

MONTHLY NEWS MAGAZINE FOR CHILDREN



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## Indiats first elevated mature trail

The day is observed to enhance awareness for the eradication of polio from planet earth.

## National VACCINATION Day 17th March





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#### FROM THE EDITOR'S DESK

#### "No person was ever honoured for what he received. Honour has been the reward for what he gave."

- Arthur. C. Clarke

Gayatri Chakravorty Spivak was awarded the 2025 Holberg Prize for her ground-breaking work in comparative literature, translation, postcolonial studies, political philosophy and feminist theory. The prize was given for her "critique of structures of power and knowledge in an unequal world". She spoke on behalf of the subaltern people and gave the deprived a voice.

Young Akarsh Shroff received the prestigious National Youth Award for manifesting his commitment to improving quality of early childhood education at *anganwadi* centres in India.

The **Breakthrough Prize**, a prestigious award, recognises trailblazing achievements in Life Sciences, Mathematics and Fundamental Physics. **Thousands of recipients** have contributed immensely through their unflinching research.

**Thiyam Suryamukhi Devi**, the legendary Manipuri classical dancer, received the prestigious **Padma Shri** for her exceptional contributions to art. Dedicating five decades of her life and career, she has contributed to preserving and promoting the rich cultural heritage of Manipuri dance.

**Captain Manoj Kumar Pandey** an Indian military officer displayed exemplary courage and leadership during the Kargil War in 1999 and sacrificed his life for his country. This made him a posthumous recipient of India's highest military decoration, the **Param Vir Chakra**.

A salute to each one who gave first and consequently earned the honour of a prestigious award.

Read, reflect and revert with your thoughts and feelings.

We look forward to your support and suggestions.

- Editorial Team

#### Dear Readers,

There have been requests from quite a few readers for hard copies of Prajya. We understand that quite a high percentage of our young readers keep revisiting some articles, and a handy print version within reach induces one to read more often, highlight things and make notes. This also partly contributes to students spending less screen time. The Prajya team is happy to bring to you the issue in print.

However, there are few things that we want to be careful about:

A. We don't want to print more than what is required and

B. Keep the cost of the print version (plus postage) within reasonable limits.

Please note that the access to free online e-version will continue.

So, it will greatly help us if you could fill in the details in the link provided.

#### http://bit.ly/Prajya

#### Happy Reading !

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Visit https://davchennai.org/publications/prajya-news-magazine/

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## 2025 Special Olympics World Winter Games

Lunice Kennedy Shriver, philanthropist and younger sister of John F. Kennedy late President of USA, founded the Special Olympics Movement on 20<sup>th</sup> July 1968, in Chicago, USA. She struggled with health issues her entire life. Still, she showed tremendous social commitment and was involved in the rehabilitation of WWII veterans.

Since inception, this Olympics has grown exponentially, encompassing a wide range of sports and attracting participants from every corner of the world. The first of the Special Winter Games was held

Games, Venues & Events			
Event	Venue		Gold Medal Events
Opening Ceremony		Inalni Arona	
Floorball	Turin	inaipi Arena	14
Figure Skating			20
Short Track Speed Skating		Palasport Tazzoli	60
Snowboarding	Mountains	Melezet, Bardonecchia	36
Dancesport		Pallazzo delle Feste, Bardonecchia	21
Cross-Country Skiing		Pragelato Plan,	100
Alpine Skiing		Via Lattea, Sestriere	101
Snowshoeing			103
Closing Ceremony			
Cumulative Total	455		





in February 1977 in Steamboat Springs, Colorado. Held every four years, the international sporting event offers athletes the chance to compete in winter sports such as alpine skiing, snowboarding, figure skating and ice hockey. The Winter Games provided opportunities for physical activity, social interaction and personal growth for individuals with intellectual disabilities.

The XII Special Olympics World Winter Games also referred to as Turin 2025. The competitions took place in Turin, Piedmont, Italy in March 2025. There were about 1,500 athletes 102 from countries. Indian contingent consisted of 49 members, including 30 athletes and support staff.

Prime Minister Modi has lauded the outstanding performance of Indian athletes. **The Indian contingent brought home 33 medals,** making the nation proud on the global



stage. There were outstanding performances from many athletes including, Gonzalo Escobar (28) of Chile who earned the first medal. Another Gerhard Kirnbauer (Austria) aged 66, made history as the oldest competitor. At 22, Hungarian wunderkind Zsombor Bohn won double gold for the 777m and the 500m race in Speed Skating.

The Special Olympics do not provide an official medal table,

since there is supposed to be no competitive pressure among the nations. Athletes who were disqualified or did not finish their competition were also awarded with participation ribbons to promote sportsmanship.

The 2029 Edition will be held in Switzerland. By highlighting the abilities of individuals with intellectual disabilities, the Games promote values of inclusion, respect and empowerment.







## **New World Leaders**

#### Stuart Young sworn in as Prime Minister of Trinidad & Tobago

Trinidad &Tobago (T&T) is the southernmost of the Caribbean Island nations. Eleven miles off South American Venezuela coast, the nation consists of two main islands, Trinidad and Tobago and 21 smaller islands. Tobago is the smaller of the two, comprising about 6% of the total area and 4% of the population which is predominantly mixed African and Indian descent. T&T received independence from UK in 1962 and became a republic in 1976. The last Governor General Sir Ellis Clarke became their first President.

In January, the current PM of T&T, Kieth Rowley, decided to quit election politics. On 17<sup>th</sup> March, Stuart Richard Young (50) was nominated and became the 8<sup>th</sup> Prime Minister. Young is of Chinese Indian descent, a devout catholic and a lawyer by profession. Elected Chairman of PNM in 2022, Young had appeared



Country	Area (km²) Ranking	Population (millions)	Language	Capital	Currency (For 1 USD)	Economy (Nominal GDP GR)
Trinidad & Tobago	5,128 (173)	1.51	English	Port of Spain	\$ (TTD) 6.72	High Income (114)
Namibia	825,615 (34)	3.39	Native languages, Afrikaans & English official language	Windhoek	NAD 18.9	Upper middle income with considerable inequality (148)
Gabon	267,668 (76)	2.50	Native languages & French official language	Libreville	Franc CFA	Upper middle income with considerable inequality (83)



as counsel in many Commissions of Enquiry and served as Minister in most portfolios that he was even referred to as Minister of 'Everything'. He is also Chair and Founding Member of the Synergy Entertainment Network and W.I. Sports.

On the advice of the Prime Minister, President Christine Kangaloo ordered elections for all the 41 seats on 28<sup>th</sup> April 2025. Apart from PNM, United National Congress (UNC) will be a major contestant.

#### Netumbo Nandi-Ndaiwah sworn in as Namibia's first female President

Namibia is located on the Atlantic coast of southwestern Africa. Germany colonised the land around 1885 as German Southwest Africa. During WWI and around 1915, Namibia fell into the hands of South Africa. Abundant natural resources like uranium, gold, diamonds and rare earths made South Africa delay Namibia's independence till 1990, as the last nation in Africa to receive freedom. South West



Africa People's Organisation (SWAPO) led by Sam Najumo played a key role in the military resistance against South Africa's apartheid and colonial rule.

Ndemupelila Netumbo Nandi-Ndaitwah (73), known more as NNN, was sworn in as the fifth and country's first female president of Namibia, on 21<sup>st</sup> March 2025. She won the 2024 elections, receiving 58.7% of the votes. NNN had humble beginnings as 9th of 13 children in an Anglican clergyman family. Today, she is a highly respected politician married to Ndaitwah, a former chief of Namibia Defence Force. As a teenager dedicated to SWAPO Freedom struggle and later as youth, she received education and training abroad in UK, Zambia and Soviet Union. She studied political science and diplomacy. Member of national assembly since 1990, NNN focused on country's development holding charge of various ministries. As Dy. PM and Vice-President she was equally concerned about women's empowerment and gender equality.

#### Gabon elects New President Junta Chief Brice Oligui Nguema frontrunner

Gabon is an equatorial country located on the Atlantic west coast of Central Africa, bordering Equatorial Guinea to the northwest, Cameroon to the north, and the Republic of the Congo to the east and south. With 88% dense forest cover, unpolluted land and sea, Gabon is one of the few carbon-positive countries.

Gabon was a French colony prior to independence in 1960.



From 1967 the country had one party family rule by Omar Bango for 41 years and after his death, another 15 years by his son Ali Bango. In 2023, Ali Bongo's cousin and military chief Brice Oilgui Nguema (50) deposed the government and became the Head of the transition government. Presidential elections were conducted in April 2025. The interim Head Nguema, one of the eight candidates, was declared the winner, securing 90% of the votes. Nguema will enjoy a 7-year presidential term.



Gabon is rich in natural resources like timber, manganese and oil. Oil accounts for 50% of GDP and 80% of exports. But the country is afflicted by corruption and poor governance. Nearly 40% of the young working population remain unemployed.





## Sunitha Williams and Butch Wilmore return to Earth

I magine you had gone to visit your relatives for a week-long stay and due to unforeseen circumstances, you had to stay there for longer than expected. Now imagine the relative lived in a tiny house alongside 10 other people, and oh, the week-long stay became almost a whole year.

And the entire scenario played out in space, 400 kilometers above the surface of Earth.

This is what happened to NASA astronauts Sunita Williams and Butch Wilmore who left Earth on 5<sup>th</sup> June 2024, aboard Boeing's Starliner for its crewed test flight. Following technical difficulties with the propulsion system, on 6<sup>th</sup>, the Starliner returned without the astronauts.

Their stay extended to an unexpectedly long 286-day mission aboard the International Space Station (ISS).

They were then retrieved by the SpaceX Dragon shuttle that carried the replacement astronauts for the ISS and after much ordeal the SpaceX Crew Dragon holding Williams and Wilmore splashed down on 19<sup>th</sup> March off the Florida coast concluding a mission initially planned for a week.

And their visit to the ISS was not a vacation. like how it is when we visit our relatives! During their prolonged time aboard the ISS, Williams and Wilmore actively contributed to over 150 scientific experiments, gathering valuable data on the effects of long-duration spaceflight. Their research spanned various fields, including plant water management, vegetable production systems, space medicine, robotics, and lifesupport systems.

Williams, a veteran with the most spacewalking time by a woman (62 hours, 6 minutes across 9 space walks) and Wilmore became part of Expeditions 71 and 72 of the ISS. Williams now holds the **second-highest spaceflight duration for a NASA astronaut at 608 days.**  Valeri Polyakov holds the first place, having spent a combined total of 679 days and 16 hours.

Upon their return, Williams (59) and Wilmore (61) were greeted by medical teams. Long-duration exposure to microgravity can cause various physiological changes including dizziness, nausea. instability, temporary vision issues and bone density loss. To help them readjust to Earth's gravity, they have begun a comprehensive 45day rehabilitation programme in Houston Texas.

The prolonged mission sparked public discussion about the safety of Boeing's Starliner and brought renewed interest in spaceflight innovation with plans to bring them home earlier. But ultimately, the safe return of Williams and Wilmore marks the end of an extraordinary mission. It showcases their resilience and humanity's indubitable need to reach further into the stars by pushing the boundaries.



## World's first 'supersolid'. created from light



In an exciting breakthrough, researchers have successfully turned light into a "supersolid" for the first time. This new achievement has opened up new possibilities in physics, as light, usually thought of as a form of energy, has now been transformed into a solid-state material with special properties.

The experiment, led by a team of scientists, created a new phase of matter that combines the features of both solids and superfluids. This "supersolid" made from light could change how we approach fields like quantum computing, materials science and energy storage. The findings were shared in a paper published in *Nature*.



"We imagine the can supersolid as a fluid composed of coherent quantum droplets periodically arranged in space, which are able to flow through an obstacle without undergoing perturbations, maintaining their spatial arrangement and mutual distance unchanged as happens in a crystalline solid," says Iacopo Carusotto, a researcher at the National Institute of Optics (CNR-INO) and co-author of the study.

The ability to manipulate light at such a detailed level could lead to breakthroughs in material science and energy understanding. While still in early stages, this discovery marks an important step in understanding the basic properties of light and matter.

"This is not simply a photonic analogy of atomic systems, but a fundamentally new approach to achieve supersolidity," explains Dimitrios Trypogeorgos, senior researcher at CNR-Nanotec and study coordinator.

"This work not only demonstrates the observation of a supersolid phase in a photonic platform but also opens the way to the exploration of quantum phases of matter in non-equilibrium systems," says Daniele Sanvitto, research director at CNR-Nanotec in Lecce. "This is particularly significant because this approach has the potential to bridge the gap between fundamental science and practical applications."

"Realising this exotic state of condensed matter in a fluid of light flowing in a semiconductor nanostructure will allow us to investigate its physical properties in a new and controlled way and perhaps to be able to exploit its unique characteristics for possible applications to new light-emitting devices," concludes Dario Gerace, co-author and professor at the University of Pavia.

A supersolid is a state of matter where particles organise themselves into a crystalline, solid structure, but also behave like a superfluid, exhibiting frictionless flow. Essentially, it is a solid that can flow without any resistance, a phenomenon previously thought to be impossible.







## Sri Lanka's highest civilian award for PM Modi

**P** ollowing his participation in the **BIMSTEC** (**Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation**) Summit in Bangkok, Prime Minister Modi arrived in Sri Lanka on 5<sup>th</sup> April 2025, where, in a historic move, he was conferred with the island nation's highest civilian honour "**Mithra Vibhushana**."

