

PRAJYA

MONTHLY NEWS MAGAZINE FOR CHILDREN

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Hornbill Festival

Celebrating Lachit Diwas

24th November

Remembering the
valour, patriotism
and devotion of
the legendary hero
Ahom General
Lachit Borphukan
on his birth
anniversary...





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व्यायामात् लभते स्वास्थ्यं दीर्घायुष्यं बलं सुखं । आरोग्यं परमं भाग्यं स्वास्थ्यं सर्वार्थसाधनम् ॥

(Translation: Exercise results in good health, long life, strength and happiness. Good health is the greatest blessing. Health is the means of everything, the greatest wealth.)

Health is a state of physical, mental, social and spiritual well-being from an individual perspective. When applied to a nation, we can extrapolate it to many other factors. Every nation has to focus on the good health of its citizens in order to develop. Government of India's initiative **National Institute of One Health** is one such. Improving the health infrastructure and research facilities across the nation is a good move. Widening the scope to cover not only humans but also wildlife and the environment is of strategic significance.

Archaeological Survey of India Bangalore Circle's efforts to document the health of heritage monuments is exemplary. There can be no two opinions on maintaining the health of the invaluable rich historical and cultural heritage of our country. It helps in not just restoring the glorious past but also generating interest among people and revenue in the future.

Assets lying idle is of use to none. GOI's National Monetisation Pipeline is an ingenious enterprise. Monetising dormant assets contributes to the economic health of the nation. Linking future budgetary support to ministries to their monetization capability will ensure greater accountability in PSUs.

Read, reflect and revert with your thoughts and feelings.

We look forward to your support and suggestions.

Editorial Team



- 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:

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

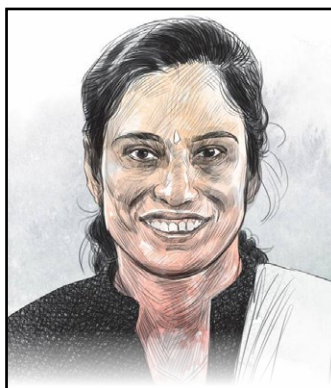
<http://bit.ly/Prajya>

Happy Reading !

Watch out for the Monthly Prajya Quiz online

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

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NASA's Artemis 1 Mission

**Orion
travelled
nearly a
thousand
miles
farther than
where the
International
Space
Station orbits
Earth.**

On 11th December 2022, a record-breaking flight test culminated in a splashdown in the Pacific Ocean, as NASA's Orion spacecraft returned safely to Earth after a trip of more than 1.4 million miles.

After a lift off from the Kennedy Space Center in Florida, NASA's Space Launch System Rocket (SLS) No. 16 - part of the Artemis I mission - stress-tested Orion in the harshest conditions of vacuum for little more than 25 days, in preparation of flying astronauts on the upcoming Artemis II mission.

Orion came within 80 miles of the lunar surface, after performing two lunar flybys. It travelled nearly a thousand miles farther than where

the International Space Station orbits Earth; almost 270,000 miles from the planet. Orion also stayed in space without docking far longer than any prior spacecraft designed to carry humans.

Prior to re-entry, the service module - which was designed by the ESA (European Space Agency) and provides the propulsion - was separated from the crew module.

While entering Earth's atmosphere, Orion endured temperatures of nearly 5,000°F and slowed down from about 25,000 mph to 20 mph to deploy its parachutes.

The recovery team on the USS Portland offloaded the spacecraft onto the shore, where a truck





ARTEMIS I

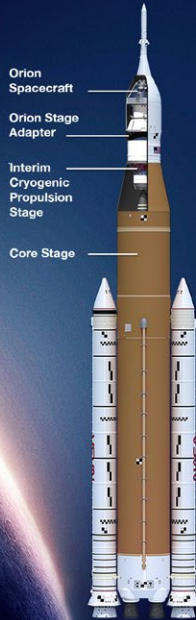
SMALL SATELLITES + BIG SCIENCE



Ten CubeSats, or small satellites, in the Orion stage adapter (OSA) will ride along to deep space. These high-risk, high-reward CubeSats will be deployed at strategic times based on mission requirements.

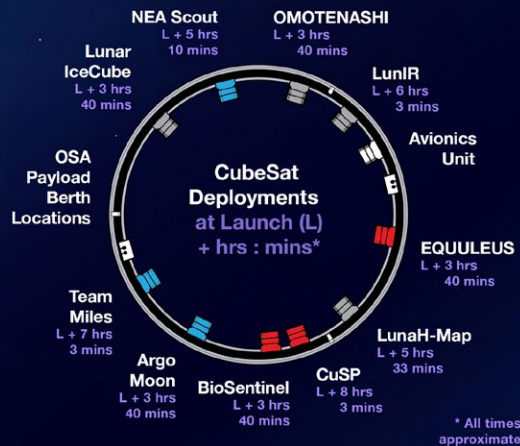
Mission Key

- Lunar Science
- Technology Demonstration
- Radiation



CubeSats

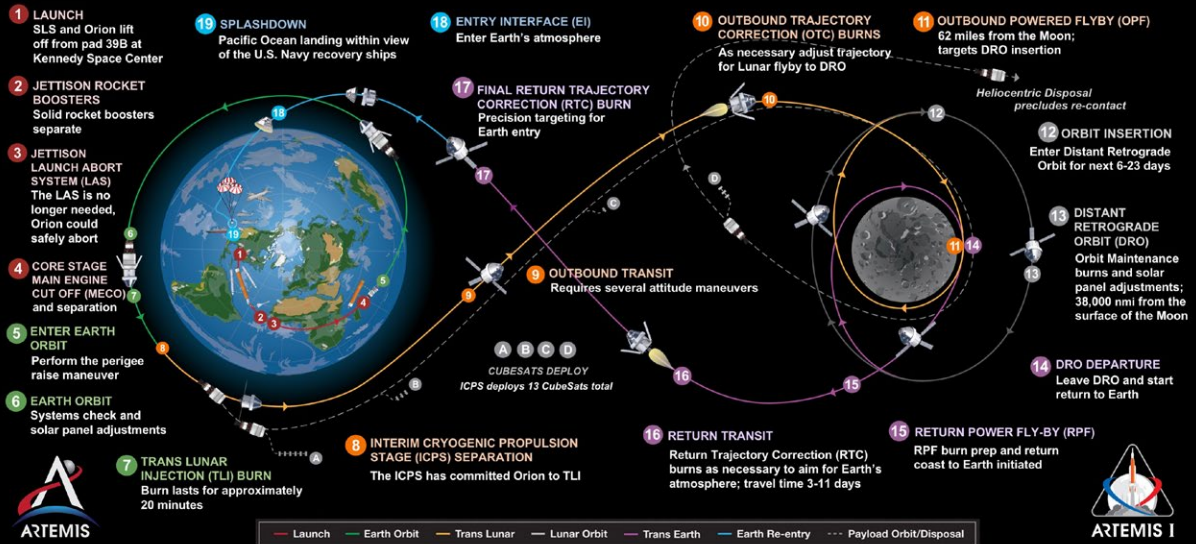
- OMOTENASHI
- Lunar IceCube
- EQUULEUS
- ArgoMoon
- BioSentinel
- NEA Scout
- LunaH-Map
- LunIR
- Team Miles
- CuSP



www.nasa.gov/sls

ARTEMIS I

The first uncrewed, integrated flight test of NASA's Orion spacecraft and Space Launch System rocket, launching from a modernized Kennedy spaceport



Total distance traveled: 1.3 million miles – Mission duration: 26-42 days – Re-entry speed: 24,500 mph (Mach 32) – 13 CubeSats deployed

transferred it back to Kennedy. Once there, NASA teams unloaded several payloads from the Orion. For the next several months, the capsule and the heat shield will

undergo several tests and analyses. “This begins our path to a regular cadence of missions and a sustained human presence at the moon for scientific discovery and

to prepare for human missions to Mars,” said Jim Free, NASA associate administrator for the Exploration Systems Development Mission Directorate.





