men's trap, Aryavansh Tyagi won gold, Keshav Chauhan silver, and Zuhair Khan bronze. Madhya Pradesh took women's trap team gold, Delhi silver, and Punjab bronze.

Haryana claimed junior men's trap team gold, Gujarat silver, and Rajasthan bronze. Delhi won junior women's trap team gold, Tamil Nadu silver, and Rajasthan bronze.



10. IMPORTANT DAYS

69. National Doctor's day

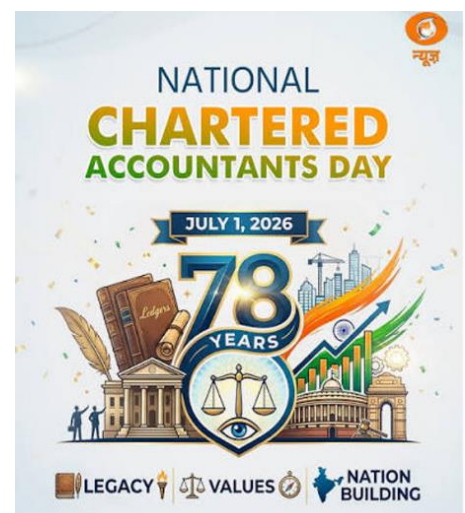


National Doctors' Day is celebrated in India on July 1 every year to honor the birth and death anniversary of the legendary physician, Dr. Bidhan Chandra Roy. The 2026 theme for the observance in India was "Behind the Mask: Who Heals the Healers?", focusing on the mental, emotional, and physical well-being of medical professionals

70. 78TH CA Day 2026

78th National Chartered Accountant (CA) Day is being celebrated today across the country. The day marks the establishment of the Institute of Chartered Accountants of India (ICAI) in 1949 and honors the vital role Chartered Accountants play in financial transparency, corporate governance, and economic growth.

Vice President C.P. Radhakrishnan will participate in the 78th CA Day celebrations as the chief guest at Vigyan Bhawan in New Delhi. The programme is scheduled to begin at 03:30 PM. ICAI President Prasanna Kumar D and Vice-



President Mangesh Kinare will be present on the occasion. Prime Minister Narendra Modi extended greetings to the Chartered Accountants on the occasion of Chartered Accountants' Day. In a social media post, Mr Modi said that they have long been trusted partners in India's economic journey. He noted that through their commitment to transparency and professional excellence, they strengthen the country's financial systems, support businesses, encourage entrepreneurship and inspire confidence among investors. He added that their expertise contributes significantly to economic growth and nation-building. The Prime Minister said that as India is moving towards becoming a Viksit Bharat, their efforts help create an environment where enterprise can flourish and opportunities can expand for all.

71. Other Important Days

Date	Day	Significance
1 July	National Doctor's Day (India)	Observed to honour doctors and commemorate the contribution of Dr. Bidhan Chandra Roy towards healthcare and medical education in India.
7 July	Global Forgiveness Day	Originated in Canada. Promotes forgiveness as a core human value and encourages people to let go of resentment for peaceful co-existence.
11 July	World Population Day	Started by the United Nations (UN) in 1989. Raises awareness about population-related issues such as family planning, sustainable development, and gender equality.
12 July	International Day of Hope	Encourages hope, resilience, and international cooperation during global challenges.
17 July	World Day for International Justice	Marks the adoption of the Rome Statute and promotes international criminal justice and accountability.
18 July	Nelson Mandela International Day	Celebrates the life and values of Nelson Mandela and encourages voluntary service for society.
20 July	World Chess Day	Marks the establishment of the International Chess Federation (FIDE) and promotes chess as a game of strategy and learning.
20 July	International Moon Day	Commemorates the first human landing (Apollo 11) on the Moon in 1969 and celebrates achievements in space exploration.
22 July	National Flag Adoption Day (India)	Marks the adoption of the Indian National Flag by the Constituent Assembly on 22 July 1947 and celebrates national unity.
29 July	International Tiger Day	Promotes tiger conservation and protection of their natural habitats worldwide.