The award, bestowed by Sri Lankan President Anura Kumara Dissanayake, recognises PM Modi's significant contributions to strengthening the long-standing historical ties and fostering the friendly relationship between India and Sri Lanka.

BIMSTEC is a regional organisation established in 1997, through the Bangkok Declaration.

Initially formed as BIST-EC, comprising Bangladesh, India, Sri Lanka, and Thailand, the organisation expanded to include Myanmar in late 1997 and later welcomed Nepal and Bhutan as full members in 2004, subsequently adopting the name BIMSTEC.

BIMSTEC serves as a bridge connecting South and Southeast Asia, facilitating diplomatic ties and economic partnerships while emphasising regional connectivity and people-to-people contacts to promote peace, stability and shared prosperity.

President Dissanayake personally presented the prestigious honour to PM Modi at a ceremony in Colombo. "Mithra Vibhushana," which translates to **"Radiance of**  **Friendship,"** was established in 2008 and is conferred upon heads of state or government for their exceptional friendship and efforts in bolstering bilateral relations.

Since its inception, the Sri Lanka Mitra Vibhushana has been conferred only upon a select group of distinguished leaders who have been instrumental in building cross cultural connections:

- Maumoon Abdul Gayoom (President of the Maldives) 2008.
- Mahmoud Abbas (President of the Palestinian National Authority) 2014.
- Yasser Arafat (Posthumous, Former President of the Palestinian National Authority) 2014.





Upon receiving the award, PM Modi expressed his gratitude, stating "It's a proud moment for me. It's not just an honour to me but to 140 crore Indians. It shows the historical relationship and deep friendship between the people of Sri Lanka and India, and for this, I thank the president, the government of Sri Lanka and the people here."

The organisation aims to accelerate economic growth, promote social progress and encourage collaboration in areas of common interest, including trade, technology, energy, tourism and security. This marks the 22<sup>nd</sup> international award conferred by a foreign nation upon PM Modi, further highlighting his growing effect on the global stage, his commitment to regional cooperation, cultural revival and spiritual diplomacy.

#### **BIMSTEC** summit

Key initiatives under the India-Thailand strategic partnership

➤ Maritime cooperation Collaboration in the Indo-Pacific through frameworks like the ASEAN Outlook



on the Indo-Pacific (AOIP) and India's Indo-Pacific Oceans Initiative (IPOI), with emphasis on maritime security and regional connectivity via the India-Myanmar-Thailand Trilateral Highway.

➤ Defence and security Extension of defence dialogues, joint military exercises such as Exercise Maitree and cooperation in areas like counter-terrorism, cyber security and intelligence sharing.

### Trade and economic engagement

Initiatives to boost bilateral trade, enhance supply chain resilience, promote private sector investment and explore upgradation of the Free Trade Agreement (FTA).

#### Cultural and peopleto-people ties

Promotion of educational exchanges, celebration of Buddhist cultural linkages, promotion of tourism and deeper engagement with the Indian diaspora in Thailand.

#### Science, technology, and innovation

Joint cooperation in fields such as renewable energy, space technology development of digital public infrastructure and innovation in healthcare and biotechnology.

#### Regional and Multilateral Cooperation

Strengthening coordinated efforts in regional and international forums such as BIMSTEC, the Association of Southeast Asian Nations (ASEAN), the Indian Ocean Rim Association (IORA) and the UN to promote a rulesbased international order.





## **Women Leaders**



#### Shirley Botchwey becomes the first African Woman Secretary General of the Commonwealth

Shirley Botchwey assumed  $7^{th}$ office as the Secretary General of the Commonwealth of Nations recently, becoming the first African woman to hold the position. She replaced Patricia Scotland of Dominica, who was the first woman to serve as the Commonwealth Secretary General. Shirley Botchwey was elected for a four-year term at the Commonwealth Heads of Government Meeting (CHOGM) 2024 in Apia, Samoa. Shirley Ayorkor Botchwey is a Ghanaian politician and diplomat who has had a distinguished career in foreign affairs, national security,

### Kirsty Coventry becomes the first female President of IOC

Zimbabwe's Kirsty Coventry becomes the first female to be made President of the International Olympic Committee (IOC). The Zimbabwean was elected at the 144<sup>th</sup> IOC Session in Costa Navarino, Greece. She will take over from Thomas Bach on 23<sup>rd</sup> June when his tenure comes to an end. She is the first African to be elected to the highest position in the world of sports.

She gets an eight-year mandate into 2033. She is 41 years old and youthful by the historical standards of the IOC. Coventry won back-to-back titles in 200-metres backstroke at the 2004 Athens Olympics and Beijing four years later. She

business and communications before assuming the prestigious role of Commonwealth Secretary General.

She served as Ghana's Minister for Foreign Affairs and Regional Integration from January 2017 to January 2024 and was also a member of Ghana's National Security Council.

The Commonwealth of Nations comprises 56 countries across all inhabited continents, many of which could be hardest hit by the dangers of climate change.

Secretary-General Shirley Botchwey referred to climate change as the greatest challenge of our time and has pledged to mobilise stronger action and joined the IOC in 2013, almost one year after a disputed athlete election at the London Olympics.

Also in the race were four presidents of sports governing bodies: Track and field's Sebastian Coe, Skiing's Johan Eliasch, Cycling's David Lappartient, Gymnastics' Morinari Watanabe and Prince Feisal al Hussein of Jordan.

One of the key challenges for Coventry will be steering the Olympic movement through political and sporting issues toward 2028 in Los Angeles. Further IOC will also need to find a host for the 2036 Summer Games which could go to India or the Middle East. A key IOC member, who voted on Thursday was Nita Ambani from India.

advocated for reforms to help small and other vulnerable Commonwealth states access the support that they would require.









#### Sudarsan Pattnaik - first Indian to receive Fred Darrington Sand Master Award

www.artist Sudarsan Pattnaik has been honoured with The Fred Darrington Sand Master Award for his contributions to the field. The award was presented during the Sand World 2025 International Sand Art Festival, which opened at Weymouth in



the southern England County of Dorset. At the event, Pattnaik set another milestone when he created a 10-foot-high sand sculpture of Lord Ganesha with the message of World Peace.

The award was made extra special, since this year coincides with the centenary of legendary sand British sculptor Fred Darrington. Jon Orell, Mayor of Weymouth presented the award and a medal to Pattnaik at the festival, which attracted many international sand artists to Weymouth – considered the birthplace of British sand sculpture.

Sudarsan Pattnaik is a Padma Shri awardee, who has participated in more than 65 international sand sculpture championships and festivals around the world. He has been honoured with many awards for his iconic creations.

#### President Droupadi Murmu conferred Honorary Doctorate in Slovakia

President Droupadi Murmu was honoured with an Honorary

Doctorate by Constantine the Philosopher University in Nitra, Slovakia on the final day of her four-day state visit to Portugal and Slovakia. The gesture signifies the growing respect for India's global leadership and President Murmu's unique role in representing democratic values and inclusive governance.

She was chosen for this honour for her distinguished career in public service and governance, advocacy for social justice and inclusion, contributions to education and women's empowerment and work towards cultural and linguistic diversity, especially Santhali language recognition.

President Murmu dedicated the honour to the 1.4 billion people of India. expressed special gratitude for receiving it from a university named after Saint Constantine Cyril and she highlighted her lifelong work toward preserving India's cultural linguistic identity and and emphasised the role of education in both personal and national development.





#### Gayatri Chakravorty Spivak wins 2025 Holberg Prize

Scholar and theorist Gayatri Chakravorty Spivak has been awarded the Holberg Prize for 2025. It is one of the most prestigious international prizes in the field of academia. The Holberg Prize is awarded annually to an outstanding researcher in the humanities, social sciences, law or theology. Funded by the Norwegian government and administered by the University of Bergen on behalf of the Norwegian Ministry of Education and Research, it carries a cash prize of \$540,000. Spivak will receive the award on 5th June at the University of Bergen in Norway.



Gayatri has been working as a Professor in the Humanities area at Columbia University since 2007. A founding member of the Institute for Comparative Literature and Society at the university, she is a hallowed name in academic circles.

Gayathri Spivak has been teaching in self-subsidised elementary schools in the poorest parts of India as part of her constant endeavour to enable the marginalised to speak of their experience in their own words. She has authored nine books, and her work has been translated into more than 20 languages.

#### YuvaSpark founder Akarsh Shroff conferred with National Youth Award

Akarsh Shroff of Bengaluru was conferred the prestigious National Youth Award for his commitment to improving quality of early childhood education at Anganwadi centres in India.

The award was conferred during a ceremony at Parliament House in Delhi by Union Minister of Youth Affairs and Sports Mansukh Mandaviya. The event was organised to honour award recipients of both this and the previous year. A total of 22 awardees were honoured across both the years.

The National Youth Award is conferred by the Ministry of Youth Affairs to recognise the excellent efforts of youth working towards national development and social service. The prize recognises work in Health, Research, Culture, Human Rights, Tourism, Education, Sports, Innovation, Community service, by people under the age of 30.

Akarsh founded YuvaSpark as a 17-year-old high school student in 2018. The organisation has built technology platforms that have digitised learning at over 600 Anganwadi centres across rural India. To enhance quality of education at Anganwadis (early childhood education centres in rural India), YuvaSpark's digital platform is periodically providing teachers with custom-curated interactive vernacular language academic content.



The organisation has impacted the lives of 3,46,000 children across 10 States by engaging over 700 volunteers from 35 institutions, and has raised ₹2.5 crore in funding from Amazon, BCG, Indian Oil, MNGL, SECI and other companies.





## De-extinction of Dire Wolf

olossal Biosciences, an American biotechnology company announced recently that it has resurrected the Dire Wolf a large predatory mammal that went extinct some 12,000 years ago. This is an interesting achievement for this ambitious company in its quest to recreate extinct animals.

#### **Extinction of species**

It is a fact that natural forces have created waves of extinction of species large and small. The extinction of large, monstrous, terrifying mammals has always held humans in awe



and a curious urge to bring them back to life. What was once pure science fiction may blossom into reality, thanks to the breathtaking advancement in life sciences.

#### **Dire Wolf**

wolf Dire roamed the American continent some 12,000 years ago with a range that extended from Venezuela in the south to Canada in the north. While humans have been a powerful evolutionary force, their role in the extinction of species in a mega scale is recent. The agricultural revolution followed by the industrial revolution and the explosive growth in human numbers hastened the process.

### How Colossal Biosciences pulled it off

Scientists need to sequence the genetic landscape of the



animal or plant that needs to be cloned, reengineered or tweaked genetically for specific output. A wolf has some 19,000 genes on which Colossal Biosciences carried out 20 edits on 14 genes. It used various tools of bioengineering at its disposal including the Nobel prize winning technique CRISPR. For specific scientific reasons the company chose Endothelial progenitor cells (EPC) of grev wolf. Endothelial progenitor cells form the lining of blood vessel cells. They then carried out the edits to match that of Dire wolf genes which were obtained from fossilised teeth. The edited nucleus was then transferred to a denucleated ovum, cultured in the lab and later the mature embryos were inserted into surrogate dogs. The surrogate mother dogs carried their pregnancy to full term and delivered 3 dire wolf puppies which are now living in protected enclaves. A remarkable feat indeed.

Endothelial progenitor cells (EPCs) are a specialised type of cell that can differentiate into endothelial cells, the cells that line blood vessels. They are involved in vascular growth, regeneration and repair. EPCs are particularly important in repairing damage to blood vessels and forming new blood vessels, especially in situations like ischemic tissues or during tumour growth.





## Breakthrough Prize 2025

bed 'Oscars of Science', the Breakthrough Prize aims to honour and celebrate scientists and inspire the next generation of scientists in society. They were founded in 2013 as an apolitical organisation.

Founded by Sergey Brin, Priscilla Chan and Mark Zuckerberg, Julia and Yuri Milner, and Anne Wojcicki; the awards have been sponsored by foundations established by them.

The 2025 prize in **Fundamental Physics** was awarded to **13,508 physicists** across four collaborative projects at CERN, the European particle



physics laboratory near Geneva, Switzerland.

- Awarded to researchers from over 70 countries, part of four LHC experiments at CERN — ATLAS, CMS, ALICE, and LHCb.
- ➤ Recognises contributions in:
  - Confirming Higgs boson properties and mass generation via symmetry breaking.
  - Discovery of new strongly interacting particles.
  - Insights into matterantimatter asymmetry.
- Studying extreme conditions and rare processes in highenergy physics.
- Bose Institute's Role: Part of the ALICE experiment, which focuses on Quark-Gluon Plasma (QGP) — matter





that existed just after the Big Bang. About CERN (European

#### Organization for Nuclear Research)

- Founded: 1954, post-WWI joint scientific venture.
- Members: 23 Member States; India is an Associate Member.
- Focus: High-energy particle physics research.
- The LHC (Large Hadron Collider (LHC) is the world's largest and highestenergy particle accelerator) Collaborations
  - ATLAS: Largest detector; studies Higgs boson and searches for unknown particles.
  - CMS: Versatile detector for Standard Model, dark matter and extra dimensions.
  - ALICE: Studies QGP
     ultra-hot, dense earlyuniverse matter.
  - LHCb: Investigates beauty quarks (b quarks) and matter-antimatter imbalance.