Kum Sunita D Behera

ASIAN CUP TABLE TENNIS

MANIKA BATRA CREATES HISTORY!

On 19th November 2022, Manika Batra made history by becoming the first Indian woman table tennis player to win a medal at the Asian Cup held in Bangkok, Thailand. She clinched the bronze medal after defeating World no. 6 Hina Hayata of Japan in the women's singles category.

Her win also makes it India's third medal at the Asian Cup – the first two being silver in 1997 and bronze in 2000, both won by Chetan Baboor.

Hailing from Delhi, Manika Batra started playing table tennis when she was four. She participated in and won various district and state championships. At age 15, she won her first national medal at the National Table Tennis Championships and made her international debut in the same year.

2014 - Commonwealth Games debut.

2016 - South Asian Games - 3 gold medals

2018 - bagged 2 gold among four medals.

She has also appeared twice at the Olympics – Rio in 2016 and Tokyo in 2021. She is yet to open her medal tally.

Manika Batra is a recipient of the Rajiv Gandhi Khel Ratna Award and Arjuna Award.





FIFA WORLD CUP 2022

The FIFA World Cup is an international football competition contested by men's national teams of the members of the Fédération Internationale de Football Association (FIFA).

On the night of 18th December, 2022 at Lusail Stadium in Qatar, one name reverberated through the crowds – Argentina. After 36 long years, the FIFA World Cup found its way back to the South American country, following a well-fought match that left fans on the edge of their seats. This nail-biting game of football served as a microcosm of what the FIFA world cup represents to footballers and fans around the world.

The FIFA World Cup is an international football competition contested by men's national teams of the members of the Fédération Internationale de Football Association (FIFA), the sport's global governing body. The tournament has been held every four years since 1930.

This is the first time this tournament has been held in the Middle East. Despite many controversies about the host nation, because of their treatment of migrant workers, women and members of the LGBT community, the tournament went on as planned. To ensure that the effects of the heat would not hinder the games, they were scheduled to happen in November-December, as opposed to the usual months of June-July.

32 teams played across 8 newly constructed venues, over 29 days. A total of 63 matches were played to determine the finalists and the 64th match of the tournament between the defending champions France, and Argentina was watched by more than 1.5 billion people across the world.





Argentina secured their third title in the history of the World Cup, making them the reigning champions. The team captain Lionel Messi was voted the tournament's best player and secured the Golden Ball, an award presented at the end of every tournament to a player who has distinguished himself across all aspects of the game.

The Golden Glove Award, given to the best goal keeper, was won by Emiliano Martínez (Argentina) for his incredible

goalkeeping across the entire tournament. Enzo Fernández from Argentina also won the Young Player Award, awarded to the tournament's best young player.

The highlight of the match however was French Player Kylian Mbappé. The French player put a dent in Argentina's domination in the first half of the match by scoring two consecutive goals in two minutes. In the extra time, Argentina took the lead again when Messi scored, but Mbappé drew the score to a level 3-3. His incredible prowess on the field earned him the historic feat of becoming the second player in the history of the world cup to score a hat-trick in the final, and also the coveted Golden Boot, a trophy awarded to the player who scores the most goals in the tournament.

It was a night of historic wins and Argentinian Captain Lionel Messi, who announced his retirement from the world-cup circuit, certified his status as one of the football's Greatest-Of-All-Time.





NEPAL elections **PRACHANDA** becomes the Prime Minister

Deuba and Prachanda had earlier reached an understanding to lead the new government on a rotational basis.

The present political situation in Nepal is an apt example to understand the drawbacks and instability of a coalition government. Until recently, there were fair chances for Sher Bahadur Deuba to be the Prime Minister of Nepal for a few more years but in a dramatic turn of events on 25th December, CPN-Maoist Centre Chairman Pushpa Kamal Dahal "Prachanda" withdrew his support from the ruling alliance led by Deuba of Nepali Congress. He joined the Left Front Alliance led by the former PM K P Sharma Oli and has become the 38th prime minister of Nepal.

He took the oath of office on 26th December 2022 administered

by Bidhya Devi Bhandari, the President of Nepal. He served as PM from 2008 to 2009 and again from 2016 to 2017, and will step down in 2025, making way for the UML to take over the office.

Why Prachanda withdrew support from Nepali Congress-led Alliance:

- ▶ Deuba and Prachanda had earlier reached an understanding to lead the new government on a rotational basis.

- ▶ But Deuba rejected Prachanda's bid to become the PM in the first round.

- ▶ Nepali Congress demanded both the key posts of President and Prime Minister, which Prachanda had rejected.



DO YOU KNOW ?

Hung Parliament: A parliament in which no political party has enough seats to secure an overall majority.



Prachanda will have to prove his majority from the lower house within 30 days as per Article 76 (4) of the Constitution.



A ray of hope for Prachanda

- ▶ In the meanwhile, opposition CPN-UML (The Communist Party of Nepal (Unified Marxist–Leninist) and other smaller parties extended their support to CPN-Maoist Centre chairman Prachanda.
- ▶ There has been an understanding between Prachanda and Oli who are pro-China to lead the government on a rotation basis and Oli agreed to make Prachanda PM at the first chance as per his demand.
- ▶ He also gets to have his own candidates for the head of the state and the Speaker of the House of Representatives and

the chief ministers of at least four provinces.

Share of seats:

Nepali Congress	- 89
CPN-UML	- 78
CPN-MC	- 32
Others	- 76

No party in the 275-member House of Representatives has 138 seats required to form a government.

What's next?

- ▶ Prachanda will have to prove his majority from the lower house within 30 days as per Article 76 (4) of the Constitution.
- ▶ Oli will play a key role in steering the government.





India's PURNIMA DEVI BARMAN wins UN's highest environmental award



On 22nd November 2022, United Nations Environment Programme (UNEP) conferred the highest environmental honour to Purnima Devi Barman in the Entrepreneurial Vision category. She is one of the five **'Champions of the Earth'** among individuals and organisations whose actions have a **“transformative impact”** on nature.

The Assam-based wildlife biologist works towards protecting storks, specifically Greater Adjutant Stork. This large pre-historic-looking bird is a metre-and-a-half in height, and as of 2022, there are less than 1500 predominantly alive in Assam. It is the second rarest stork species in the world.

The stork is locally called “Hargila”, meaning “swallower of bones”. People for a long time have been believing it to be a “sign of ill omen and carrier of diseases,” thus felling trees where the birds’ nests are present.

Purnima Devi is named **“Agent of Hargila”** and her all-women team is called **“Hargila Army.”** She and her team are known to care for the species as they would for their own children. They together work towards the conservation of the Greater Adjutant Stork by organising cultural and informative events where the themes of Hargila are ever-present.

The women create and sell textiles, literature and iconography in the art works where the storks' images are represented, thus raising awareness and creating a livelihood for themselves.



HAWAII'S MAUNA LOA erupts

Sub-aerial: Near earth's surface.

Shield volcano is formed by the steady accumulation of broad sheets of lava. Named for its resemblance to a warrior's shield lying on the ground.

Non-explosive volcanic eruptions occur when magma is thin and flows easily. Lava flows out of the volcano, rather than blocking the vent, with little or no gas.

Hazard tourism : Tourist activities that occur near natural or technological hazard sites or disaster-impacted areas.

Mauna Loa is one of five volcanoes that form the island in the U.S. state of Hawaii in the Pacific Ocean. The largest sub-aerial volcano is an active shield volcano with a peak of about 125 feet. The lava eruptions from Mauna Loa are non-explosive.