11. GOVT. SCHEMES

72. VB-GRAM G Act Replaces MGNREGA



The Viksit Bharat – Guarantee for Rozgar and Aajeevika Mission (Gramin) Act, 2025, or VB-G RAM G Act, came into force across rural India on 1 July 2026. It replaced the Mahatma Gandhi National Rural Employment Guarantee Act, 2005, which had provided a statutory guarantee of wage employment in rural areas.

Statutory Wage Employment Guarantee

The VB-G RAM G Act raises the guaranteed wage employment for eligible rural households from 100 days to 125 days in a financial year. The scheme continues the legal framework of rural employment guarantee under a central law passed by Parliament.

Wage Rates and Funding Pattern

The Ministry of Rural Development notified revised wage rates on 30 June 2026. The national average daily wage increased from ₹298.8 under MGNREGA to ₹327.4 under VB-G RAM G, with an average rise of ₹28.6 per day. An interim wage floor of ₹300 per day applies from 1 July 2026, and no notified wage can fall below this level. The interim allocation for states and Union Territories is ₹95,692.31 crore for transition support and wage payments. The funding pattern for most states is 60:40 between the Centre and the States, while North-Eastern and Himalayan states receive 90:10 support.

Implementation, Job Cards and Transition

Existing e-KYC-verified MGNREGA job cards remain valid until new Gramin Rozgar Guarantee Cards are issued. Data transfer to the new system is expected to take six months and continue until 31 December 2026. About two dozen states and Union Territories had issued the required notifications by 30 June 2026, and 29 states and Union Territories had made budgetary provisions.

73. PM-YASASVI Scheme

PM YASASVI Scheme.

A flagship scholarship scheme by the Ministry of Social Justice & Empowerment for OBC, EBC and DNT students.

Ministry of Social Justice & Empowerment
Government of India

- Financial support for Top Class School Education & Top Class College Education.
- For meritorious students belonging to OBC, EBC and DNT communities.
- Covers tuition fees, living allowance, books & stationery and laptop assistance.
- Scholarship amount transferred directly to bank account through DBT.

Merit Based Selection | At least 30% slots for girls | Max. two siblings from a family | Support for quality education and a better future

Why in News?

The Minister of State for Social Justice and Empowerment recently informed the Lok Sabha about the implementation of the PM-YASASVI Scheme, which provides scholarships to students from socially and economically disadvantaged communities.

The PM-YASASVI (Prime Minister Young Achievers Scholarship Award Scheme for Vibrant India) is an umbrella scholarship scheme aimed at supporting students from Other

Backward Classes (OBCs), Economically Backward Classes (EBCs), and Denotified Tribes (DNTs) by reducing financial barriers to quality education. Students with an annual family income of up to ₹2.5 lakh are eligible to avail benefits under the scheme.

Implemented by the Department of Social Justice and Empowerment, Ministry of Social Justice and Empowerment, the scheme comprises four components: Pre-Matric Scholarship, Post-Matric Scholarship, Top Class Education in Schools, and Top Class Education in Colleges. It seeks to promote inclusive and equitable education while improving educational opportunities for students from disadvantaged communities.

74. NIDAR 2.0

- NIDAR 2.0 stands for National Innovation Challenge for Drone Application and Research.
- It is a National Innovation Challenge for students to build smarter drones powered by an Indian-made chip.
- It is under SwaYaan initiative- Capacity Building for Human Resource Development in Unmanned Aircraft Systems (Drone and Allied Technologies).

This 2026-27 edition is the second edition of the challenge.

- The first edition of NIDAR 2025-26 was launched in March 2025.
- Participation: It drew 3,448 students from 22 States, 4 Union Territories and 109 cities, who built autonomous drone solutions for Disaster Management and Precision Agriculture.
- Ninety-three teams reached the Grand Finale, of which Twenty-four teams won prizes worth a total of Rs. 40 Lakh.