#### Trophy

The Breakthrough Prize trophy was created by Olafur Eliasson. Like much of Eliasson's work, the sculpture explores the common ground between art and science. It is moulded into the shape of a toroid, recalling natural forms found from black holes and galaxies to seashells and coils of DNA.

#### **Events**

The significance of scientific advances resonates in both the present and the future. They are among the highest achievements of human culture and the foundation on which new knowledge will be built.

#### Winners - 2025

In its 14<sup>th</sup> year, the foundation awarded a total of \$18.75 million to laureates and earlycareer scientists in support of groundbreaking discoveries. Each of the six main Breakthrough Prizes includes a USD3 million award.

Recipients in the Life sciences category include Daniel J. Drucker, Joel Habener, Jens Juul Holst, Lotte Bjerre Knudsen, and Svetlana Mojsov, for their research contributions that led to highly effective drugs for diabetes and obesity; Stephen L. Hauser and Alberto Ascherio, who have transformed the understanding of multiple and treatment sclerosis; and David R. Liu, in support of his work developing two powerful, widely used geneediting technologies.

The **Breakthrough Prize** in **Mathematics** went to Dennis Gaitsgory for his central role in the proof of the geometric Langlands conjecture.





#### • ATLAS - A Toroidal LHC ApparatuS.

• CMS - Compact Muon Solenoid. It is a particle detector at the Large Hadron Collider (LHC) used to study collisions of protons and other particles.

• ALICE - A Large Ion Collider Experiment is a detector at the LHC focused on studying the physics of strongly interacting matter, particularly the quark-gluon plasma.

• LHCb - Large Hadron Collider beauty experiment specialises in investigating the slight differences between matter and antimatter by studying a type of particle called the "beauty quark", or "b quark".

• Quark - Atoms are made up of smaller particles - protons, neutrons and electrons - some of which are made up of even smaller ones, called quarks.







## India's first elevated nature trail

Brihanmumbai Municipal Corporation recently shared the opening of 'Elevated Nature Trail', which is a welcome change from the concrete landscape of the metropolitan city.



The trail, which is at Malabar Hill, connects Kamala Nehru Park and Doongerwadi woods. The trail is 485 metres long and 2.4 metres wide and is surrounded by a lush carpet of a variety of trees, like Banyan, Jamun and Gulmohar. The walkway has been designed taking inspiration from Singapore's popular Tree Top Walk.

The local trees in the trail have a unique purpose - they not only provide a break from the busy buzzing of city life, but they are also home to indigenous species of birds, animals, insects, reptiles and microbes. The walkway is built such that it provides areas for birdwatching and a glass-bottom viewing deck for a remarkable experience. Not just that, there's also a Sea Viewing deck where visitors can enjoy the stunning views of the Arabian Sea and be greeted by the cooling breeze from the sea. Built mostly from wood, with very little concrete, the walkway is also a testament to the use and promotion of ecofriendly materials. Such measures ensure that the nature in that area is untouched by massive concrete pollution.

The walkway is open from 5am till 9pm to cater to all kinds of visitors – from the early morning walkers to those in love with the night wind. BMC charges ₹25 from Indian visitors and ₹100 from foreign nationals.

The walkway was planned at a budget of 22 crores, but ended up consuming 25 crores due to tax additions, which BMC is sure the residents feel is worth it. Owing to Malabar Hill being a silent zone, the construction work could be done only in specified hours, which caused the project to take about 3 years. The result has been fruitful, as Mumbai citizens are loving the new addition to the natural landscape and experience.





Indore, ranked as one of the cleanest cities in India is all set to achieve another milestone in sustainable waste management by establishing India's first PPP (public private partnership) green waste processing plant. Built on 55,000 square feet of land in Bicholi, Hapsi, the plant will recycle wood and branches to produce wooden pellets, serving as an alternative fuel to coal. The project is initiated under the **Swachh Bharat** mission, partnering with a private player **Astronomical Industries.** 

Unique problem of waste in human society: All living things create waste as part of their life cycle story. Nature does not view waste as a problem to be dealt with but as a gift that enriches, powers the cycle of life. The unsung heroes of nature are the trillions of microorganisms, insects, worms etc. What they lack in size and strength that catches the trained human eye,





## India's first PPP green waste processing plant

they just overcompensate with their relentless work on animal and plant waste, converting it to nutrients that enrich the soil on which the web of life depends. The onset of industrial revolution, mining, energy and material production has unleashed organic and inorganic waste products that is beyond the capacity of Nature to handle. Overflowing landfills, plastic waste that chokes our waterways, contaminated ground water are all symptoms of a disease created by human generated waste.



Indore shows the way: Urban living generates waste that has to be managed professionally and with some ingenuity. Indore produces 30 tonnes of waste per day. The city's green waste will be directed to the city's forest green waste processing plant. The green waste like leaves, branches and twigs will be dried out in a few months and ground to fine saw dust, contributing to a circular economy. The saw dust can be converted to pellets that can be used as fuel. They can also be used to make furniture, paper plates and fertiliser replacing plastic. The private player Astronomical industries will oversee all installation operations. from finished products. Indore to Municipal Corporation is likely to earn ₹3,000 per ton of waste. This effort will provide direct employment, reduce pressure on landfills, provide alternative to coal burning and enrich the soil.







## **Microprocessor advancements**

he Indian Space Research Organisation (ISRO) in its continuous pursuit of self-reliance in critical space technologies made significant progress in microprocessor development and the establishment of a specialised thermal research facility.

ISRO has successfully engineered two high-performance microprocessors: Vikram 3201 and Kalpana 3201. These 32-bit RISC-V processors are specifically designed to address the demanding computational requirements inherent in various space applications.



In simple terms, RISC-V is an open-source instruction set architecture (ISA) that allows anyone to design and build custom processors, like microcontrollers and CPUs. Think of it as a set of rules that tells a computer how to do things. This open-source nature makes it easy for people to create their own chips, leading to innovation and flexibility in hardware design.

**Vikram 3201,** with an emphasis on high-speed processing, is primarily intended for onboard data management, signal processing and control systems within satellites and rockets.

Kalpana 3201, named after astronaut Kalpana Chawla, prioritises parallel processing alongside Vikram for complex tasks such as advanced image



processing and artificial intelligence applications in the space environment. This can be used for rapid processing of data to identify specific materials through various photographic techniques. While ISRO has been very much involved in designing these circuits for a long time, what makes them extra special is that we are now manufacturing our own integrated circuits. The goal is to mitigate reliance on international vendors, higher system security and tailor made processor architectures for specific demands.

## Thermal research



hairman, S. Somanath, recently inaugurated the Thermal Research Centre at the Indian Institute of Technology, Madras. This state-ofthe-art facility is poised to play a pivotal role in conducting advanced research on thermal management systems essential for spacecraft and rockets.

Rockets and shuttles undergo extreme temperature exposure at 2 points, during take-off, with multiple rocket boosters firing off at once to push the shuttle at breakneck speeds to escape Earth's gravity and during re-entry through the earth's atmosphere; during which the sheer speed of the aircraft will generate immense heat.

Hence, effective thermal control is of paramount importance in space missions and will ensure the consistent and dependable operation of sensitive electronic components and scientific instruments.

The establishment of this dedicated research centre at IIT Madras points to ISRO's focus on cultivating strong collaborative ties between engineers, scientists and future astronauts. The innovative solutions to thermal challenges that will come of this partnership will undoubtedly contribute to the development of more robust and efficient space systems.

These will most definitely make India a self-sufficient forerunner in the age of space exploration in the near future!





## First ever temple for Chhatrapati Shivaji

aharashtra Chief Minister Fadnavis inaugurated the state's first-ever temple dedicated to the Maratha king Chhatrapati Shivaji. The temple aims to honour the Maratha warrior's legacy and celebrate his contributions. The temple pays homage to Shivaji Maharaj's legacy as a ruler, warrior and protector of dharma. It serves as a symbol of Maratha pride and heritage, attracting devotees, historians and tourists. It acts as a centre for cultural events.



educational programmes and historical awareness initiatives. The temple is expected to boost tourism and local employment opportunities in Bhiwandi and Thane district of Maharashtra.

The temple foundation was laid in 2017 by *Shivkranti Pratishthan Trust.* The temple was formally inaugurated on 17<sup>th</sup> March 2024 on the occasion of Shivaji's birth anniversary. Raju Chaudhary construction magnate and devotee of the Maharaj donated land and funds

for temple construction. The entire construction process spanned over six vears incorporating historical and architectural elements inspired by Shivaji's bastions and fortifications. The Mahadwara (grand entrance) is decorated with wooden and stonework carvings and massive teakwood gates.

A 42- foot high main entrance is reminiscent of historical Maratha forts and pillars erected with intricate carvings and ornamental arches blending Maratha and traditional temple architecture.

The central deity is a 6.5-foot-tall statue of Chhatrapati Shivaji Maharaj sculpted from krishnashila (black stone). The idol captures the Maharaj's regal posture symbolising courage, leadership and the spirit of a warrior. The lower part of the temple features 36 sections each showcasing large murals. These murals illustrate important events from the life of Maharaj such as his coronation as Chhatrapati, his military campaigns against Mughals and Adilshahi forces, his naval strategies and establishment of India's first modern navy, his administrative reforms and welfare policies.



-डाट

## C-DOT launches 'Samarth'

The Centre for Development Telematics (C-DOT), of India's premier telecom research and development organisation, launched а significant new initiative called 'Samarth' recently. It is an incubation programme aimed at encouraging and supporting startups working in advanced technology fields such as 5G, 6G, the Internet of Things (IoT), Ouantum Communications, Artificial Intelligence (AI) and cybersecurity.

Through Samarth, C-DOT will provide selected startups with access to state-of-the-art laboratories, mentoring from industry experts, technical and financial assistance, product testing & certification support and market entry guidance. This nurturing environment is designed to help entrepreneurs turn innovative ideas into real-world solutions that can benefit multiple sectors.

The word 'Samarth', which means 'capable' or 'empowered' in Hindi, reflects the vision of the programme — to build indigenous, secure and world-class technologies in India. The initiative also supports India's broader missions like **Atmanirbhar Bharat** and **Digital India**, by reducing dependence on foreign technologies and promoting self-sufficiency.



**Startups** incubated under Samarth will focus on solving real-world problems across critical areas such as telecommunications, smart cities, healthcare, education, agriculture and environmental management. The programme encourages research in cutting-edge fields like quantum encryption, machine-tomachine communication and nextgeneration networks, areas that are vital for India's technological future.

By supporting innovation at the grassroots level, Samarth seeks to create a strong, self-sustaining ecosystem for startups. It also aims to position India as a leading global hub for research and development in telecom and digital technologies.

Through initiatives like Samarth, C-DOT is helping to nurture a new generation of innovators who will drive India's growth in the knowledge economy. The programme marks a major step towards strengthening India's leadership in the global technology landscape and shaping a future built on indigenous excellence.





eghalaya Chief Minister Conrad K. Sangma inaugurated the state's first scientific coal mining block, "Saryngkham-A", at Byndihati in East Jaintia Hills on 17<sup>th</sup> March 2025. This marks a significant shift from the traditional rat-hole mining, which was banned by the National Green Tribunal (NGT) in 2014 due to safety and environmental concerns.

Rat-hole mining involved narrow tunnels where miners manually extracted coal, leading to numerous fatal accidents and severe environmental degradation. The coal-rich Jaintia Hills region was particularly affected by these unsafe mining techniques.

However, in 2019, following persistent efforts by the Meghalaya state government, the Supreme Court lifted the ban, paving the way for scientific coal mining under stringent regulations. The initiative aligns with the agreements signed in





## First Scientific Coal Mining Block in Meghalaya

January 2024 between the Central Government and three miners from Meghalaya.

During the inauguration, CM Conrad K. Sangma congratulated all stakeholders. including government officials. mine owners, mining lease applicants, and Dapmain Shylla (the owner of the newly inaugurated mining lease). He emphasised that the launch of Meghalaya's first scientific coal mine marks a historic moment for the state and its people.

Sangma acknowledged the severe financial hardship experienced by thousands of citizens, particularly those dependent on the coal mining industry, during the 10-11 years of the ban.

## Impact of Scientific Coal Mining

#### • Economic revival

The resumption of coal mining is expected to boost employment and revitalise the state's economy, which suffered significant setbacks due to the ban.

#### Enhanced safety for miners Unlike traditional methods,

scientific coal mining follows stringent safety protocols, ensuring the well-being of workers and reducing the risk of fatalities.

#### • Environmental sustainability

With regulated scientific mining techniques, the process aims to reduce deforestation, water pollution and soil degradation, addressing major concerns raised during the rat-hole mining era.

#### Legal compliance and transparency

All mining activities will be conducted under strict regulatory oversight, ensuring legal transparency and preventing illegal coal mining.

## DO YOU KNOW



Ironically it was Rathole mining technique that rescued 41 workers trapped in Uttarakhand's Silkyara tunnel project in November 2023 after a 25-tonne American mining machine failed.





E ast Coast Railways (ECoR) set a new benchmark by cementing its reputation as "Highest freight-loading railway zone."

ECoR has achieved handling of 250 million Tons (MT) of originating freight, 11 days ahead of schedule for the second consecutive year, reinforcing its position as a key player in **Viksit Bharat 2047.** 

ECoR's operational efficiency and strategic planning has sustained the growth, resulting in handling of 200 MT for the last 6 years.