Mauna Loa's recent eruption: Began on 27th November 2022 and ended on 13th December. It was the first eruption since 1984. Mauna Loa has been monitored intensively by the Hawaiian Volcano Observatory since 1912.

The magma of Mauna Loa comes from a series of magma chambers found between about 2 and 40 km below the surface.

The origin is the Hawaiian hotspot at a depth of more than 1,000 kilometres. Some scientists even state that the magma comes from a depth of 2,900 km where the mantle meets Earth's core. The slow drift of the Pacific Plate will eventually carry Mauna Loa away from the hotspot within 500,000 to one million years from now.

The Hawaiian volcanic eruptions attract many tourists including scientists, nature photographers and the public, from all over the world.



Net energy gain in **NUCLEAR FUSION** **REACTION**



This huge engineering challenge involves superconducting magnets that will keep the super-heated plasma in place enabling reaction.

Nuclear fusion is in the news again for all good reasons. For long it has been the holy grail as an energy source. The National Ignition Facility (NIF) at Lawrence Livermore National laboratory in California reported a fusion reaction yielding 153% as much energy as was put into it to trigger the reaction.

Nuclear Fusion is a reaction in which two atomic nuclei fuse, combine to form one or more different atomic nuclei, releasing huge amounts of energy in the process.

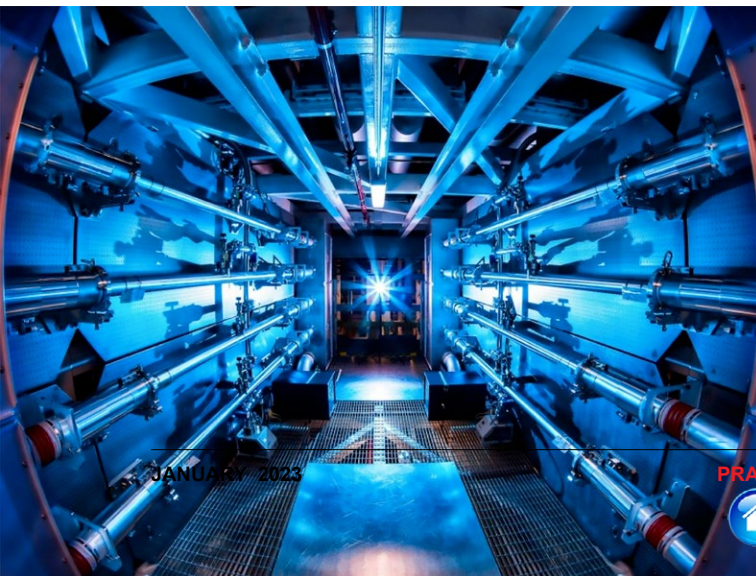
Creating sun on earth: nuclear fusion is the process that powers energy release from the sun which makes life possible on earth. The mass and gravity of our sun makes nuclear fusion possible. **To fuse two light weight atomic nuclei here, the isotopes of hydrogen**

need to be heated to ten times the temperature prevalent in sun's core. This huge engineering challenge involves superconducting magnets that will keep the super-heated plasma in place enabling reaction.

Data from NIF: NIF reported a net gain of 0.72 in 2021, which is the ratio of energy output to energy input, as against 153% this year.

Burning Plasma: For a self-sustaining nuclear fusion reaction the energy released by the initial reaction needs to set the stage for more reactions. This is called "**Burning Plasma**".

What it takes to run a commercial scale fusion power plant: Scientists opine that for this to happen a reactor has to yield a net gain of 100. Even if this happens in a decade or two the heat produced needs to be converted to electricity which will involve a energy loss of 50% or more. Nuclear fusion is exciting but no timelines can be fixed. But improvements in reactor design, funding, newer materials might set the stage for next generation reactors which might overcome these challenges.





Indian Tea exports Skyrocket

In 2019, India exported almost 250 million kg of tea.

India is the second-largest producer and the third-largest exporter of tea in the world. In 2019, India exported almost 250 million kg of tea. Exports constituted 91% black tea, 2% green tea, and 7% tea preparations like instant tea.

India witnessed a jump in exports of tea from 122.18 million kg (January- August 2021) to 140.28 million kg for the same period in 2022. Besides, it accounted for ₹ 3,837.28 crore as revenue in India's tea exports this year as compared to ₹ 3,353.35 crore last year.



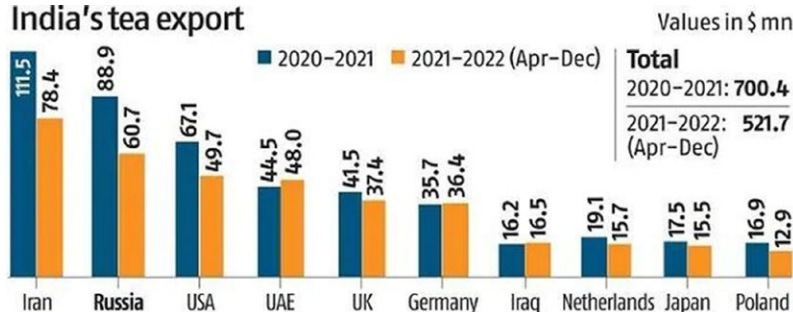
Largest tea exporters in India

Assam is the largest tea-growing region globally and also the largest exporter of tea in India with 40% of the country's overall tea exports. Other top tea exporting states include West Bengal (famous for its Darjeeling tea) Tamil Nadu and Kerala.

India's Top Tea Importing Countries/Partners

Iran is the largest export destination for Indian tea by a margin of 26%. Tea export from India to Russia stood second at US\$ 106 million in 2019. Other tea- importing- countries from India include the US, UK, and UAE.

India's tea export



Source: Ministry of Commerce

Commonwealth of Independent States [CIS] remains the highest importer of Indian tea with 30.56 million kg in the first eight months of 2022.

The CIS countries include- Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine.





New developments in the *Northeast*

PM Modi inaugurated the Donyi Polo Airport at Itanagar, Arunachal Pradesh on 19th November 2022.

Arunachal Pradesh Greenfield Airport

As part of the government's aim to increase connectivity to the north-eastern parts of the country, PM Modi inaugurated the Donyi Polo Airport at Itanagar, Arunachal Pradesh on 19th November 2022.

Developed on 694 acres of land, 25 kilometres from Itanagar, the airport uses green fields – underdeveloped lands, to serve as its 2-kilometre-long runway. Capable of handling more than 300

passengers during peak hours, the airport is specifically designed to be operational under the weather conditions of Arunachal Pradesh.

PM said, "With the development of the new airport infrastructure, huge opportunities in the field of cargo services will be created." Chief Minister Pema

Khandu said, "Today is a historic day for the entire state. This airport will not only enhance connectivity but also provide momentum to the economic development of this region."

Kameng Hydro Power Project

Another important developmental project that was inaugurated in the North-east is the Kameng Hydro Power Station. Developed at a cost of more than ₹ 8,450 crore in West Kameng district of Arunachal Pradesh, the station uses the tributaries of Kameng river, the Bichom and Tenga to generate 600 Megawatt of hydroelectric power.

70 international engineers collaborated alongside Indian scientists in the construction of the dam using state-of-the-art methods, to ensure that it would be stable despite the precarious terrain.

This surplus power will add to the national power grid and supplement power needs in the north eastern parts of India.





India's first **Centre of Excellence** for **Green Port and Shipping**



India intends to increase the share of renewable energy to 60% of the total power demand.

A green port invests and encourages in building environment-friendly and sustainable operations in all formats of the ports and maritime industry. The Green Port Initiative's vision is to measure and achieve reductions of greenhouse gas emissions, air and marine pollution and waste, while actively engaging with stakeholders. Union Minister of Ports, Shipping & Waterways and Ayush, Sarbananda Sonowal announced India's first National Centre of Excellence for Green Port & Shipping.