- **Nodal Ministry:** It has been hosted by Ministry of Electronics and Information Technology (MeitY), in collaboration with Drone Federation India (DFI).
- **Features:**
 - It moves the focus from conventional airframes to autonomous systems, indigenous avionics and core drone components.
 - Two tracks: The challenge runs across two tracks.
 - Track 1, Drone Innovation: It tasks student teams with building fully autonomous swarm drones that can locate survivors and deliver medical parcels in a disaster zone without any external communication network.
 - It also challenges teams to develop a GPS-denied drone capable of navigating confined indoor spaces for industrial inspection.
 - Track 2, Component Innovation: It challenges teams to design an indigenous flight controller and autopilot built around the VEGA processor, using indigenous electronic components.
 - After technical evaluation, the top 100 teams will each receive two VEGA processors kits for development, testing and integration.
 - About VEGA processor: It is a family of indigenous microprocessors designed by the Centre for Development of Advanced Computing (C-

DAC) under MeitY's Microprocessor Development Programme, based on the open-standard RISC-V architecture.

- By placing this processor at the centre of the Component Innovation track, NIDAR 2.0 encourages students to build the control systems of Indian drones on Indian-made chips.
- **Prizes:** It offers a cash prize of over Rs 65 lakh.
 - Winning teams will also receive corporate internships, incubation support and cloud computing credits to help turn their prototypes into commercial products.

12. ENVIRONMENT

75. Manasbal Lake



Why in News?

Manasbal Lake in Jammu & Kashmir has shown signs of ecological recovery, marked by the return of migratory birds, indicating improvements in its wetland ecosystem.

About Manasbal Lake

Manasbal Lake is a freshwater lake located in the Ganderbal district of Jammu & Kashmir, in the Jhelum Valley at an altitude of about 1,585–1,600 metres above sea level.

It is regarded as the deepest freshwater lake in India, with a maximum depth of around 13 metres (43 feet). Its name is believed to have been derived from Lake Manasarovar.

Geographical Features

- Location: Ganderbal district, Jammu & Kashmir
- Altitude: Approximately 1,585–1,600 m
- Type: Freshwater Lake
- Maximum Depth: Around 13 m (deepest freshwater lake in India)

Surroundings

The lake is surrounded by:

- Baladar Mountains
- Karewa Plateau (north)
- Ahtung Hills (south), known for limestone deposits

Biodiversity

Flora

The lake supports a rich diversity of aquatic vegetation, including:

- Emergent macrophytes

Biodiversity

Fauna

It provides habitat for:

- Zooplankton

- | | |
|--|--|
| <ul style="list-style-type: none">• Submerged macrophytes• Floating macrophytes• Phytoplankton | <ul style="list-style-type: none">• Benthic organisms• Several fish species, including:<ul style="list-style-type: none">o Schizothorax nigero Schizothorax esocinuso Cyprinus carpio (Common Carp)o Neomacheilus latius |
|--|--|

Why is its Ecological Recovery Significant?

The recent return of migratory birds indicates:

- Improved water quality.
- Recovery of aquatic habitats.
- Better ecological balance.
- Success of conservation and restoration efforts.

Healthy bird populations are often considered bio-indicators of a healthy wetland ecosystem.

Key Terms

Monomictic Lake

A lake that undergoes one complete mixing of its water column each year, usually due to seasonal temperature changes.

Thermal Stratification

The formation of distinct water layers based on temperature, with warmer water near the surface and colder water at greater depths.

Thermocline

A transition layer in a lake where water temperature decreases rapidly with increasing depth.

Macrophytes

Large aquatic plants that grow in or near water bodies and provide habitat, oxygen, and food for aquatic organisms.

76. India's First Geothermal Wells Commissioned at Puga Valley



Why in News?

India has commissioned its first and deepest geothermal wells at Puga Valley, Ladakh, marking a major milestone in the country's clean energy transition and supporting Ladakh's vision of becoming a carbon-neutral region.

The Puga Geothermal Project

The project involves drilling two geothermal wells, each reaching a depth of 1,000 metres, to harness the Earth's internal heat for electricity generation.

It is expected to support India's first 1 MW demonstration-scale geothermal power plant, providing a reliable source of renewable energy.

Key Highlights

Location

- Puga Valley, Changthang region, Ladakh
- Situated at an altitude of over 14,000 feet
- About 22 km from the Salt Lake Valley

Depth

- Two wells drilled to 1,000 metres, making them India's deepest geothermal wells.