Besides, ECoR has shown exceptional performance in freight unloading in FY24-25 hitting 228.3 MT, marking a 2.6% increase.

All three railway divisions under ECoR (Khurda Road, Sambhalpur and Waltair) have played a crucial role in achieving this record breaking milestone.

Significant contributors to ECoR freight handling include the coal movement by

- Mahanadi Coalfields Limited (MCL) at Talcher, Odisha.
- Container operation of major ports of Paradeep, Dhamara, Vishakapatanam, Gangavaram & Gopalpur.
- Iron ore movement from Balladila mines in Chhattisgarh.
- ✤ Koenjhar mines in Odisha.
- ✤ Steel & Aluminium industries.

## Factors behind ECoR's success

ECoR's motivated and dedicated workforce driving



## East Coast Railway achieves 250 MT of freight loading

efficiency, meticulous planning on the logistics handling and strong coordination amongst stakeholders (government and private) were key factors that contributed to the success story.

#### **ECoR's national impact**

➤ Movement of raw materials like iron ore, steel, aluminium and coal signals economic development thereby boosting industrial growth.

▶ Efficient freight movement through major ports boosts overall trade and exports.

➡ Increased freight loading also helps Indian Railways to improve financial performance and helps in offset of losses on passenger traffic segment.

ECoR will continue to be the torchbearer for Indian Railways on the freight segment in realising Viksit Bharat.



**PRAJYA** 



## **DO YOU** KNOW

- ECoR one of 19 zones of Indian Railways, established in 2003, is headquartered at Bhubaneswar. It covers Odisha, Andhra Pradesh and Chhattisgarh.
- Freight: Goods that are carried from one place to another by train, ship, lorry, etc.
- "Originating freight" refers to freight that is being transported from its point of origin or production, to a port or other shipping point.





## NEWS FROM THE CAPITAL

### **MOBILE DENTAL VANS IN DELHI**

elhi Health Minister Pankaj Singh flagged off six fully equipped mobile dental vans from the Maulana Azad Institute of Dental Sciences under the National Health Mission. Launched on World Oral Health Day, this initiative aims to provide essential dental care services to school children, senior citizens and vulnerable communities, including those in slums and low-income areas.

The mobile vans, equipped with GPS tracking, will provide services such as fillings, scaling and extractions, but cosmetic procedures will not be included. The locations of the vans will be accessible online for public convenience.



These state-of-the-art mobile dental clinics are equipped with automatic autoclaves, X-ray machines and fully functional dental chairs, ensuring both basic and secondary-level treatments.



Each van will be staffed with a team of doctors, nurses, hygienists to provide free dental services across Delhi.

The initiative will be operated in partnership with Maulana Azad Institute of **Dental Sciences in collaboration** with government dispensaries and primary healthcare services. It will also partner with departments such as education, social welfare and social justice to cater to school children and senior citizens. By reaching underserved communities, this project aims to make quality dental care accessible to all.



### ANTI – EVE TEASING SQUADS

The Delhi Police has introduced 'Shishtachar' Anti-eve teasing squads to enhance women's safety. These specialised teams will work in realtime prevention and intervention across the city's most vulnerable locations.

Each Delhi district will establish two dedicated squads, operating under the supervision of the ACP/CAW Cell of the respective district. These teams will actively monitor hotspots, conduct surprise inspections and ensure swift legal action against offenders.

### Each Shishtachar squad will consist of:

✤ One Inspectorpector

✤ One Sub-Inspector (Male/ Female)





➢ Four Female Police Officers (Constable / Head Constable/ASI)

✤ Five Male Police Officers (Constable/Head Constable/ASI)

✤ One Technical Assistance Officer (Special Staff/AATS)

➤ A four-wheeler for mobility

#### **Key responsibilities**

- Surveillance in high-risk areas: Squads will monitor identified harassment-prone zones based on police reports.
- Surprise checks and plainclothed officers: Female police personnel in civilian attire will be deployed at public places to identify potential offenders and take immediate action.



- Daily patrolling: At least two vulnerable locations will be covered daily, ensuring regular monitoring of harassment-prone areas.
- Public transport safety measures: Teams will conduct random checks in buses and metro stations, interacting with DTC staff, conductors and passengers to create awareness and ensure better safety.
- Community engagement: Delhi Police will collaborate with Resident Welfare Associations (RWAs), Market Welfare Associations (MWAs), and local volunteers to strengthen vigilance.
- Victim-centric approach: Officers will receive sensitivity training to handle harassment complaints with empathy, ensuring victims are not subjected to unnecessary public scrutiny

With growing concerns over women's safety in Delhi, the 'Shishtachar' squads aim to make public spaces secure and harassment-free.







#### India strengthens digital infrastructure with AI-driven initiatives

significant а stride towards enhancing India's digital ecosystem, Tata Communications and the Unique Identification Authority of India (UIDAI) have launched groundbreaking AI-powered solutions aimed at transforming enterprise operations and public service delivery.

#### Tata Communications unveils 'Vayu' – A Next-Generation AI Cloud platform

Recently, Tata Communications introduced Vayu, a comprehensive cloud platform designed to address the evolving needs of modern businesses and enterprises. Vayu Infrastructure-as-aintegrates Service (IaaS). Platform-as-a-Service (PaaS), AI capabilities, robust security and seamless cloud connectivity into a unified ecosystem, allowing vendors to to use AI to enhance their services to businesses and customers irrespective of the scale.

#### HIGHLIGHTS

- ➤ On-demand NVIDIA GPU access: Facilitates efficient AI model training, fine-tuning and deployment at scale with partnership with NVIDIA, the world's foremost manufacturer of AI compute units.
- **Studio:** Offers •• AI tools like an AI workbench and a model garden to accelerate innovation, by allowing designers and developers to test and refine models in real time, which would normally require an immense amount of resources if they have to be prototyped and manufactured for testing.







- Generative AI and AI ₩ **Operations** (AIOps): Automates operational processes enhances and intelligent monitoring to check on progress of active without projects needing human intervention.
- Multi-cloud support: Ensures flexibility in terms of the cloud partnership depending on security needs cost and features.
- Zero-trust security framework: Built with compliance to key regulatory standards, including the Digital Personal Data

Protection (DPDP) Rules 2025. DPDP Rules 2025, released by the Ministry of Electronics and Information Technology (MeitY), provide detailed guidance on implementing the Digital Personal Data Protection Act 2023.

#### UIDAI Collaborates with Sarvam AI to enhance Aadhaar services

Unique Identification Authority of India (UIDAI) has partnered with Bengaluru-based Generative AI company Sarvam AI to enhance the user experience of Aadhaar services. These include:



- AI-powered voice-based • interactions: Sarvam AI will set up its specially designed AI system inside UIDAI's secure computers, making sure all data stays safe and follows privacv rules including DPDP 2025. This system will allow people to talk to Aadhaar services using their voice. It will also give quick feedback during enrollment and updates, and help find if someone is charging more than they should.
- Real time fraud alerts: The integration will offer real-time fraud alerts to Aadhaar number holders for suspicious authentication requests, adding to existing security measures.
- Multilingual •• support: Keeping India's linguistic diversity in mind, the AIpowered voice interaction and fraud detection will initially support ten languages: Hindi, English, Telugu. Tamil. Marathi, Gujarati, Kannada, Odia, Punjabi and Malavalam, with plans for further expansion.

This initiative uses UIDAI's volunteer policy, fostering collaboration with industry experts. Volunteers from Sarvam AI worked closely with UIDAI's Technology Centre in Bengaluru to develop and deploy these AI solutions, with UIDAI retaining full ownership.

These initiatives by Tata Communications and UIDAI underscore India's commitment to leveraging advanced technologies like AI to drive innovation, enhance security, and improve user experiences across both enterprise and public service domains.





## Unmasking the MillenniumS



The sands of time continue to yield their secrets across the Indian subcontinent. Join Dr. Vasudevan, a seasoned archaeologist, and his eager student, Lakshmi, as they discuss the latest captivating discoveries, from Harappan settlements in Haryana to megalithic mysteries in Kerala and the rich Buddhist heritage unearthed in Odisha.



Namaste, Dr. Vasudevan! I was just catching up on some archaeological news.

I just saw some reports about Haryana.



Ah, Lakshmi, yes! Fascinating developments. The Haryana government

has officially declared the Harappan sites of Mitathal and Tighrana in Bhiwani as protected **monuments**. A significant step for preserving our ancient heritage, wouldn't you agree?

Absolutely! Over 4,400 years old, you said? What have we learned from these sites so far?



Mitathal was initially noted in 1913, but later excavations in the 1960s revealed its importance

during the **Copper-Bronze Age.** We found evidence of **Harappan**style town planning, distinct pottery with those characteristic geometric and natural motifs, and various artefacts made from materials indicating trade connections.



Harappan influence extending that far in the east is quite remarkable. What aboutTighrana?



Tighrana is a slightly later settlement, dating to around 2400 BCE, providing insights into

the **post-Harappan Chalcolithic culture of the Sothi people.** Their **mud-brick dwellings** and agricultural practices offer a glimpse into the transition after the main Harappan phase. This protection will undoubtedly aid future research.



Speaking of research, I also saw something about megalithic discoveries in Kerala.



Indeed! Near the Malampuzha dam, a recent survey uncovered a remarkable cluster of

over 110 megalithic structures spread across a considerable area. These burial sites, dating back to the Neolithic and Bronze Ages, include different forms like cists and stone circles.



That's a significant number. What does such a concentration suggest?



It hints at a substantial **early Iron Age population** and **complex burial rituals** in that

region. Studying these structures can reveal much about their social organisation and belief systems.





It adds another important dimension to the archaeological map of South India.



And finally, the discoveries in Odisha at Ratnagiri seem quite exciting as well.



incredible Buddhist finds. Three colossal Buddha heads, numerous votive stupas, and inscriptions have emerged, pointing to a significant shrine complex.



Colossal Buddha heads? That sounds impressive.



indeed. They are their remain intact.

inscriptions found alongside them have helped us date these finds to the 7<sup>th</sup> - 8<sup>th</sup> century CE. Ratnagiri was a prominent Buddhist centre, especially for Vajrayana Buddhism and the sheer number of votive stupas indicates a vibrant religious community. They even unearthed a large, broken monolithic elephant.



So, each of these discoveries sheds light on different periods and aspects of India's past.



Precisely. The Harappan sites in Haryana tell us about early urbanism and

trade. The megaliths in Kerala illuminate prehistoric burial practices and societal structures. And the findings at Ratnagiri deepen our understanding of Buddhism in eastern India. Each site contributes a vital piece to the grand mosaic of our history. These are exciting times for archaeology, Lakshmi! There's always more to learn from the whispers of the past.





## India Top Milk Producer Successes and challenges

India is today the largest producer of milk in the world. The production for the year 2023-34 is 239.2 million MT which is 25% of global milk production and the target for the year 2030 is 300 MMT.

#### **Success story**

From a milk deficit nation in the 1960s to the largest producer of milk since 1998, it is the National Dairy Development mission led by **Dr. Verghese**  **Kurien,** that made the change. This was a mission to increase the milk production in the country. Establishing dairy cooperatives, providing farmers with access to improved animal husbandry practices and establishing a national milk grid to connect producers with consumers were some of the significant actions taken to achieve the goal. The per capita availability of milk in India is now at 471 gms/day while the global average is 322 gms/day.





The per capita availability of milk in India is now at 471 gms/day while the global average is 322 gms/day.

### TRI **Gokul Mission**

- Mission Launch: Initiated in 2014, the Rashtriya Gokul Mission (RGM) significantly impacted milk production.
- Production Surge: Since RGM's inception, milk production has increased by 63.5%.
- Future Growth: Anticipated growth of 15% in milk production over the next three years.





The Rashtriya Gokul Mission (RGM) launched in 2014. is one major programme that has significantly aided the increase in milk production. Over the last decade India's milk production has grown from 146.3 MMT to the current level at a CAGR of 5.6 % while the global growth rate is 2%. The objectives of the RGM are to enhance productivity of bovines and increasing milk production

using advanced technologies so that it is sustained. It promotes indigenous cattle and buffalo rearing and aims to enhance artificial insemination coverage.

10 crore people, with 75%

of workers being women.

is crucial for rural economic development.

#### The challenges

These have programmes been highly successful and have brought about a sea change on the supply side of milk.

However, on the demand side there is lot more to be done to bridge the Milk Divide.

Milk is called a "complete food" as it contains the nutrients essential for growth, development and immunity. It provides high quality protein and is rich in Calcium and Vitamin D. It aids the cognitive abilities in children and enhances immunity. Milk also reduces the possibility of stunting and being underweight in children aged between six months and five years. It is therefore important to ensure the availability of milk to as many people as possible so that the population remains healthy. Milk is also important from an employment perspective. An estimated 10 crore people are engaged in milk production and 75% of them are women.

That said the reality today is that access to milk is unequal across regions, socio-economic groups and demographics. There is a rich - poor divide and the urban - rural divide as well. In addition, there are regional imbalances caused by lack of infrastructure and issues related to storage, refrigeration and logistics.

Support to small and marginal dairy farmers, creating awareness about the nutritional value of milk, subsidised milk programme for low income groups and strengthening dairy infrastructure in low production areas are some critical strategies that can be resorted to for increasing the access and consumption. GOI has introduced various programmes and initiatives to ensure equitable access to milk. This is bound to benefit millions of vulnerable people and make India nutritionally secure.