As per the vision of our Prime Minister, this movement is going to be an India-led global movement for collective action to protect and preserve environment. India intends to increase the share of renewable energy to 60% of the total power demand of each of its major ports from a present share of less than 10%.

This will be through solar and wind-generated power. India has been selected as the first country under the IMO Green Voyage 2050 project to conduct a pilot project related to Green Shipping.



Assets worth over ₹33,000 cr monetized

The Ministry of Coal has so far achieved a monetisation value of ₹ 17,000 crore.

In August 2021 Government of India had announced the ₹ 6 lakh crore-National Monetisation Pipeline (NMP) over four years to unlock value in infrastructure assets across sectors. Niti Aayog in consultation with the various infrastructure ministries had prepared the report on NMP.

In 2021-22, the Government had surpassed the programme's first-year target of ₹ 88,000 crore by completing transactions worth ₹ 1 lakh crore. The NMP target for the current year is ₹ 1,62,422 crore.

The Ministry of Coal has so far achieved a monetisation value of ₹ 17,000 crore, against an overall

monetisation target of ₹ 30,000 crore in 2022-23 and the Ministry of Road, Transport and Highways has achieved a monetisation of ₹ 4,100 crore against the overall target of ₹ 32,855 crore in the current fiscal.

Both these ministries are likely to achieve their 2022-23 NMP target.

However, based on current estimates, the Ministry of Power, the Ministry of Railways, the Ministry of Civil Aviation and the Ministry of Oil and Gas are likely to miss their targets.

As collections from NMP is used to reach our fiscal deficit target, sectors with challenges have been



ASSETS FOR MONETISATION



Monetisation is the conversion of an asset, debt, etc., into cash or a form easily converted into cash.

asked for expediting the rollout of transactions. Six state-specific workshops by Niti Aayog have been planned.

Ministries have also been asked to achieve their targets by identifying additional asset classes.

Gujarat, Maharashtra, Karnataka, Uttar Pradesh, Madhya Pradesh and Odisha have been identified as focus states.

In these states, state highways

and express ways, transmission networks, urban terminals and state warehouses have been identified as potential assets.

The Government is also considering linking future budgetary support to ministries to monetization achieved by them.

With all these plans, likely realisation from asset monetisation under NMP in the current fiscal year is now estimated at ₹ 1,24,179 crore.



Framework to curb fake reviews on e-commerce sites



E-commerce platforms allow users to publish reviews on products they have purchased.

The Bureau of Indian Standards (BIS), responsible for standardisation of goods and services provided across the nation, launched a new standard on 21st November to curb fake reviews on e-commerce websites, such as Flipkart and Amazon. Titled the Indian Standard (IS) 19000:2022 ‘Online Consumer Reviews — Principles and Requirements for their Collection, Moderation and Publication’, this new standard will ensure that reviews on online platforms are thoroughly vetted, before they are published.

During the launch, Consumer Affairs Secretary Rohit Kumar Singh stated that the aim of this standard is to encourage “**integrity, accuracy, privacy, security, transparency, accessibility and responsiveness.**”

E-commerce platforms allow users to publish reviews on products they have purchased and based on those reviews recommend goods and services to new customers. This process however has been hijacked

through the use of fake reviews that artificially boost a product’s visibility.

The standard outlines responsibilities that organizations have to take on in checking and curbing fake reviews. It also provides various methods of verification to ensure that a review posted on a product page is by an actual person, not an automated bot. These include verification through SMS, email, captcha system and so on.

The standard also makes moderation of these reviews an important step. Automated and manual moderation tools have been suggested to ensure that fake reviews are identified and are taken down as soon as possible.

While this standard has been made voluntary, it is expected to be widely adopted as it will help not only customers, but also e-commerce organizations who depend on legitimate reviews to promote their products.





Tenzing Norgay National Adventure Awards 2021

The award comprises a bronze statuette of Tenzing Norgay along with a cash prize of ₹15 lakh.

The Tenzing Norgay National Adventure Award, formerly known as National Adventure Awards, is the highest adventure sports award. The award is named after Tenzing Norgay, a Nepali-Indian Sherpa mountaineer and one of the first two individuals to reach the summit of Mount Everest along with Edmund Hillary in 1953. It is awarded annually by the Ministry of Youth Affairs and Sports.

The recipients are honoured for their "outstanding achievement in the field of adventure activities on land, sea and air". The life time achievement is awarded to

individuals who have demonstrated excellence in and devoted themselves to the promotion of adventure sports. As of 2021, the award comprises a bronze statuette of Tenzing Norgay along with a cash prize of ₹15 lakh.

The number may increase in a particular year for appropriate reasons and after approval. A five-member committee evaluates the achievements of a candidate in a particular category of adventure, taking into consideration their last three years of performance for the first three categories.

The awardees for 2021:

Name	Category	Discipline
Naina Dhakad	Land Adventure	Mountaineering
Shubham Dhananjay Vanmali	Water Adventure	Open water swimming
Group Captain Kunwar Bhawani Singh Samyal	Lifetime Achievement	

In 2017, six awards were given to the members of Navika Sagar Parikrama, an all-woman sailing team for the circumnavigation of the globe. Chandraprabha Aitwal is the only double recipient of the award in 1994 for land adventure and in 2009 for lifetime achievement.





200th consecutive successful launch of RH200 SOUNDING ROCKET

A sounding rocket, sometimes known as a research rocket or suborbital rocket, is an instrument-carrying rocket capable of taking measurements and performing scientific experiments during its sub-orbital flight. It is used to launch instruments from 48 to 145 km altitude from Earth's surface.

The first sounding rocket launched in India was the American Nike-Apache on 21st November 1963. Following this, two-stage rockets imported from Russia (M-100) and France (Centaure) were launched.

The first indigenously developed sounding rocket Rohini RH-75 was launched by ISRO in 1967. Since then, these rockets have been launched from both the TERLS and the Satish Dhawan Space Centre, Sriharikota. In 1975, all of ISRO's sounding rocket activities came under the purview

of the Rohini Sounding Rocket (RSR) Programme.

Presently ISRO has conducted its 200th consecutive successful launch of RH200 sounding rocket from the shores of **Thumba Equatorial Rocket Launching Station (TERLS)**, Thiruvananthapuram.

ISRO stated that Indian-sounding rockets are used as privileged tools for the scientific community for carrying out experiments on meteorology, astronomy and similar branches of space physics. Campaigns such as Equatorial Electro Jet, Leonid Meteor Shower, Indian Middle Atmosphere Programme, Monsoon Experiment, Middle Atmosphere Dynamics and Sooryagrahan-2010 have been conducted using the sounding rocket platform for scientific exploration of Earth's atmosphere.



Arittapatti village

TN's first biodiversity heritage site

The village is hailed to have been inhabited by people for more than 2,000 years, as concluded from a reading of the urns recovered from the Kottaimedu area.

Biodiversity heritage sites are well-defined areas that are unique, ecologically fragile ecosystems with high diversity of wild and domesticated species, presence of rare and threatened species and keystone species.

The Tamil Nadu Government issued a notification declaring Arittapatti in Madurai district, a Biodiversity Heritage Site (BHS). It is Tamil Nadu's first and India's 35th Biodiversity Heritage Site.

With 72 lakes, 200 natural spring pools and three check dams supported by the seven hillocks surrounding it, the village is nothing short of a paradise on earth. It is also nestled between Alagarmalai and Perumal forest reserves, making it a must-visit destination for

birdwatchers and wildlife lovers. You can spot up to 250 species of birds, including laggar falcon, shaheen falcon and Bonelli's eagle and exotic animals like the Indian pangolin and slender loris, among others.