Temperature

- A temperature of 135°C has been recorded at a depth of 400 metres.
- Further studies are underway to evaluate the reservoir's commercial viability.

Executing Agencies

- ONGC Energy Centre
- Ladakh Administration
- Ladakh Autonomous Hill Development Council (LAHDC), Leh

About Puga Valley

Puga Valley is one of India's most promising geothermal regions.

Location

- South-eastern Changthang region of Ladakh.

Known For

- Natural hot sulphur springs
- Active geothermal activity
- Rich geothermal energy potential
- Scenic high-altitude landscape

77. Lestes paloti: New Damselfly Species Discovered in the Western Ghats



Why in News?

A team of odonatologists has discovered a new species of spreadwing damselfly, *Lestes paloti*, in the Western Ghats of Kerala. The discovery has been published in the International Journal of Odonatology.

Lestes paloti belongs to the family Lestidae under the order Odonata (dragonflies and damselflies). The species is named after Dr. Muhamed Jafer Palot of the Zoological Survey of India (ZSI), Kozhikode, in recognition of his contributions to the study of odonates and the biodiversity of the Western Ghats. It has been recorded from six districts of Kerala—Kannur, Kozhikode, Wayanad, Malappuram, Palakkad, and

Ernakulam—and is typically found in scrub vegetation around homesteads and laterite hillocks, often away from open water bodies.

The species is distinguished by its seasonal colour change, appearing brown during the dry season and bluish during the monsoon, along with unique male genital characteristics. The discovery also corrected earlier records that had mistakenly identified it as *Lestes nodalis* in southern India. It highlights the rich but understudied biodiversity of the Western Ghats and underscores the need to conserve laterite hillocks and other non-forest freshwater habitats.

78. *Colobus Congoensis*: Newly Identified Monkey Species



Why in News?

An international team of scientists has confirmed a new monkey species, scientifically named *Colobus congoensis* (Congo Colobus), discovered in the Democratic Republic of Congo (DRC).

Colobus congoensis belongs to the *Colobus* genus, a group of arboreal African monkeys known for their leaf-based diet and absence of thumbs, an adaptation that helps them move efficiently through tree canopies. The species is found exclusively in the Lomami National Park in the central-eastern DRC, where it inhabits the upper canopy of tropical rainforests. It is characterised by bright pinkish-orange lips, a jet-black face and body, a deep resonant call, and highly secretive behaviour.

The discovery is significant as it enriches our understanding of African primate diversity and highlights the ecological importance of tropical rainforests. As a seed disperser, the species plays a vital role in forest regeneration. Its formal recognition will facilitate legal protection, targeted conservation measures, and international support to safeguard its habitat and prevent threats such as poaching.

79. Common Myna (*Acridotheres tristis*)

Why in News?

The Common Myna, introduced into Australia in 1862 to control crop pests, is now recognised as one of the world's 100 worst invasive alien species, highlighting the ecological risks of introducing non-native species.

The Common Myna (*Acridotheres tristis*) is a bird native to South and Southeast Asia. It was introduced to Melbourne, Australia, to control insect pests but rapidly spread across urban and agricultural areas due to its highly adaptable nature. It has an opportunistic diet, feeding on insects, fruits, seeds, grains, pet food, and food waste, and nests in tree hollows, roof spaces, and other cavities. Its aggressive territorial behaviour allows it to outcompete



native birds and mammals for nesting sites, often displacing them and reducing their breeding success.

The species poses significant ecological and economic challenges by damaging fruit crops, contaminating urban areas through large communal roosts, and spreading diseases such as Salmonella and avian malaria. Listed among the 100 World's Worst Invasive Alien Species by the Global Invasive Species Database (GISD), the Common Myna underscores the importance of preventing biological invasions through early detection, habitat restoration, and effective invasive species management.

80. Himalayan Pangolin (Manis aurita)

Why in News?

International researchers have revalidated the Himalayan Pangolin (*Manis aurita*) as a distinct living species, separate from the Chinese Pangolin (*Manis pentadactyla*).