## **DNA Preservation Project**

Padmaja Naidu he Himalayan Zoological Park (PNHZP) in Darjeeling, West Bengal has become India's pioneer in preserving the DNA of wildlife species adapted to snowy and highaltitude environments. As of now, scientists at the zoo have collected and catalogued genetic material from 60 native species. These include tissues from Himalayan animals like the red panda and snow leopard, among many other native species. The samples collected were mostly from those that were either injured fatally in road accidents or passed away in captivity.

The DNA samples were preserved using cryogenic methods, i.e., stored in steel containers filled with liquid nitrogen at freezing temperatures. For longterm conservation research, the Zoological Park has its own dedicated laboratory.

Situated at an elevation of 2,150 metres and spanning 67.8 acres, the Padmaja Naidu Himalayan Zoological Park is not only India's highest-altitude zoo but also a sanctuary for rare species, particularly endangered ones like red pandas, snow leopards and Himalayan wolves.



The park plays a vital role in conservation breeding programmes for these species and is globally recognised for its dedicated efforts in preserving Himalayan biodiversity.

Debal Roy, Chief Wildlife Warden, shared that the DNA conservation project began in 2023 and continues to progress steadily. PNHZP has collaborated with CCMB (Centre for Cellular and Molecular Biology) Hyderabad to focus on advanced genetic research and conservation.

The conservation of genetic material plays a crucial role supporting future species in restoration efforts. By advancing scientific research, it helps in the study of biodiversity and genetic diversity, contributing to a deeper understanding of wildlife. Furthermore, such conservation efforts are essential for ensuring wildlife protection, helping to reduce the risk of species extinction. Modern cryogenic techniques, in particular, play a pivotal role in preserving DNA for extended periods, ensuring its longevity for future research and breeding programmes aimed at safeguarding endangered species.



ndian Railways has made remarkable strides in enhancing its solar energy capabilities as part of its dedication to renewable energy and sustainability. Bv February 2025, the organisation successfully installed 209 MW of solar power capacity across 2,249 railway stations and service With buildings. 275 stations benefiting from solar installations, Rajasthan leads in this initiative, followed closely by Maharashtra, which has 270 solar-equipped railway stations.

In the financial year 2024-25, 6 GW of the total 25 GW of renewable energy generated in the country came from solar sources. As of 31<sup>st</sup> March 2025, India's overall solar power capacity had reached 21 GW.

#### Indian Railways' renewable energy strategy

Indian Railways has set an ambitious goal to achieve 100% electrification by the end of 2025-26 and aims to become a net-zero carbon emitter by 2030. To meet its energy needs, the organisation plans to use renewable energy, primarily through a combination of solar and wind sources.



## Rajasthan tops in solar installations in railway stations

This strategy includes establishing long-term power purchase agreements with various independent power producers.

Additionally, the railways intends to capitalise on the rooftops and available land by installing solar power plants. By 2030, Indian Railways plans to harness a total of 20 GW of solar energy from its unused land.

#### **ADVANTAGES**

- Reduces reliance on conventional sources.
- Lower energy costs improve overall profitability for railways.

#### CHALLENGES State government regulations

Navigating the regulatory frameworks of different states regarding solar power



installations, grid connections and power purchase agreements can be complex.

#### **Transmission line issues**

High-voltage transmission lines can impose physical and safety constraints on the installation of solar panels, especially in areas where such lines already exist.

#### **Connectivity problems**

Ensuring the generated solar power can be efficiently transported to the grid and distributed to the railways' various needs requires robust grid infrastructure and connectivity.





Power evacuation is transporting the generated electricity from the solar panels to the grid for distribution and use.





The Ministry of Electronics and Information Technology (MeitY), in collaboration with IISc Bengaluru, IIT Bombay, IIT Madras, IIT Delhi, IIT Kharagpur and IIT Guwahati, successfully hosted India's first Nano Electronics Roadshow in March at the National Science Seminar Complex, IISc Bengaluru.

#### **Highlights**

### Showcasing India's semiconductor innovation

- 100+ intellectual properties (IPs) and 50+ groundbreaking technologies were presented.
- ➤ 35+ promising startups showcased innovations backed by six state-of-the-art nanoelectronics centres.
- ➤ Over 700 industry leaders, policymakers and academics participated, fostering collaboration.

#### Advancing India's semiconductor ecosystem

- ➤ The event emphasised India's push for self-reliance in semiconductors, aligning with Atmanirbhar Bharat initiative.
- MeitY's Nano Centres play a pivotal role in



innovation and talent development, contributing to an 85,000-strong skilled workforce.

India's semiconductor market is projected to grow from USD 45-50 billion today to USD 100-110 billion by 2030.

### Research meets real-world application

- ✤ 48 cutting-edge technology demonstrations were presented by students from Nano Centres.
- Four MoUs were signed between academia and industry, including:
- IISc with KAS Technologies and Antigone Solutions Pvt. Ltd.
- ➤ Center for Nano Science



and Engineering with India Electronics & Semiconductor Association (IESA).

- Madnani Chemdist Novatech LLP with Primary Healthtech Pvt. Ltd.
- The event recognised and awarded innovative startups, celebrating their contributions to semiconductor and nanoelectronics advancements.

### Industry-Academia collaboration

Abhishek Singh, Additional Secretary, MeitY, highlighted the role of initiatives like India AI Mission and INUP Programme in solving real-world challenges, "Nanotechnology is a field of research that integrates multiple scientific disciplines. For example, designing a chip brings together the best of physics, materials science and machine design. The true value is created when the entire ecosystem progresses together. While nanotechnology is not widely understood by the general public, it has vast applications that are part of everyday life. Technologies like ChatGPT, microphones and recording-editing devices all rely on advancements in nanotechnology, but the complexities behind it often go unnoticed by the common person."







Waqf as a concept and practice emerged in India in the early days of the Delhi Sultanate in the 12<sup>th</sup>/13<sup>th</sup> century CE and flourished under the Islamic rule.

he Waqf (Amendment) Act, 2025 also called the Unified Waaf Management, **Empowerment**, Efficiency and **Development Act (UMEED Act)** came into effect on 8th April 2025 after being passed by both houses of the Parliament and the President's assent on 5th April 2025. The Bill was originally introduced on 8th August 2024 and was referred to a Joint Parliamentary Committee (of both houses) (JPC) on 9th August 2024. JPC presented its report to the parliament on 13th February 2025. The Bill was debated in the Lok Sabha for 12 hours and in the Rajya Sabha for over 14 hours before the majority voted in favour of the Bill. This article is an attempt to explain Waqf and the act in simple terms.

### Waqf, the Acts and their evolution

Waqf stands for a permanent dedication of property (movable

or immovable) for charitable, religious or pious purposes, as recognised by Islamic law. It is a concept where the ownership of the property is transferred to a deity (Allah) and the income generated is used for beneficial purposes.

Waqf as a concept and practice emerged in India in the early days of the Delhi Sultanate in the 12<sup>th</sup>/13<sup>th</sup> century CE and flourished under the Islamic rule. The governance of Waqf properties has since then been regulated through several legislative enactments aimed at improving the administration of the properties.

The **Privy Council** in 1894 described waqf as "perpetuity of the worst kind" and declared it invalid. However, several acts were passed since then to regulate waqf properties in India. The **Mussalman Wakf Validating Act,** 1913, **Mussalman Wakf** 



Act. 1923 and the Mussalman Validating Wakf Act. 1930 were enacted prior to Indian Independence. Post Independence, The Wakf Act was passed in 1954 and amendments to this were made in 1959,1964,1969 and 1984. In 1995 a new Waqf Act was introduced which effectively repealed the 1954 Act. The Waqf Amendment Act, 2013 made significant changes to the Waqf Act and some of the current ills of the waqf property management, can be traced back to this.

#### Waqf Amendment Act 2025

The Waqf Amendment Act, 2025, aims to address several challenges in the administration and management of Waqf properties. It seeks to modernise the framework governing Waqf properties, introduce technology-driven management, address complexities and ensure transparency. It offers protection to properties through stricter penalties that could prevent encroachment and illegal transfers. By mandating the inclusion of women and non -Muslims, it scores on inclusion and diversity.

The 2025 Act eliminates the "waqf by user" concept (prospectively) that was considered by many as pernicious. It also abolishes another pernicious section that granted the Waqf Board the authority to designate any property as waqf land. It reinstates the pre-2013 regulation of allowing only practising Muslims to dedicate property to Waqf Board.

The Waqf Amendment Act 2025 ensures that women and children must receive their rightful inheritance before any property is declared as waqf, with special safeguards for widows, divorced women, and orphans. The Act explicitly prohibits the establishment of waqf on lands falling under the purview of Schedules V and VI of

## Understanding Waqf (Amendment) Bill, 2025

#### Waqf Act, 1995

#### Waqf (Amendment) Bill, 2025

- Provides for election of up to 2 members each from electoral colleges of Muslims: (i) MPs\*, (ii) MLAs# & MLCs^, and (iii) Bar Council members, from the State to the waqf boards
- Provides that at least 2 members must be women
- Empowers State Government to nominate 1 person from each background to the board (need not be Muslims)
- → Board must have 2 non-Muslim members, at least 1 member each from Shias, Sunnis & backward classes of Muslims & 1 member each from Bohra & Agakhani communities (if they have waqf in the State)
- → 2 Muslim members must be women

the Constitution to safeguard the rights of tribal communities.

This Act also streamlines dispute resolution by authorising a senior government official as the final authority instead of the Waqf tribunal. Further, appeals to the High Courts are allowed against Waqf tribunal decisions.

#### Concerns

It is felt by some that there was no adequate consultation with Muslim stakeholders while formulating this bill and hence lacks legitimacy and acceptance. It is also felt that the Act infringes on the rights of Muslims and undermines the autonomy of the community. Excessive government control may lead to delays in dispute resolution. There were street protests and violence in some parts of the country against this Act. It is however not clear whether these protests are spontaneous or engineered. The Act has also been challenged in the Supreme Court of India.

It would be really perplexing to common people that the 2013 version of the Act, many parts of which are clearly irrational and communal, has not faced such protests and opposition, while the 2025 Act that has been scrutinised and amended by the JPC and debated extensively in both houses of the Parliament is being opposed on the streets and the courts of law.

It is a bane that the Indian polity invariably accepts blatantly communal enactments without demur and vehemently opposes attempts to secularise and enforce the law of the land. Let us all hope that *Dharma* triumphs, as the case is with the Supreme court of India, and **"Yato Dharmastato Jayah"** is its motto.





## Hymenidium amabile rediscovered in India

an exciting scientific discovery, researchers have rediscovered а rare plant species, Hymenidium amabile, in India after more than a century. The plant, which belongs to the Apiaceae family, was last seen between 1906 and 1910 in Sikkim. It was found near Lagong Tso Lake in the Tawang district of Arunachal Pradesh, located at an altitude of 4,654 metres.

The rediscovery was made by a team from the Divisional



Forest Office in Tawang, working alongside the Botanical Survey of India (BSI). The plant, once thought to be lost, was first described in 1912 from Chumbi Valley in Tibet. *Hymenidium amabile* is also found in Bhutan and China; its rediscovery in India is significant as it shows the incredible diversity of the region's plants.

The plant was spotted growing on rocky alpine slopes, with only a small group of mature plants found—about four to five mature plants and a few young ones. The team involved in this discovery included Dr. Manas Bhaumik, Suman Halder and Dr. Anand Kumar, with initial observations made by Tage Haniya, Abhijeet Das and Lishi Tossu, led by Piyush A. Gaikwad, the Divisional Forest Officer in Tawang.

*Hymenidium amabile* is unique for its hollow, aromatic stems and white petiole wings with purple veins. It also has dark purple petals and a solitary flower cluster. Beyond its rarity, the plant is known for its medicinal uses in Bhutan and China, including antimicrobial and antiparasitic properties. Because of its limited growth area, the researchers plan to assess whether it should be included in the IUCN Red List, which tracks endangered species.



Arunachal Pradesh is known for its rich biodiversity, but it faces growing environmental challenges. Piyush Gaikwad emphasised that this discovery is a sign of hope for the region. The team plans to continue exploring and conserving other rare species in the area. **This rediscovery highlights the importance of ongoing research and conservation efforts in the Indian Himalayas.** 





#### What is a GI tag?

Indication eographical (GI) Tags are awarded whether products, natural or man-made, which have a unique association with a specific geographical region within а country. These tags represent the recognition of intellectual property rights linked to the unique qualities and reputation of the product derived from its origin. In order to function as a GI, a sign must identify a product as originating in a given place.

#### Significance

- The utilisation of a Geographical Indication (GI) tag serves as a safeguard for the reputation and distinctiveness of a product, acting as a barrier against unauthorised use of its name or indication.
- •• This protective measure ensures that consumers access genuine products shielding producers while from the adverse effects of counterfeiting. Safeguarding a geographical indicator (GI) empowers those authorised to use the indication to take legal action against unauthorised



users (commonly known as "free-riders") seeking to benefit from its reputation.

- In India, the registration of GIs not only enhances legal protection but also streamlines the process of pursuing infringement cases, making it more accessible and effective.
- ➤ An embedded GI tag contributes to enhanced marketability and better price realisation for a product.
- By offering consumers a guarantee of quality and authenticity, especially crucial in international markets, it establishes a foundation for increased demand and premium pricing.
- Beyond the impact on the market, GI tags play a vital role in fostering economic development.