It is believed that one of the lakes, Anaikodan, was built in the 16th century during the Pandyas' reign. The village is hailed to have been inhabited by people for more than 2,000 years, as concluded from a reading of the urns recovered from the Kottaimedu area.

The rock-cut Shiva temple, believed to be constructed in the 8th century, also presents a fascinating historical fact. It is one of the two places in Tamil Nadu where the Laguleesa's statue—the revered Shaivite revivalist and founder of the Pashupata cult—was found.

Of the numerous Jain beds found in Madurai, a prominent one—with 2,100-year-old Brahmi inscriptions and 1,000-year-old Vattezhutu inscription—is located at Kalinjimalai in this village.

The notification seeks to shed light on its ecological and historical treasures and even strengthen the local community's participation in preservation and conservation initiatives.





FIRSTAP

India's first sticker-based Debit Card



*One can simply tap the sticker on a
point-of-sale terminal.*

NPCI and IDFC First Bank
Launched

FIRSTAP
the country's first
Sticker-based
debit card



IDFC First Bank has launched India's first sticker-based Debit Card- FIRSTAP, in association with the National Payments Corporation of India (NPCI). One can simply tap the sticker on a point-of-sale terminal that supports Near Field Communication (NFC) to facilitate a transaction. The touch-free way to pay enables payments in seconds for transactions up to ₹5,000 without a PIN, and those beyond that, with a tap and PIN.

The sticker-based debit card is one third the size of a regular debit card, which makes it easy to apply on a wide range of devices and objects. Customers can affix these on any surface of their choice, such as cell phones, identity cards, wallets, tabs, air pod cases, etc. This makes it convenient to use - adapting to wearable devices such as watches and rings, thus removing the need to carry a debit card.



Near Field
Communication

NFC is a short-range wireless connectivity technology that lets NFC-enabled devices communicate with each other. NFC transmits data through electromagnetic radio fields to enable them. To work, both devices must contain NFC chips and they must be either physically touching or within a few centimeters of each other for data transfer to occur.





Supreme Court launches Online RTI Portal

“The truth about action must be known and the truth of inaction also must be known; even so, the truth about prohibited action must be known. For mysterious are the ways of action.”

-Bhagavad Gita, Chapter IV, Verse 17



**Chief Justice of India
Justice DY Chandrachud**

**Indian democracy is
thriving and has become
a model for other
nations.**

Well informed, vigilant, alert and responsive citizens are the backbone of a democratic system. Right to information empowers the citizens to monitor the functioning of government departments and ensures transparency in administration. United Nations declared 28 September as the ‘International Day for Universal Access to Information’.

India, the largest democratic country in the world, passed Right to Information Act, 2005 with the motive of ensuring effective, efficient and corruption free governance.

Chief Justice of India Justice DY Chandrachud launched an



online RTI portal for the Supreme Court of India on 24th November 2022.

It will be convenient for people to access information about the Supreme Court. Citizens can use it to file application, first appeal and pay fees under RTI, 2005.

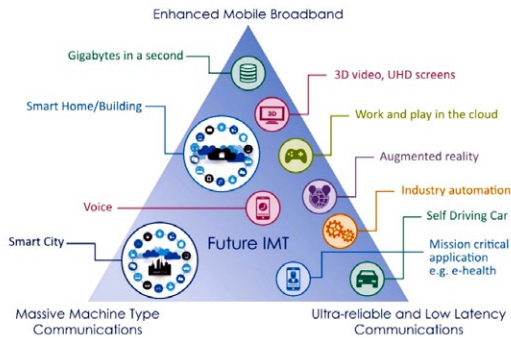
Indian democracy is thriving and has become a model for other nations. As proud citizens of this great land, we must exercise our duties and enjoy our rights.





services in all districts in Gujarat

5G usage scenarios







India's digital transformation and connectivity is scaling newer heights with 5G rollout.

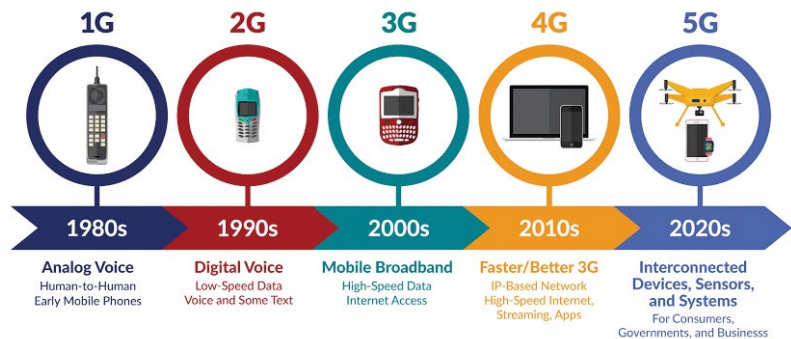
Gujarat has become the first state in India to get the "True 5G" services offered by Reliance Jio in each of its 33 district headquarters.

In May 2022, Union IT minister Ashwini Vaishnaw made the country's first 5G call at IIT Madras.

The call was placed over a trial network completely indigenous.

To prevent any security vulnerabilities of 4G and 5G networks, it is vital for India to develop its own 5G hardware.

	3G	4G	5G
 Deployment	2004-05	2006-10	2020
 Bandwidth	2mbps	200mbps	>1gbps
 Latency	100-500 milliseconds	20-30 milliseconds	<10 milliseconds
 Average Speed	144 kbps	25 mbps	200-400 mbps



Latency is gap time, or transmission time for a packet of data. The quicker the data is transmitted to us, the quicker we can respond.

Mbps – Megabytes per second (1 million bits per second).

Gbps – Gigabytes per second (1 billion bits per second).

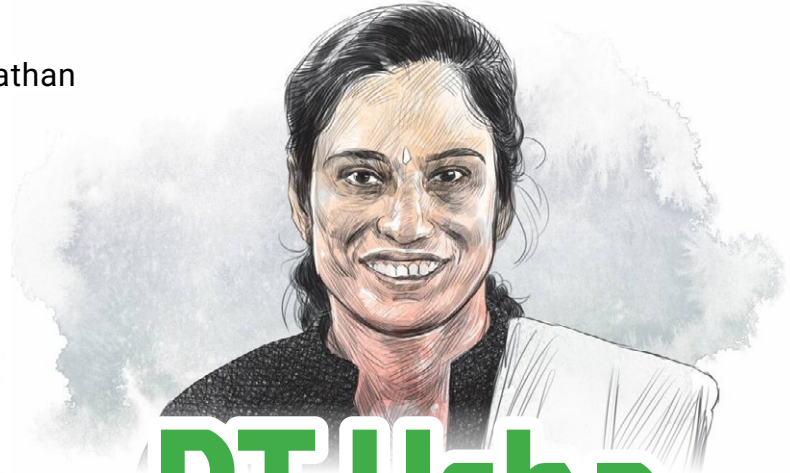
What is 5G?

5G is the 5th Generation of wireless technology. It enables a new kind of network designed to connect virtually everyone and everything together including machines, objects and devices.

5G features include - Fast mobile broadband network, higher performance, data speed, reliability and improved efficiency to empower new user experiences and revolutionize new industries.

5G benefits include powered - initiatives across the country in sectors like Education, Healthcare, Agriculture, Internet of Things (IoT) etc.





PT Usha

First woman President of IOA

DO YOU KNOW ?

Indian Olympic Association headquartered in New Delhi was founded in 1927.

From 1983-89, Usha won 13 gold medals at ATF Meets (now called Asian Championship).

PT Usha was conferred with the Padma Shri (fourth-highest civilian award of the Republic of India) and Arjuna Award (second-highest sporting honour of India).

Ushering in a new era in the country's sports administration, legendary athlete PT Usha was, on 10th December elected as the first woman president of Indian Olympic Association (IOA).