About the Himalayan Pangolin

The Himalayan Pangolin is a nocturnal, solitary, insect-eating mammal belonging to the family Manidae. It is found in the southern Himalayan foothills, including Nepal, South Tibet, and Northeast India (Assam). The species is covered with overlapping keratin scales, has powerful claws for digging termite and ant nests, and relies primarily on its sense of smell due to poor eyesight. It reproduces slowly, with females usually giving birth to a single offspring, making population recovery difficult.

Key Features

- Scientific name: *Manis aurita*
- Family: Manidae
- Habitat: Himalayan forests and foothills
- Diet: Ants and termites (myrmecophagous)
- Behaviour: Nocturnal and solitary
- Protected by tough keratin scales, which act as armour against predators.

81. Alpine Flower rediscovered after 158 years

Why in News?

A rare Himalayan flower has been rediscovered in Arunachal Pradesh after 158 years, prompting scientists to recommend its endangered status in India.

- **Scientific Name** – *Cyananthus hookeri*.
- It is a dwarf, tuft-forming herb with purple-blue flowers that grow in fragile alpine meadows of the Sino-Himalayan region.



- **Family** – Campanulaceae or bellflower.
- **Rediscovered Location** – Chuna Valley in Tawang district, Arunachal Pradesh.
- **Last Seen in** – A rare purple-blue alpine flower, last collected in India by legendary British botanist Sir Joseph Dalton Hooker in 1867 in Sikkim.
- **Distribution** – It occurs throughout the eastern Himalayas, in Bhutan, China, India and Tibet, but with a restricted distribution.
- **Growth Condition** – Harsh alpine conditions and short growing seasons make survival challenging for most plant species.
- **Recommendation to IUCN** – The researchers have recommended that the species be classified as Endangered in India under IUCN Red List criteria.
- **Significance** – The first confirmed record from Arunachal & India's first since 1867 highlights the rich Eastern Himalaya flora and the need for conserving fragile alpine ecosystems.

13. PERSONALITIES IN NEWS

82. Chirag Veer Singh Sarao Becomes First Keshdhari Sikh American at U.S. Air Force Academy



Why in News?

Chirag Veer Singh Sarao has become the first keshdhari Sikh American to join the U.S. Air Force Academy (USAFA) after receiving religious accommodation to serve while maintaining his Sikh articles of faith.

A keshdhari Sikh keeps unshorn hair (kesh) and beard as articles of faith. Sarao joined the Academy on 24 June 2026 after receiving official permission to retain his religious identity during military training. The U.S. Air Force Academy, located in Colorado Springs, is one of the five U.S. federal service academies, training officers for the U.S. Air Force and U.S. Space Force. His induction marks a significant milestone for Sikh representation in the U.S. armed forces.

83. Sufiya Sufi's 5,000-km Kanyakumari to Karakoram Run

Why in News?

Guinness World Records holder and endurance runner Sufiya Sufi has crossed Ramban district (Jammu & Kashmir) during her 5,000-km run from Kanyakumari to the Karakoram region in Leh-Ladakh.

The expedition is one of India's longest endurance runs, traversing diverse terrains and extreme weather conditions from the country's southernmost tip to its northern high-altitude region. Widely



recognised for her record-breaking endurance feats, Sufiya Sufi's run symbolises determination, perseverance, and national unity, inspiring people across the country.

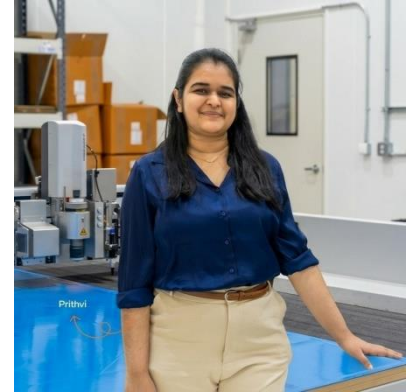
84. Prithvi Sanghani: Engineer Behind Vikram-1's Autopilot System

Why in News?

Prithvi Sanghani, the daughter of a farmer from Gujarat, has been recognised for leading the development of the autopilot control system of Vikram-1, India's first privately developed orbital rocket.