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#### Successful Geographical Pricing Strategies



- ➤ They endow producers with a competitive edge, drawing attention from tourists and potential investors to the specific region associated with the product.
- Furthermore, the presence of GI tags can serve as a catalyst for innovation and creativity.
   Producers, incentivised by the



- In India, GI Tags were introduced on 15<sup>th</sup> September 2003.
- The first product to receive a GI Tag in India was the famed Darjeeling Tea from West Bengal, highlighting the tea's distinctive and authentic qualities that stem from the renowned Darjeeling region.
- As of April 2025, India has approximately 643 GI-tagged products across various categories.

MAY 2025

### PRODUCTS THAT RECEIVED GI TAG RECENTLY

Name of the product	Place of origin	Significance	Picture
Betel leaf	Kumbakonam, Tamil Nadu	<ul> <li>Grown in Thanjavur's fertile Cauvery river basin, giving it a unique taste and aroma.</li> <li>Cultivated in Thiruvaiyaru, Papanasam, Thiruvidaimarudur, Kumbakonam and Rajagiri.</li> </ul>	
Thovalai flower garland	Kanyakumari, Tamil Nadul	<ul> <li>Handcrafted using white, red and green flowers woven like a mat.</li> <li>Recognised for its artistic floral arrangements.</li> </ul>	
Chapata chilli	Warangal, Telengana	<ul> <li>The chilli is called Tomato chilli as it has a bright red colour and is shaped round like a tomato.</li> <li>It is less spicy but lends a bright red colour with extensive flavour due to its capsicum oleoresin properties.</li> </ul>	
Nolen Gurer Sandesh	Kolkata, West Bengal	<ul> <li>A winter delicacy made from chhena (curdled milk) and nolen gur (date palm jaggery).</li> <li>The jaggery imparts a rich, caramel-like flavour and a warm golden hue to the sweet.</li> <li>Iconic Bengali sweet that holds an important place in Bengali households during winter months.</li> </ul>	
Saudagari block print	Jamalpur, Ahmedabad, Gujarat	<ul> <li>Hand-carved wooden blocks dipped in natural dyes.</li> <li>Intricate patterns transferred onto cotton fabric using natural dyes.</li> <li>Traditional motifs and floral designs unique to the region.</li> </ul>	
Ryndia (Eri)	Meghalaya	<ul> <li>Hand-spun, naturally dyed, organically produced.</li> <li>Ethically sourced and hand-woven.</li> <li>Oeko-Tex certification from Germany for eri silk.</li> <li>Free from harmful substances and safe for human use.</li> </ul>	OEKO DEKO OEKO-TEM CERTIFICATION FOR ERI SILK
Khasi handloom	Meghalaya	<ul> <li>Traditional textile art from the Khasi community.</li> <li>Known for unique weaves and natural dyes.</li> </ul>	

• OEKO-TEX certification is a globally recognised safety standard for textiles, ensuring they are free of harmful substances and safe for human use. It is a voluntary testing and certification system that evaluates textiles at every stage of production, from raw materials to finished products.

• Eri silk, also known as "*ahimsa* silk," is a natural protein fibre derived from the cocoons of the *Philosamia ricini* silkworm, which is native to India. Unlike traditional silk production, eri silk extraction does not involve killing the silkworm. The moth naturally emerges from its cocoon, making it a vegan and environmentally friendly alternative.

protection provided, are encouraged to elevate the quality and distinctiveness of their products, contributing to ongoing advancements within their respective industries.

## A GI tag can be applied to a wide range of products including:

- ➤ Musical instruments
- ➤ Manufactured items
- ✤ Food items
- ➤ Agricultural products





## New wildlife sanctuary named after **Ambedkar**



n a proud move for conservation and social tribute, Madhya Pradesh has announced the creation of a new wildlife sanctuary named Dr. Bhimrao Ambedkar Abhyaran. Covering an area of 258.64 sq km in Sagar district, this sanctuary was declared just ahead of the 134<sup>th</sup> birth anniversary of Dr. B.R. Ambedkar, one of India's greatest social reformers and the principal architect of our Constitution. Dr. Ambedkar was born in Mhow, Madhya Pradesh, making the naming of the sanctuary even more meaningful for the state. The sanctuary includes parts of the Banda and Shahgarh tehsils and stands as a symbol of the state's commitment to preserving both biodiversity and the legacy of Dr. Ambedkar.

> More than just a protected area, Dr. Bhimrao Ambedkar Abhyaran is expected to play a crucial role in wildlife conservation by acting as

a natural corridor connecting two major tiger reserves — Panna Tiger Reserve and the newly notified Madhav Tiger Reserve. This corridor will allow tigers, leopards and other species to roam freely, supporting healthier animal populations and reducing the chances of human-wildlife conflict. Madhya Pradesh, already celebrated as the "Tiger State of India", is taking another major step in strengthening its leadership in wildlife protection. By connecting important habitats, the state is helping maintain ecological balance and promoting the free movement of endangered species across the landscape.

Beyond wildlife, the new sanctuary is expected to benefit people By promoting too. will eco-tourism. it create opportunities for new local communities, offering jobs in areas like guiding, hospitality and nature conservation. Visitors will soon be able to explore the lush forests, learn about native wildlife and experience the beauty of nature, all while contributing to sustainable development.

This sanctuary marks a proud moment for Madhya Pradesh and a positive step toward a greener, more inclusive future where both nature and people thrive together.





## First Panchayat Advancement Index report

n a major stride towards localising Sustainable Development Goals (SDGs) and empowering grassroots governance, the Ministry of Panchayati Raj has launched the Panchayat Advancement Index (PAI) — a transformative tool to measure the progress of over 2.5 lakh Gram Panchayats (GPs) across India. It



serves as a multi-domain and multisectoral index to be used to assess the overall holistic development, performance and progress of Panchayats.

#### Panchayat Advancement Index

Panchayat Advancement Index (PAI) is a composite index and has been compiled based on 435 unique local indicators (331 mandatory and 104 optional) consisting of 566 unique data points across 9 themes of LSDGs (Localisation of Sustainable Development Goals) aligned with National Indicator Framework (NIF) of the Ministry of Statistics and Programme Implementation (MoSPI).

Based on the PAI scores and thematic scores achieved by different Gram Panchayats, these GPs are grouped into one of the categories of performance:



#### **Panchayat Development Themes**



Data from 5 States/UTs (Meghalaya, Nagaland, Goa, Puducherry, West Bengal) excluded due to pending validation.

decision-making at

Panchayat level

Empowers data-driven





## Indian Navy launches Frigate Tavasya

Tavasya, named after the mace of Bhima from the Mahabharata symbolises, our Navy's indomitable spirit and growing strength and represents a leap forward in the modernisation of naval forces.

#### Yard bytes

significant milestone in indigenous naval shipbuilding programme was witnessed on 22<sup>nd</sup> March 2025 in Goa Shipyard Limited (GSL) with the launch of INS Tavasya, the second stealth frigate under the Project 1135.6 Additional Followon Ships.

Tavasya, named after the mace of Bhima from the Mahabharata symbolises. our Navy's indomitable spirit and growing strength and represents a leap forward in the modernisation of naval forces along with its sister ship 'Triput' (launched in 2024). Both frigates incorporate a high degree of indigenous content, contributing to national capability building, employment generation and the advancement of defence industrial might.

#### Project 1135.6

- Project 1135.6 also known as the Talwar-class frigate programme originated from the Russian Krivak III-class design and is a result of Indo-Russian naval cooperation. Initially the frigates were constructed in Russia but the additional follow-on ships are now being built indigenously by our own shipyards marking a significant leap towards India's self-reliance in defence capability and production.
- Designed for multi-role operations, including antiship, anti-submarine and antiair warfare these frigates are a force multiplier.
- Contract for the two Project 1135.6 follow-on frigates was signed between the MoD and GSL in 2019.



### Self-reliance in warship construction

GSL, a mid-sized shipbuilder has now evolved into a leading defence vard and strategic asset by delivering some of the most complex and high-end naval platforms. Project 1135.6 reaffirms the capability to execute high-end warship programmes with precision, efficiency and an unmatched commitment to national security with the launch of these complex. weaponintensive frigates in the space of eight months.

Despite geopolitical challenges affecting global supply

chains, India in the recent years has time and again demonstrated major advancements in our indigenous ability in warship construction.

#### **Salient features and Arsenal**

With a displacement exceeding 3,800 tons, Tavasya is designed to execute a wide range of offensive and defensive operations showcasing our strategic dominance in the Indian Ocean Region.

Tavasya sets a new benchmark for localisation and resilience with 56% indigenisation by incorporating critical systems



such as the BrahMos missile, torpedo launchers, sonar and auxiliary control systems.

- ▶ Length-124.8
- ▶ Draught- 4.5 m
- ▶ Speed 28 knots (max)
- Powered by a combined gas turbine propulsion system, allowing both efficient cruising and high-speed manoeuvrability.
- Stealth capabilities include radar-absorbing materials and a carefully shaped hull. The frigate features reduced radar cross-section to enhance stealth capabilities.

An impressive array of advanced weapons and sensors, including the BrahMos supersonic cruise missile system, Shtil-1 medium-range surfaceto-air missiles, a 100 mm A-190 naval gun, torpedo tubes and antisubmarine rocket launchers.

→ Aviation capability (anti-submarine & surveillance) on board for operating naval helicopters like the Kamov Ka-27 or Ka-31.



#### Conclusion

The launch of Tavasya marked Indian Navy's ever growing prowess into a modern, combat-ready maritime force with presence in the Indo-Pacific for safeguarding our national interests and maintaining our regional stability.







## First batch of cyber commandos trained at IIT-M

#### **Overview**

- Investigation of cybercrimes and protecting digital assets is of genuine concern nowadays as more and more citizens fall prey to scamsters every day.
- ➤ With the growing sophistication of cyber threats in India and plethora of cyber frauds, proactive measures have now been instituted by GoI.
- Creation of a dedicated unit of 'cyber commandos' sourced from both Central and State police forces across the country is imperative. Each police organisation has to identify ten suitable candidates for this specialised unit.
- Initiative aims to bolster cyber defence capabilities, safeguard information technology



networks besides conducting thorough investigations in cyberspace.

- ➤ The training will be conducted in collaboration with top institutions and the Indian Cyber Crime Coordination Centre (14C) and the Ministry of Home Affairs (MHA).
- ▶ I4C will train 5000 cyber commandos in the next five years.
- More than ₹33,000 crore in the last four have been pocketed in cyber frauds by scamsters.

#### About I4C

I4C, an initiative of the home ministry, will focus on

 improving coordination between various law enforcement agencies and stakeholders



- ✤ building capability
- ✤ tackling cybercrimes
- improving citizen satisfaction levels.

#### Cyber commando training

Training of cyber commandos was formally launched at multiple institutes starting from October Rashtriva 2024. The Raksha University (RRU), Gandhinagar launched the Cyber Commando Training Programme in collaboration with the Indian Cyber Crime Coordination Centre, MHA. Several other institutions and a few other premier institutions were also involved in training viz,

- IITs and IIITs: IIT Kanpur, IIT Madras and IIIT Kottayam, IIIT Naya Raipur.
- Other premier institutions: Defence Institute of Advance Technology (DIAT) Pune, the National Forensic Science University (NFSU) at Gandhinagar, Delhi and Goa respectively.

The residential training programme covered important subjects like cyber defence, ethical hacking, digital forensics and penetration testing. Certifications awarded are recognized worldwide. Comprehensive training modules were designed by cyber security experts and practical instructions imparted in ethical hacking, digital forensics, threat intelligence, incident response strategies and other advanced cyber security measures.

#### **First batch**

The first batch of police officers were sub-divided into 10 groups of 30 officers and assigned to 10 different centres including RRU. In October 2024, an initial 246 "cyber commandos" began their six months of rigorous training. Trainees were selected from Gujarat, Chhattisgarh and Andaman & Nicobar Islands.

#### ▶ IIT Madras

IITMadrasPravartakTechnologiesFoundationcompleted the training for the firstbatch on 1st April 1, 2025 with 37law enforcement officers.

#### 

IIT Kanpur's C3iHub trained a batch of 36 officers at IIT Kanpur's Noida Outreach Centre.

#### IIIT Kottayam

The first batch of Cyber Commandos completed training at IIIT Kottayam, with the training being conducted in collaboration with the Kerala Police Cyber Crime Department.

Curriculum covered critical topics such as IT fundamentals, cloud computing, cyber laws, IoT and hardware security, malware



analysis, crypto currency threats, block chain and crypto currency vulnerability. Participants gained hands-on experience in mitigating cyber risks and responding to realworld cyber incidents.

On successful completion of training, each individual was awarded international certifications such as

- ➤ Certified Ethical Hacker (CEH),
- Computer Hacking Forensic Investigator (CHFI)
- Certified Threat Intelligence Analyst (CTIA) issued by EC-Council, a global leader in cyber security education.

#### **Future Roadmap**

The cyber commando training programme is part of a broader government initiative to train 5,000 cyber commandos over the next five years. This initiative will ensure that the officers are continuously trained and updated on the latest cyber trends. The trained officers will return to their respective police forces and serve as a critical resource for responding to cyber incidents of national importance.

#### Their roles will include:

- ➤ Leading cyber investigation teams.
- ➤ Guiding and upgrading local cyber units.
- ✤ Training grassroots personnel.
- Proactively dismantling cybercrime networks.