Fondly known as the 'Payyoli Express', 'Queen of Indian track and field' and 'Sprint Queen', Usha became the first Olympian and first international medallist to head the IOA in its 95-year-old history.

Usha is the also the first sports person to have represented the country and also become IOA chief since Maharaja Yadavindra Singh, who played a Test match in 1934. Singh was the third IOA president who held office from 1938 to 1960.

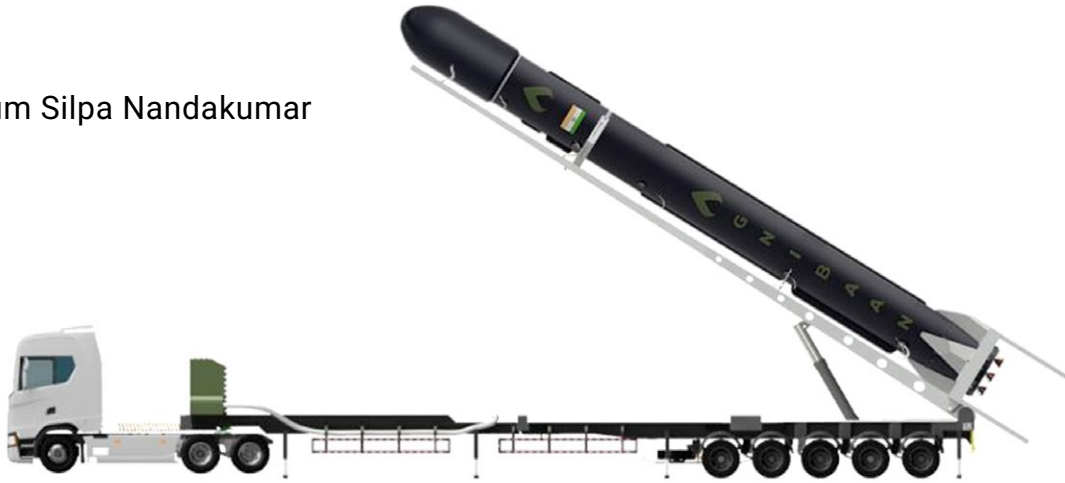
The elections were held under the supervision of Supreme Court-appointed retired SC judge L Nageswara Rao. A multiple Asian Games gold medallist and fourth place finisher in the 1984 Los

Angeles Olympics 400m hurdles final, the 58-year-old Usha was declared elected unopposed for the top post in the polls.

Other elected office bearers:

- ▶ **Ajay Patel** of National Rifle Association of India (NRAI)-unopposed as Senior Vice-President.
- ▶ Olympic medalist shooter **Gagan Narang** and Rowing Federation of India President **Rajlaxmi Singh Deo** - unopposed as Vice Presidents.
- ▶ Indian Weightlifting Federation (IWF) President **Sahdev Yadav**- Treasurer.
- ▶ All India Football Federation (AIFF) president and former goalkeeper **Kalyan Chaubey** - unopposed as the Joint Secretary (male).
- ▶ **Alaknanda Ashok** of Badminton Association of India (BAI) - Joint Secretary (female).





India's first private rocket launchpad

If travelling to space is in your wish list, chances are it will come true sooner than you thought! A Chennai-based space tech startup, **Agnikul Cosmos**, unveiled India's first private space vehicle launchpad at the Satish Dhawan Space Centre (SDSC) in Sriharikota. It was executed with the support of the Indian Space Research Organisation (ISRO) and IN-SPACE (Indian National Space Promotion and Authorization Center).



The facility was inaugurated by ISRO chairman S.Somanath, accompanied by the Satish Dhawan Space Centre Director and senior officials of ISRO and Agnikul. It has two parts - the Agnikul launchpad and the Agnikul mission control centre and is designed to accommodate and support liquid stage-controlled launches.



Agnikul Cosmos aims to launch its Agnibaan rocket from here. As a two-stage launch vehicle, it is capable of taking payloads of up to 100 kg to a low-earth orbit around 700 km from the surface of the earth. Interestingly, it will be powered by the company's 3D-printed Agnilet engines, which is the world's first single-piece 3-D printed engine fully designed and manufactured in India.

The truly remarkable milestone in the space history of our country will happen very soon with the first mission which will be a controlled and guided vertical launch mission.





DigiYatra Launched



Ministry of Civil Aviation has launched the DigiYatra facility, a biometric boarding system for airports. Launched on 1st December 2022, the facility is functional in three airports in India: Bangalore, Delhi and Varanasi. It will also be launched in Hyderabad, Kolkata, Pune and Vijayawada by March 2023.

DigiYatra is a Facial Recognition Technology (FRT) based system that aims to process passengers without any papers or contact in the airport. This can be used at various checkpoints in the airport such as the airport entry point, security check and while boarding the aircraft. This can also be used for self-bag drop and check-in.

The app is available for both android and iOS. To use the facility of DigiYatra, a one-time registration is required using Aadhaar-based validation and a self-image capture.

It will store some of the basic details of the passenger such as name, email address, mobile number, and the details of an identification document (Aadhaar, driving license, Voter ID, etc.). This will be stored in a secure wallet on the smart phones.

DigiYatra ID must be shared with the airlines while booking tickets, which will allow them to share this ID and passenger data with the respective airport. **It is supported by Air India, Vistara and IndiGo at present.**

While this initiative aims to reduce congestion in highly crowded airports, there are some concerns regarding the privacy and personal data security. The lack of a well-established privacy policy might expose the users to a data breach.






Introducing **DIGIYATRA**

EXPERIENCE THE FUTURE OF AIR TRAVEL

DIGIYATRA BENEFITS

- Face recognition technology
- Dedicated gates
- Faster movement to boarding gates
- Contactless

Currently operational at Departure Gate 2 Terminal 3





Andaman & Nicobar

21 uninhabited islands renamed

DO YOU KNOW

- ▶ **The youngest to win Param Vir Chakra**
Yogendra Singh Yadav(19) for his actions in the 1999 Kargil conflict.
- ▶ **The Madras Regiment** is the oldest infantry regiment of the Indian Army (1750s).
- ▶ **The old name of Andaman and Nicobar Islands** Hanuman, during the Ramayana Period.
- ▶ **There are 572 islands in Andaman & Nicobar.**

The Indian Government has named 21 uninhabited islands in the Union Territory of Andaman & Nicobar Islands after recipients of Param Vir Chakra, the country's highest wartime gallantry award.

The Andamans in general and the Cellular Jail in particular played a prominent part in the history of our freedom struggle. People who took part in various anti-British movements such as the 1857 revolt, the Wahabi Movement, and the Burmese Rebellion were deported to the Andamans where they lived there under barbaric conditions. Great stalwarts of the freedom struggle were confined in the solitary cells of the Cellular Jail.

Out of the 21 islands, 16 are located in North and Middle Andaman district, while five are in South Andaman. Some of the 21 islands fall under reserved forest while some have great potential for water sports,

creek tourism and fishing.

The first uninhabited island numbered 'INAN370' in North and Middle Andaman was named after Major Somnath Sharma. Now 'INAN370' will be known as 'Somnath Dweep'. He was the first recipient of the ParamVir Chakra. Sharma lost his life in the line of duty on 3rd November 1947 while handling Pakistani infiltrators near Srinagar Airport. He was posthumously awarded the highest military award for his gallantry and sacrifice during the Battle of Badgam.

Subedar and Honorary Captain Karam Singh who fought in the Indo-Pakistani War of 1947, and was awarded the Param Vir Chakra for saving a forward post at Richmar Gali, south of Tithwal (a small border-village in Jammu and Kashmir) was also honoured after the Andaman administration and the Defence Ministry named the island numbered 'INAN308' after him as 'Karam Singh Dweep'.