Prithvi began her career at the Defence Research and Development Organisation (DRDO) before joining Skyroot Aerospace, where she contributed to the Mission Aagaman programme. At Skyroot, she led the development of Vikram-1's autopilot system, which ensures that the rocket remains on its planned flight path during launch.

Her achievement highlights the growing role of young Indian engineers in the country's private space sector and serves as an inspiration for aspiring scientists and aerospace professionals.



85. Anurag Jain Appointed CEO of NITI Aayog

Why in News?

The Central Government has appointed Anurag Jain, a 1989-batch IAS officer of the Madhya Pradesh cadre, as the Chief Executive Officer (CEO) of NITI Aayog for a two-year term.

Anurag Jain has nearly four decades of administrative experience, having served in key positions in both the Government of India and the Government of Madhya Pradesh. As CEO, he will oversee the implementation of national development priorities, promote cooperative and competitive federalism, and support evidence-based policymaking.

About NITI Aayog: Established on 1 January 2015, NITI Aayog is the Government of India's premier public policy think tank. It is neither a constitutional nor a statutory body. The Prime Minister is its Chairperson, while the Vice-Chairperson is appointed by the Prime Minister.



14. OBITUARY

86. Girish Bharadwaj Passes Away



Why in News?

Padma Shri awardee Girish Bharadwaj, popularly known as the "Bridge Man of India", passed away at the age of 76 on 7 July 2026 in Karnataka.

About Girish Bharadwaj

A mechanical engineer by profession, Girish Bharadwaj devoted over three decades to improving rural connectivity through the construction of low-cost suspension bridges.

He built more than 140 suspension bridges, primarily across remote regions of Karnataka, Kerala, Telangana, and Odisha, enabling easier access to schools, healthcare facilities, markets, and other essential services. His first suspension bridge was constructed in 1989 across the Payaswini River at Arambur in Karnataka's Dakshina Kannada district.

Recognition

- Awarded the Padma Shri in 2017 for his contribution to rural infrastructure and social service.
- Popularly referred to as the "Bridge Man of India" for pioneering affordable suspension bridge construction in rural areas.

Prelims Facts

- Padma Shri is India's fourth-highest civilian award.
- Suspension bridges are supported by cables or chains that carry the weight of the bridge deck.

15. NEWS IN SHORT

87. NCW Women Helpline – 14490

The National Commission for Women (NCW) launched the Women Helpline 14490, a 24×7 toll-free helpline to provide immediate assistance to women facing violence, harassment, cybercrime, domestic abuse, or other forms of exploitation. The helpline enables complaint registration, legal guidance, counselling, emergency support, and referral to the concerned authorities. It aims to strengthen women-centric grievance redressal and improve access to justice through a single nationwide platform.

88. Indonesia (Tagore Visit)



Indonesia will commemorate Rabindranath Tagore's 1927 visit during 2026–27, recognising his contribution to strengthening India–Indonesia cultural ties. During his visit, Tagore admired Indonesian art, literature, and Batik, later introducing the traditional textile art to Shantiniketan. Indonesia, the world's largest archipelago, lies between the Indian and Pacific Oceans and is situated on the Pacific Ring of Fire, making it highly prone to volcanic activity and earthquakes.

89. Matcha Tea (Assam)

India's first commercially produced Matcha tea has been developed at the Chota Tingrai Tea Estate in Assam. Matcha is a premium powdered green tea prepared from shade-grown *Camellia sinensis* leaves. Before harvesting, the tea plants are covered to increase chlorophyll and amino acid content, after which the leaves (called Tencha) are steamed, dried, and stone-ground into a fine powder. The initiative is expected to diversify India's premium tea exports.



90. ICC releases Return to Play Post-Pregnancy Guidelines



The International Cricket Council (ICC) released its first Return to Play Post-Pregnancy Guidelines to support women cricketers returning after childbirth. The framework provides medical, physical, nutritional, psychological, and workload management guidance while encouraging member boards to offer maternity support. It follows the 6 Rs Framework—Ready, Review, Restore, Recondition, Return, and Refine—to ensure a safe and gradual return to competitive cricket.