These officers will not only serve as first responders but also act as predictors and preventers of cybercrime by positioning themselves at the forefront of India's digital law enforcement.







## New North Jetty at Kochi Naval Base

The successful and timely completion of projects showcases indigenous engineering excellence and enhances own Navy's capabilities to efficiently support and turn around major naval combatants.

#### Rewind

- То increase the berthing ships capacity of naval memorandum of а understanding (MoU) was signed between Indian Navy and Cochin Port Trust to modernise the ancient north jetty at the naval base in 2019.
- Reconstruction and expansion of the north jetty as a modern jetty with facilities for berthing of major naval ships was to be taken up at an approximate cost of ₹600 crore. The new jetty was expected to be completed in four years with October 2024 being the timeline for completion of the project.
- The project was executed by the Cochin Port Authority and awarded to Afcons Infrastructure Limited,

a leading infrastructure development company in India. The development of the North Jetty marks a significant milestone in strengthening the naval base at Kochi and enhancing logistical support for the Indian Navy.

#### Inauguration

Navy Chief Admiral Dinesh K Tripathi inaugurated the New North Jetty on 27th March 2025 and complimented the milestone which project symbolised commitment unwavering and teamwork of all associated agencies and stakeholders. The successful and timely completion of projects showcases indigenous engineering excellence and enhances Indian Navv's capabilities to efficiently support and turn around major naval combatants.







#### Significance

The infrastructure will facilitate induction of nextgeneration offshore patrol vessels, shallow watercraft and other ships and the impending replacement of the existing cadet training ships along with the operational availability of 80% of the big warships and an important addition to Southern Naval Command.

 Extending 300 metres in length and 18 metres in width, it can accommodate various classes of naval ships thus improving the berthing and logistical operations.

The jetty will provide enhanced operational flexibility, ensuring better maritime security operations in the southern peninsula.

#### Strategic importance

- ➤ Enhanced berthing and operational support.
- ➤ Cater for increasing demand of berthing facilities.
- Greater logistical efficiency and support for continuous naval operations.
- Increased maritime security operations and defence preparedness in the Indian Ocean Region (IOR).
- Quick mobilisation of naval assets enhancing India's ability to respond to threats and crises.
- ➤ Crucial logistical node.
- Commitment of various stakeholders in fortifying India's maritime infrastructure.







onsidering that we have completed multiple editions of this series since the last refresher Q&A edition, let us refresh our memory regarding some of the subjects we have discussed since then.

#### Question: What are some legislations related to labour and employment in India?

#### **Answer:**

 (i) The Trade Unions Act and Industrial Disputes Act, which deal with industrial relations;

- (ii) The Payment of Wages Act and the Minimum Wages Act, which deal with wages and compensation; the Factories Act, the Mines Act and the Contract Labour (Regulation & Abolition) Act;
- (iii) Maternity Benefit Act and the Equal Remuneration Act, which are aimed at promoting gender equality and empowerment.

#### Q: What is the requirement for a law governing competition in the markets?

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A: In a scenario of little to no state intervention in the open market, there may be scope for foul play by players for gaining power over the market, hampering other players and the level of innovation in the market. This sets the base for a framework regulating competition.

## **Q: What does the Gratuity Act, 1972 deal with?**

A: 'Gratuity' is a sum paid by employers in exchange for the services rendered by the employee. Under the Gratuity Act, gratuity is payable to an employee on his retirement or resignation from an establishment, after completing minimum а number of years of service. The terms regarding (a) calculation of the number of years of service, (b) calculation for the amount of gratuity and (c) the manner of



payment of the gratuity, are detailed under the Gratuity Act.

Q: Which Act nationalised the management of the life insurance business in modern India?

## **Q: What are the objectives of the Competition Act, 2002?**



- A: The primary objectives of the Competition Act are to:
- (a) prevent practices having adverse effect on competition,
- (b) promote and sustain competition in markets,
- (c) protect the interests of consumers and
- (d) ensure freedom of trade of the participants of the markets in India.

A: The Life Insurance Corporation Act, 1956.

Q: What are some factors considered in assessing whether or not anticompetitive agreements could have a potential appreciable adverse effect on competition?

- A: The factors are:
- (i) Barriers to new entrants;
- (ii) driving existing competitors out of the market;
- (iii) accrual of benefits to consumers; and
- (iv) promotion of technical, scientific and economic development.



#### Q: What does the Motor Vehicles Act, 1988 relate to?



A: The Act governs the usage of motor vehicles and includes provisions for insurance of vehicles against third party risks.

## Q: What is '*suo motu'* jurisdiction?



A: 'Suo motu' is a Latin term which translates to 'on its own motion.' In legal jurisprudence, suo motu jurisdiction refers to the court, on its own, taking up issues which in its opinion pose a larger issue or a potential threat to public safety.

## Q: What are some factors considered in assessing abuse of dominance?

- A: Some major factors are:
- (i) market share of the enterprise;
- (ii) economic power of the enterprise;
- (iii) relative power of the enterprise vis-à-vis the other market players and
- (iv) dependence of consumers.





### पाकृतिकजीवनम् |Living Naturally

### Brain - boost food for students

Muts

n today's competitive academic environment, students often face immense mental pressure, especially during exam time. The need for sustained focus, sharper memory and emotional balance becomes paramount. While modern supplements and stimulants flood the market promising cognitive enhancement. Indian naturopathy. with roots in holistic its well-being and natural nutrition, offers a time-tested solutionnuts. From almonds to walnuts. cashews to pistachios, nuts have long been regarded as brain food,



deeply embedded in Ayurvedic and naturopathic wisdom. Their rich nutrient profile supports not only brain function but overall wellness, making them ideal for students preparing for exams.

Indian naturopathy is based on the principle that the body has an innate capacity to heal itself when supported by natural elements-earth, water, air, fire and ether. Diet is a cornerstone of this approach, emphasising the consumption of satvic foods that are fresh, plant-based, and rich in prana (life energy). Nuts, in their raw or minimally processed form, fall into this category and are considered satvic, energising both body and mind without causing the restlessness or dullness often associated with *rajasic* and tamasic foods.

#### Nuts are densely packed with essential nutrients that support brain health:

1. Healthy fats: Nuts are a rich source of monounsaturated and polyunsaturated fats,

particularly omega-3 fatty acids. These fats are crucial for maintaining the fluidity of brain cell membranes and promoting efficient neurotransmission.

- E: Known 2. Vitamin for antioxidant properties, its vitamin E is abundant in hazelnuts almonds and sunflower seeds. It protects brain cells from oxidative stress, which is particularly beneficial during periods of prolonged mental effort like exams.
- 3. Magnesium and zinc: These minerals are vital for nerve function, synaptic plasticity and memory formation. Cashews and almonds offer a healthy dose of both, helping to combat stress-induced cognitive decline.
- **4. B-Vitamins:** Nuts like peanuts and pistachios are rich in B-complex vitamins, which are necessary for energy production and mood regulation.



## The benefits of **EATING NUTS**

#### Almonds

Rich in vitamin E, magnesium, and antioxidants

#### Brazil nuts

High in selenium, which supports immune and thyroid health

#### Cashews

Support energy production and bone health

#### HazeInuts

Rich in vitamin E, folate and hearthealthy fats

#### Pistachios

Support heart health and weight management

#### Walnuts

Packed with omega-3 fatty acids and antioxidants

 Amino acids: Tryptophan, an amino acid found in nuts, helps the body produce serotonin—a neurotransmitter associated with feelings of well-being and calmness, essential during high-stress periods.

Ancient Ayurvedic texts emphasised the importance of nuts, especially almonds (*badam*), for mental development and memory. Children in traditional Indian households are often given soaked almonds in the morning, a practice supported by the understanding that soaking makes the nuts easier to digest and enhances nutrient absorption.

Walnuts (*akhrot*), with their brain-like shape, are recommended in Ayurveda as *medhya*—foods that enhance intellect and cognitive function. Their high omega-3 content supports this claim scientifically, making them ideal for students.

Moreover, Ayurveda suggests using nut-based herbal formulations like *badam rogan* (almond oil) for memory and concentration enhancement. A few drops in warm milk before bed is believed to promote restful sleep and rejuvenate the mind.

### How to incorporate nuts in daily food

Indian naturopathy encourages mindful eating Instead of bingepractices. on processed foods. snacking students benefit from can integrating nuts into their daily routine:

- Morning boost: Start the day with a handful of soaked almonds and raisins to awaken the mind and provide sustained energy.
- Midday snack: A small portion of trail mix (almonds, walnuts, pistachios and pumpkin seeds) can help prevent the post-lunch slump and maintain focus.
- Pre-exam calm: Eating a few cashews or sipping on warm milk with a pinch of nutmeg and almond powder can help soothe exam anxiety.
- Bedtime ritual: A glass of warm milk with crushed walnuts or almond oil may promote better sleep and memory consolidation.

While nuts are incredibly beneficial, moderation is key. Overconsumption may lead to digestive issues or weight gain. Naturopathy advocates balance and individual suitability—some students may have sensitivities or allergies and should consult a practitioner.

It is also advisable to avoid salted or sugar-coated varieties. Raw, dry-roasted or soaked nuts are preferable from a *satvic* standpoint. Combining nuts with other brain-boosting foods like fruits, whole grains and herbal teas (like *brahmi* or *tulsi*) further enhances their effectiveness.

Nuts. valued for their mental strengthening properties, are a perfect example of this philosophy. As natural sources of essential fatty acids, vitamins and minerals, nuts support enhanced memory, reduced anxiety and better cognitive performance—exactly what students need during exams.



### Women scientists of India

## Prof. Aditi Sen De



Aditi's deep interest in mathematics and enthusiasm to find solutions to complex problems through logical reasoning was inspired by her mother who served as a maths teacher in a nearby school. Thanks to her parents Lakshmi Dev and Ajit Kumar Dey, her outlook about society expanded when she learnt history and archaeology, which increased her thirst towards development. She did her schooling at Sree Sarada Ashrama Balika Bidyalaya and completed higher secondary education at Sakhawat Memorial Govt. Girls High School, Kolkata.

During her school days, she loved to role play teaching



mathematics using the blackboard at home, for her imaginary students. Her elder cousin who did Masters in statistics from Indian Statistical Institute (ISI), Kolkata broadened her path and passion to pursue Mathematics. She joined B.Sc. (Hons) in Mathematics from Bethune College.

Later she did her Masters at the reputable Applied Mathematics Department of the Rajabazar Science College, University of Calcutta. This department has produced a number of mathematicians as well as mathematical physicists renowned as international figures, like S.N.Bose, Meghnad Saha, Nikhil Ranjan Sen and many more. She recalls how being in this department greatly motivated her to pursue bigger ambitions. This is the place where she honed her expertise in quantum and statistical physics and started her preliminary research in the field of quantum information theory.

After obtaining her master's degree in 1997, she pursued her passion for quantum physics by joining research at the University of Gdańsk, Poland.





The field of quantum information and computation was still in its early days, and University of Gdańsk was one of the main research centres in the world. where important work on the theory of quantum entanglement was being done. In collaboration with her supervisor Marek Żukowski and other eminent physicists, she worked on some fundamental problems on quantum entanglement theory. quantum cryptography and quantum communication. Her husband Ujjwal Sen was also a researcher in the same institute. Aditi and her husband supported each other, grew together in an environment that was intellectually vibrant and rewarding.

Completing her doctoral studies, Dr. Aditi moved to Hanover, Germany as a Alexander von Humboldt research fellow to work with Maciej Lewenstein at the Leibniz University in 2004. She joined the quantum optics theory group at ICFO-The Institute of Photonic Sciences at Barcelona, Spain as postdoc fellow. Soon she became a Ramón y Cajal researcher by winning the prestigious tenuretrack position from the Spanish Ministry of Science and Innovation. Here, she worked on implementation of error resistant universal quantum processing information during 2005-2008. Her group was involved in realising a neural network, in a chain of trapped ions with induced long range interactions, which permits one to store information distributed over the whole system. Her research also focused on the study of quantum phase transitions using entanglement as a key figure of merit.

Aditi decided to return to our motherland. After a brief stint as a faculty member in Jawaharlal Nehru University, she joined





Harish-Chandra Research Institute in Pragyaraj in 2009. Along with other physicists, she started the Quantum Information and Computation (QIC) group here, which is involved in research on a wide spectrum of topics in quantum information and computation. This includes quantum algorithms, quantum communication, quantum cryptography and theory of entanglement. In 2012, she won the biennial Buti foundation award, given by the Indian Association Physics for her outstanding contributions in the area of theoretical physics. Other interests of this group include realisable quantum computers in

ultra-cold gases and in quantum optical systems. "It is a science at the crossroads of physics, computer science, mathematics, and information theory, and can potentially revolutionise the future of communication and computational technologies," Prof. Aditi points out.

Dr. Aditi's research has been instrumental in advancing the field of quantum information and communication. Her notable contributions include the formulation of a computable entanglement measure, developing a novel density-matrix recursion method.

In the field of cyber security, her work involves investigations into the theory of quantum channels, the security of quantum cryptography and the quantification of quantum correlations. A giant leap in processing speeds also means faster breaking of encryption, which is the pillar of secure banking. "Currently, no country in the world has a quantum computer. But when anybody does, they will be able to break all the codes protecting our data today. People around the world are trying hard to build a quantum computer, they have built a few qubit-functional quantum computers, but there are lots of difficulties like scalability and proper physical systems. So, we need to work towards creating our own quantum computer as well as codes that cannot be broken by a future computer," says this icon of quantum computing.