Param Vir Chakra Awardees

Name	Rank**	Unit	Date of action	Conflict
Somnath Sharma	Major	Kumaon Regiment	3 November 1947*	Battle of Badgam
Jadunath Singh	Naik	Rajput Regiment	6 February 1948*	Indo-Pakistani War of 1947
Rama Raghoba Rane	Second Lieutenant	Bombay Sappers	08-Apr-48	Indo-Pakistani War of 1947
Piru Singh	Company Havildar Major	Rajputana Rifles	17 July 1948*	Indo-Pakistani War of 1947
Karam Singh	Lance Naik	Sikh Regiment	13-Oct-48	Indo-Pakistani War of 1947
Gurbachan Singh Salaria	Captain	1 Gorkha Rifles[d]	5 December 1961*	Congo Crisis
Dhan Singh Thapa	Major	8 Gorkha Rifles	20-Oct-62	Sino-Indian War
Joginder Singh	Subedar	Sikh Regiment	23 October 1962*	Sino-Indian War
Shaitan Singh	Major	Kumaon Regiment	18 November 1962*	Sino-Indian War
Abdul Hamid	Company Quarter Master Havildar	The Grenadiers	10 September 1965*	Battle of Asal Uttar
Ardeshir Tarapore	Lieutenant Colonel	Poona Horse	11 September 1965*	Battle of Chawinda
Albert Ekka	Lance Naik	Brigade of the Guards	3 December 1971*	Battle of Hilli
Nirmal Jit Singh Sekhon	Flying Officer	No. 18 Squadron IAF	14 December 1971*	Indo-Pakistani War of 1971
Arun Khetarpal	Second Lieutenant	Poona Horse	16 December 1971*	Battle of Basantar
Hoshiar Singh Dahiya	Major	The Grenadiers	17-Dec-71	Battle of Basantar
Bana Singh	Naib Subedar	Jammu and Kashmir Light Infantry	23-May-87	Operation Rajiv
Ramaswamy Parameshwaran	Major	Mahar Regiment[e]	25 November 1987*	Operation Pawan
Manoj Kumar Pandey	Lieutenant	11 Gorkha Rifles	3 July 1999*	Operation Vijay
Yogendra Singh Yadav	Grenadier	The Grenadiers	04-Jul-99	Battle of Tiger Hill
Sanjay Kumar	Rifleman	Jammu and Kashmir Rifles	05-Jul-99	Kargil War
Vikram Batra	Captain	Jammu and Kashmir Rifles	5 July 1999*	Operation Vijay

* indicates that the Param Vir Chakra was awarded posthumously (after death)

** Rank refers to the rank held at the time of the award.



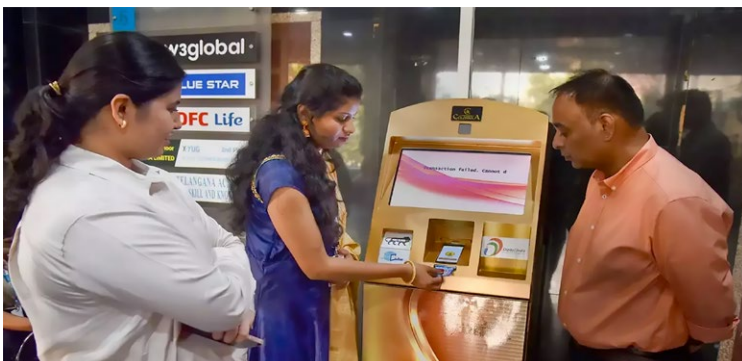


India's first GOLD ATM

India got its first Gold ATM in Hyderabad that delivers gold coins. This is the brainchild of Hyderabad-based Goldsikka Pvt Ltd with technology support from Hyderabad-based startup, Open cube Technologies. It has launched its first Gold ATM at Begumpet and described it India's first Gold ATM.

- ▶ Anybody can withdraw 24 – carat gold – 24 x 7.
- ▶ Apart from debit and credit cards, buyers can use prepaid and postpaid smart cards to withdraw gold.

- ▶ Update in the price of gold is based on the live prices.
- ▶ Eight available denominations - 0.5, 1, 2, 5, 10, 20, 50 and 100 grams.
- ▶ Each ATM has a capacity of holding up to 5 kg of gold, worth around ₹ 2-3 crores.
- ▶ Security measures like inbuilt camera in the machine, alarm system, external CCTV cameras.



Smt Shubha T R

Nagpur Metro and NHAI enter Guinness Book



The Maharashtra Metro Rail Corporation Limited (MMRCL) and National Highway Authority of India (NHAI) have jointly set Guinness World Record for making World's longest double-decker viaduct on Wardha Road with Highway Flyover and Metro Rails supported on single column.

The three-tier transportation system is 3.14 km long, with existing highway in the first level, the flyover highway at a height of nine metres in the second level and Nagpur Metro rail at a height of 20 metres in the third level.

The stretch has 3 metro stations: - Chhatrapati Nagar, Jai Prakash Nagar and Ujjwal Nagar.

The flyover highway has 2.7 km of four-lane road and the remaining half a kilometre of six-lane road.

The decision to integrate flyover highway and Metro Rail to form a double-decker viaduct has helped in avoiding additional land acquisition thereby saving land cost, reducing construction time and project cost. This project has also been **recognised** as the **longest such structures in Asia** by both **India and Asia book of records**.



Aviation Safety Ranking

India jumps to 48th spot

DO YOU KNOW

- ▶ The ICAO's headquarters are in Montreal, Quebec, Canada's Quartier International.
- ▶ **Top positions**
 1. Singapore - 99.69%
 2. UAE - 98.8%
 3. South Korea - 98.24%
- ▶ India shares 48th position with Georgia with a score of 49%.

Aviation safety is the theory and practice of risk management in the aviation industry. It is highly controlled and monitored by International Civil Aviation Organization (ICAO).

Scope of ICAO

- Prevention of aviation disasters and accidents
- Designing aircrafts with

highest safety standards

- Aviation Infrastructure and Environmental protection
- Educating the air transportation personnels
- Educating the general public

In the rankings by ICAO, India is now at the **48th position, a quantum leap from the 102nd rank it had in 2018.**



1. Score for 'primary aviation legislation and specific operating regulations' rose from **90.48%** to **100%**.
2. Score for 'civil aviation organisation' rose from **63.64%** to **72.73%**.
3. Score for "personnel licensing and training" from **25.58%** to **84.71%**.
4. Score for 'aircraft operations' from **80.34%** to **97.44%**.
5. Score for 'airworthiness of aircraft' from **90.20%** to **97.06%**.
6. Score for 'aerodromes and ground aids' from **72.36%** to **92.68%**.



ICAO gives India's aviation safety highest ever rank

The improved safety ranking will make it easier for Indian carriers to expand their wings abroad

Rank in 2018: 102
Rank in 2022: 48



The nation now ranks above China (49), Turkey (54), and Israel (50) for effectively implementing important safety measures, efficient organisation of airports, personal licensing, operations, airworthiness and aerodromes.

Why is it important to be in Top 50 ranks?

Advanced aviation safety in home skies permits Indian carriers to expand faster in overseas markets as permissions for new services are easier to get.





GUJARAT and HIMACHAL Assembly elections

In Gujarat, BJP got a massive mandate, bagging 156 of 182 seats, in a three- cornered contest, the highest ever won by any party in Gujarat.

In the elections held to the state assemblies of Gujarat and Himachal Pradesh in December 2022, we witnessed a clear mandate being given – to the BJP in Gujarat and to the Indian National Congress in Himachal. Both were unambiguous verdicts that left no scope for any political manoeuvring. Let us try to decipher the message of these results.