91. Akashvani (All India Radio)

Akashvani, formerly known as All India Radio (AIR), is India's national public radio broadcaster operating under Prasar Bharati. Established as AIR in 1936 and renamed Akashvani in 1956, it operates more than 460 radio stations, broadcasting in 23 languages and 146 dialects. It remains one of the world's largest public broadcasting networks, providing news, education, culture, and entertainment across the country.



92. Himalayan Ray-Finned Fish



The Himalayan Ray-Finned Fish (*Schizothorax pelzami*), locally known as Ngarsing, is a freshwater fish species found in cold Himalayan rivers and streams. It belongs to the Cyprinidae family and is adapted to fast-flowing, oxygen-rich waters. The species is listed as Endangered on the IUCN Red List due to habitat degradation and climate change, making it an important indicator of the health of Himalayan freshwater ecosystems.

93. Borjuli Wetland

The Borjuli Wetland, located in Sonitpur district of Assam, has been declared a Biodiversity Heritage Site (BHS) under the Biological Diversity Act, 2002. The wetland is known for conserving *Oryza rufipogon*, the wild ancestor of cultivated rice, along with rich aquatic biodiversity. Its recognition highlights the importance of conserving indigenous genetic resources and wetland ecosystems.



94. Pandavani Folk Tradition



Pandavani is a traditional folk storytelling and musical performance of Chhattisgarh based on episodes from the Mahabharata. The narration is accompanied by instruments such as the Tambura (Ektara) and combines music, dialogue, and dramatic expression. It has two main styles—Vedamati, where the performer remains seated, and Kapalik, which involves energetic standing performances with theatrical movements.

95. IIM Bangalore Indonesia Campus

The Indian Institute of Management Bangalore (IIM Bangalore) will establish its first overseas campus in Indonesia, marking a significant step in the internationalisation of Indian higher education. Announced during the Prime Minister's visit to Indonesia, the campus aims to strengthen academic collaboration, management education, research, and people-to-people ties between the two countries.



96. Asteroid Torifune



Asteroid Torifune is a Near-Earth Asteroid (NEA) that was recently observed during a close flyby by Japan's Hayabusa2 spacecraft. Measuring about 450 metres in diameter, it is being studied to improve scientific understanding of the origin and evolution of asteroids. Hayabusa2 had earlier successfully returned samples from asteroid Ryugu to Earth in 2020, making Torifune another important target for planetary exploration.

97. Mohun Bagan (Durand Cup Record)

Mohun Bagan Super Giant, one of India's oldest football clubs, is the most successful team in the history of the Durand Cup, having won the prestigious tournament 17 times. Founded in 1889 in Kolkata, the club is famous for its historic 1911 IFA Shield victory over East Yorkshire Regiment and currently competes in the Indian Super League (ISL).



98. GalaxEye



GalaxEye is a Bengaluru-based space technology startup developing advanced Earth observation satellites. It recently launched Mission Drishti, the world's first OptoSAR satellite, which combines optical and Synthetic Aperture Radar (SAR) imaging to provide all-weather, day-and-night Earth observation. The company recently lost communication with the satellite shortly after launch.

99. Dr. Syama Prasad Mookerjee

Dr. Syama Prasad Mookerjee (1901–1953) was the founder of the Bharatiya Jana Sangh, the ideological predecessor of the Bharatiya Janata Party (BJP). He served as Independent India's first Minister for Industry and Supply and was the youngest Vice-Chancellor of Calcutta University in 1934. He is remembered for strongly opposing Article 370 and advocating the complete integration of Jammu and Kashmir with India.



100. Indonesia to Set Up BrahMos Missile Batteries



Indonesia has signed an MoU for the phased procurement of two BrahMos coastal missile batteries, becoming one of the latest countries to acquire the missile system. A coastal missile battery consists of mobile launchers, radar, command-and-control units, and support vehicles, designed to defend coastlines against hostile naval vessels. The

agreement strengthens India–Indonesia defence cooperation and enhances maritime security in the Indo-Pacific region.

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