#### Accolades

2018- Dr Shanti Swarup Bhatnagar Prize for Science and Technology given by CSIR each year. She was the first woman to receive this prestigious award in the physical sciences category.

**2022** - Elected to Indian Academy of Sciences and then to Indian National Science Academy.

**2023** - GD Birla Award for scientific excellence.

• Neural network is a computer system modelled on the human brain and nervous system.

• Quantum entanglement is when two particles link together in a certain way no matter how far apart they are in space.



### **Param Veer Vandana**





## Lt. Mangj Rumar Pandey

ieutenant Manoj Kumar Pandey was born on 25th June 1975 to Gopi Chand and Mohini Pandey in Rudha village, Sitapur district, UP. He excelled at Sainik School, Lucknow, where his dream of serving in the Indian Army began. After schooling, he joined the National Defence Academy (NDA) in Khadakwasla and later completed his training at the Indian Military Academy (IMA) in Dehradun. He was commissioned into the first battalion of the 11 Gorkha Rifles (1/11 GR), renowned for its valour. During the Kargil conflict, his bravery led to a promotion to Captain.

The first battalion of the Gurkha Regiment, now the Gorkha Rifles, was formed in 1815 during the Anglo-Nepalese War. The British began recruiting Gurkhas into the British Indian Army due to their impressive performance. After the 1947 partition, six regiments remained with the Indian Army, while others were transferred to the British Army under a Tripartite Agreement. The 11 GR, established on 1st January 1948, is the only Gorkha Regiment formed in independent India. The regiment participated in conflicts against Pakistan in 1947 and 1971 and its motto is "Yatraham Vijay, Statra" (We are metaphors of victory).

1/11 GR was tasked with clearing the Kalubhar Ridge during the Kargil War. Lieutenant Manoj Kumar Pandey, the Number 5 Platoon Commander, aimed to eliminate enemy positions to protect his battalion during their advance.

On the night of 2<sup>nd</sup> to 3<sup>rd</sup> July 1999, as they approached their objective, the platoon came under heavy enemy fire. Undeterred, Lieutenant Pandey maneuvered his men into a better position and led the charge on the left. He fearlessly attacked four enemy positions, killing several personnel. Despite sustaining serious injuries from enemy fire, he led a successful assault on the fourth position but tragically succumbed to a fatal gunshot. His extraordinary bravery provided a critical foothold for the battalion, leading to the capture of Kalubhar Ridge. Lieutenant Manoj Kumar Pandey was awarded the Param Vir Chakra posthumously for his exceptional valour and leadership.

"If death strikes before I prove my blood, I promise, I will kill death."

*"Some goals are so worthy, it's glorious even to fail."* 

- Lt Manoj Kumar Pandey

In remembrance of this brave alumnus, Sainik School in Lucknow, Uttar Pradesh adopted the name 'Manoj Kumar Pandey UP Sainik School, Lucknow' and inaugurated a gate named 'Captain Manoj Kumar Pandey PVC Dwar'.



### Padma Awardee



## Thiyam Suryamukhi Devi

Thiyam Suryamukhi Devi is a prominent and esteemed Indian classical dancer, widely recognised for her exceptional mastery of Manipuri dance. She was born in 1935 in Keisampat Leimajam Leikai, Imphal, Manipur, and has devoted her life to preserving and promoting this rich traditional art form.

Her formal dance training began in 1954 at the Jawaharlal Nehru Manipur Dance Academy where she learnt (JNMDA), under the guidance of esteemed gurus. Moving out of Manipur in the early part of her career, she also worked and trained with contemporary choreographers such as Prabhat Ganguli and Narendra Sharma. She received training in the Chhau dance of Mayurbhanj from Krishnachandra Naik.

As a solo Manipuri dancer, she performed compositions by her Guru, Amubi Singh, from the 1960s and took lead roles in his dance dramas featured at Sangeet Natak Academy events. She has been the lead artiste and co-director of several of its productions. Her memorable performance as a female deer in the dance-drama Keibul Lamjao and its film version Sangai won her many accolades. Several notable dancers of Manipur have worked under her guidance. Her performances are celebrated for their graceful movements, known as Lasya, as well as intricate hand gestures (mudras) and the art of devotional storytelling, all of which have enchanted audiences around the globe.

Survamukhi Devi was a member of a select group of six Manipuri cultural delegates who represented India in the Soviet Union, which marked a significant milestone as her first international performance. Her illustrious career has seen her perform in various countries. including China, Japan and South Korea, considerably enhancing the global recognition of Manipuri dance.

In addition her to performances. she has been a passionate teacher, guiding many students who carry on the tradition of Manipuri dance. Her contributions have played a crucial role in elevating the status of classical dance forms from the Northeastern region on a national scale.

The lifelong dedication of Thiyam Suryamukhi Devi to Manipuri dance has not only enriched the cultural tapestry of India but also inspired countless generations to cherish and preserve this classical art form.

## **DO YOU** KNOW

Chhau dance, also called Chhou Naach, is a semi classical Indian dance with martial and folk traditions.







Summer is here! And what could be more refreshing than a cup of ice cold sherbet or a spice-filled watery buttermilk that also guenches our thirst in the healthiest way possible?

A. Go ahead - try to find out the traditional summer drinks of India with the clues given below.

Chaas	Sol Kadhi	Lassi	Bel Sherbet	Panakam
Thandai	Aam Panna	Nimbu Paani	Jal Jeera	Sattu Pani

- 1. This is made using tangy raw mangoes and helps beat the heat.
- 2. Curd is the main ingredient in this drink.
- 3. This drink is associated with the festival of Holi and is a nutritious blend of milk, nuts and spices.
- 4. Kokum give this popular drink from Goa its pink color.
- 5. A sweet curd based drink popular in Punjab.
- 6. Versatile summer drink made using lemons.
- 7. Popular summer street drink flavoured with cumin and black salt.
- 8. Good for the gut, this drink is made using wood apples.
- 9. South Indian drink made with jaggery, pepper, ginger and cardamom.
- 10. Popular in Bihar, the main ingredient of this refreshing healthy drink is roasted black chickpea flour.

**B.** Given below are the some of the П popular summer drinks of India. Try to find out the main ingredient of the drink from the jumbled letters and match the drink with the state it is known for.

Jammu and Kashmir	Punjab	Nagaland	Kerala
Gujarat	Meghalaya	Maharashtra	Andhra Pradesh

1. Babri Beoul -



Clue: The main ingredient is a seed.

2. Shikanii



3. Varyali Sherbet





5. Sohiyong Sherbet



6. Piyush

Ν

H T Y G 0 U R

7. Sambaram

UC D R

8. Menthi Majjiga

G F Е U Е R Е Κ

#### Answers on page 66



### **Historical Wonder**



unwara Fort, also known as Kunwara Bhim Fort, is a historic fort located in the Morena district of Madhya Pradesh. Built during the early medieval period, the fort stands as a symbol of courage, strength and Indian architecture.

The fort is believed to have been constructed by King Bhimsen, a ruler of the Kachhwaha Dynasty. It got this name because it was never conquered by any enemy in history. Built on a hill in the Satpura range, its strong location made it very hard for anyone to defeat. The fort was used as a defensive structure, offering protection from enemy attacks and acting as a safe retreat for the ruling family.

### Architecture and materials used

Kunwara Fort is made mainly of sandstone and lime

## Kunwara Fort

mortar, common materials used in medieval Indian architecture. The fort is built on a hill, giving it a strong strategic advantage with a wide view of the surrounding land. The walls are thick and high, with large gateways and watchtowers. The design shows the skills of ancient Indian builders, who used simple tools to create strong and long-lasting structures.

Inside the fort, there are remains of old temples, water tanks and palaces. These give us a glimpse of the lifestyle of the rulers and the people who lived there. Even though many parts of the fort are in ruins today, the strength of the original construction still impresses visitors.

### Rulers and historical importance

The fort played an important role in the region's history. It was

under the rule of local Rajput kings and later came under the control of various dynasties, including the Mughals and Marathas. Each ruler added to the structure in some way, making it a mix of architectural styles.



- Kunwara Fort is said to be one of the few forts in India where no royal marriage ever took place.
- Kunwara Fort is also referred as the "Key of the Deccan." Whoever had control over this fort could also control movement between northern and southern India.









## Bereber Ceves India's oldest rock-cut marvel

The Barabar Caves are the oldest surviving rock-cut caves in India. Located in the Jehanabad district of Bihar, they date back to the Mauryan period (3<sup>rd</sup> century BCE) and are associated mainly with Emperor Ashoka and his successors.

From the Brahmi inscriptions, it is deciphered that Emperor Ashoka dedicated several of the caves to the **Ajivikas**, an ancient Indian religious sect that was contemporaneous with Buddhism and Jainism. There are historical records to prove that even Gautama Buddha had meditated in these caves.

#### Architecture

#### The caves typically consist of

- ➤ a main hall with arched doorways.
- a smaller circular or rectangular chamber, with smooth stonework.

#### The caves are renowned for

- highly polished interiors, often described as mirror like.
- advanced rock-cutting techniques of the Mauryan period.
- special echo effect feature; where any sound made here lasts for 3 minutes.

#### Popular caves in the group

#### **Lomas Rishi Cave**

The arch-like façade of the cave is an exact replica of the wood and thatch huts of monks. The cave provided a prototype for the larger Buddhist Chaitya halls and nfluenced the tradition of South Asian rock-cut architecture.

#### Sudama Cave

Sudama Cave is probably the first cave to be dug in the Barabar cave group. The entrance to the Sudama cave has a shallow porch, leading to a rectangular passageway. The inner walls of Sudama caves represent a technical feat.

#### Visvakarma Cave

Two rectangular rooms make up the Vishwakarma Cave. The room is entirely open to the outside, a sort of elongated porch. It is also known as Vishwamitra caves. This cave is accessible by the "Steps of Ashoka" carved into the cliff.

#### Karan Chaupar Cave

The inscription, located at the entrance to the cave, speaks of the Buddhist practice of retirement (*Vassavasa*) during the monsoons. The cave has a rock-cut bench at one end. It consists of a single rectangular room with polished surfaces. While the rest of the caves were dedicated to the Ajivikas, this cave was dedicated to the Buddhist monks.



### **Unsung Heroes**





## Rattan Devi and Attar Kaur

 $13^{\text{th}}$ April 1919. n Jallianwala Bagh in Amritsar became the site of a brutal massacre that shocked the nation. General Dyer commanded his troops to open fire on a peaceful gathering celebrating Baisakhi and protesting the repressive British laws. As bullets rained down. hundreds perished and many more were wounded. Records state that the troops fired till their ammunition was exhausted. In the aftermath, while the world condemned the horror, two women-Attar Kaur and Rattan Devi-stood tall in grief and quiet defiance.

Attar Kaur, pregnant with her third child, lost her husband Bhagmal Bhatia in the massacre.



That night, she entered the blood-soaked grounds and sat beside his lifeless body. Amidst strangers' suffering, she offered water, comfort and presence, even as her own world crumbled. The Jallianwala Bagh massacre brought considerable disgrace to the British in India and drew scathing criticism from Indian intellectuals. leaders as well as the English people back home. Thus, as a measure of damage-control, the British offered the victims' families an inducement to 'forget' the incident; they offered monetary compensation. The British offered Attar Kaur ₹50,000 as compensation-a large sum at

> the time—she refused it twice, saying she would not sell her husband's sacrifice.

Rattan Devi's ordeal was equally harrowing. When she heard the gunshots, she rushed to the Bagh and found her husband, Chhaju Bhagat, among the dead. Curfew and fear kept others away, so Rattan Devi spent the entire night alone, guarding his body from stray animals and comforting the wounded. She described the night as filled with cries of pain and the sight of innocent children among the dead. Only at dawn could she finally bring her husband home with the help of the neighbours. When the British offered her ₹25,000, she too refused, stating: "I will not take money from my husband's killers."

Their stories did not make headlines. They didn't lead protests or pick up arms. But through their courage, their sorrow and their refusal to be bought, they resisted in the most powerful way. Their pain became a protest. Their silence, a scream for justice.

Today, as we remember the martyrs of Jallianwala Bagh, let us also remember Attar Kaur and Rattan Devi—two women who showed that **resistance doesn't always need a slogan**. Sometimes, it simply takes a broken heart that refuses to forget. Jai Hind!!





### Answers of page 62



## Ш в.

Summer drinks	Main ingredient	Origin	
Babri Beoul	Basil	Jammu and Kashmir	
Shikanji	Lemon	Punjab	
Varyali Sherbet	Fennel	Gujarat	
Zutho	Rice	Nagaland	
Sohiyong Sherbet	Blackberry (Meghalaya Cherry)	Meghalaya	
Piyush	Yoghurt	Maharashtra	
Sambaram	Curd	Kerala	
Menthi Majjiga	Fenugreek	Andhra Pradesh	



## World Homeopathy Day 10<sup>th</sup> April

"Homeopathy for a Healthier Future: Natural, safe and effective."



# International Day of Ropests -

Every year a new theme is chosen by the Collaborative Partnership on Forests. The theme for this year is **"Forests and Food,"** which emphasises the deep connection between forests and global food security.