Gujarat

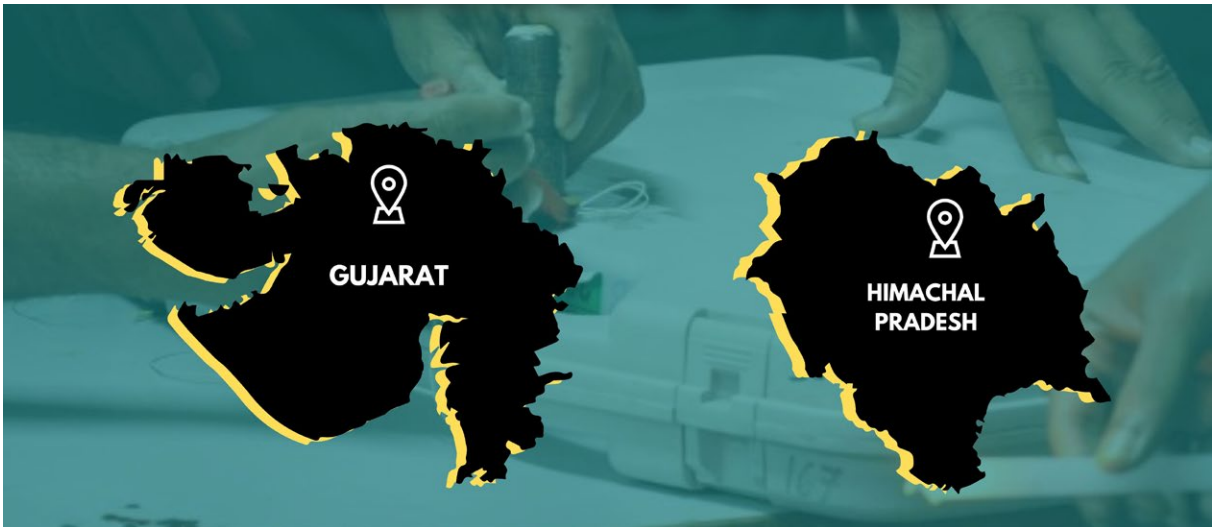
In Gujarat, BJP got a massive mandate, bagging 156 of 182 seats, in a three- cornered contest, the highest ever won by any party in Gujarat. The previous best was 149 won by Madhavsingh Solanki in 1985. The vote share of BJP moved up to 52.50%. Congress's tally of 17 is the lowest for the party. Aam Aadmi Party (AAP) bagged 5 seats.

A cursory look would suggest that the three-cornered contest

helped BJP with a landslide. But the increase in vote share of the BJP by 3.45% over the last elections clearly indicates further consolidation of the BJP in Gujarat.

It is phenomenal for a party to secure a mandate for the seventh consecutive term and to increase its vote share, similar to that of the Left front Government in West Bengal that ruled for seven consecutive terms (1977 to 2011). However the comparison ends there. The elections in Gujarat are free and fair unlike that in the left regime of West Bengal where violence and rigging in elections was the norm.

The reasons for the BJP's success seem to be a combination of many favourable factors. PM Modi's charisma and personal connect, the effective campaigning by the BJP, the organisational strength and the excellent organisational skills of the state BJP



In Himachal, Congress secured a decisive majority by winning 40 of 68 seats.

president C.R.Patil, the wise move of replacing Vijay Rupani with Bhupendra Patel as CM in 2021, replacing a significant number of sitting MLAs, development and governance have all helped the BJP.

The aggressive campaign of the AAP has helped the party in garnering 12.92% of the vote share. It remains to be seen whether AAP will ultimately displace the Congress in Gujarat.

Himachal Pradesh

In Himachal Congress secured a decisive majority by winning 40 of 68 seats. BJP could win only 25. While BJP can draw solace from the fact that Himachal has never returned an incumbent government to power since 1985, it has a lot of home work to do. Despite the fairly clean image of the CM Jai Ram Thakur, the party lost due to the lack of a strong organisation and rampant factionalism. There were 23 rebels in the fray.

The much famed “discipline” in the party seems to be a thing of the past. In contrast the campaign of the Congress under the leadership of Prathiba Singh, the wife of Congress stalwart late Virbhadra Singh was well coordinated and effective.

The insensitivity of BJP to the demands of the government servants, the disappointment of the apple growers’ lobby and some backlash on the Agnipath scheme have added to the woes of BJP.

As far as the vote share is concerned, though the difference between Congress and BJP is less than 1% , BJP has dropped by over 5% points since the last elections. In the home state of its national President J.P.Nadda, BJP has too much on its plate.

From here to Lok Sabha 2024

In the 7 state assembly elections in 2022, BJP held on to 5 and lost one to Congress. In 2023 elections to 10 state legislatures are due. Out of these the BJP is in power in 5 either independently or as a coalition partner.

It is the performance of political parties in these assembly elections that will be crucial for 2024. BJP is known as a party in combat fatigue all the 365 days and will certainly do its best to face this challenge. Congress and the other parties will also try to build on their successes. But ultimately it is the Indian electorate that will decide and they can never be taken for granted.





Hornbill Festival of Nagaland

The 23rd
Hornbill
Festival
2022 was
conducted at
Naga Heritage
Village Kisama
in Nagaland.

The Hornbill Festival of Nagaland popularly known as the 'Festival of Festivals' is a yearly grand carnival organized by the State Tourism of Arts and Culture Department, Government of Nagaland. It brings together all the seventeen Naga tribes, to promote inter cultural harmony. It is to encourage inter-tribal interaction and promote the cultural heritage of Nagaland. It is named after the Indian Hornbill—a common bird in Nagaland's folklore and often seen in the state's forests.

The 23rd Hornbill Festival 2022 was conducted at Naga Heritage Village Kisama in Nagaland from 1st to 10th December 2022. Vice President of India Jagdeep Dhankhar graced the inaugural function as the chief guest. Since 2000, the festival has attracted

visitors from across the world. It showcases all the Naga tribes, their culture and distinctiveness in one place.

This year, more than 130 stalls were set up in Kisama wherein, 100 of them were taken by the Micro Small & Medium Enterprises. The daily cultural events included activities such as music festivals, photo fest, fashion shows, adventure sports, etc. It also had Traditional Naga Morungs Exhibition, sale of arts and crafts, chilli eating challenge and ended with musical medley and concerts in the late evenings.

Festivals are ways to bring together families to celebrate togetherness. Such cultural mosaic of multi-ethnicity is worth cherishing. **The Hornbill Fiesta is a tribute to Indian diversity.**





562 out of 588 identified projects across Northeast Geo tagged

Geo tagging is the process of attaching geographic coordinates to media based on the location of a mobile device. Geo tags can be applied to photos, videos, websites, text messages, and QR codes, and could also include time stamps or other contextual information.

Geo tagging provides helpful insight into consumer activity. By using geo tags to analyse where and how consumers interact with their brands, organizations can provide specialized offers and messaging. Geo tags also reveal where individuals are when engaging with a website, or where they move throughout the day with their mobile device.

Ministry of Development of North Eastern Region (MDoNER), in collaboration with North Eastern Space Application Centre (NESAC), Department of Space, Government of India, has developed a project monitoring Mobile Application.

The NESAC is an autonomous organisation under the Department of Space and located in Shillong provides dedicated service to the region's eight states - Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The NESAC was established as a joint initiative of the Department of Space and the Shillong based North Eastern Council (NEC). The physical progress of the projects supported

by MoDoNER is monitored in three modes - mobile apps, satellite images and drone images.

Till November 2022, out of 588 identified projects, 562 projects, at 1,664 different locations across North Eastern Region (NER), have been geo-tagged through satellite images and mobile app. These projects cover a range of sectors and will be implemented in the North Eastern Region.

The development of the mobile application is part of MDoNER's efforts to improve the monitoring and implementation of projects in the region. The use of satellite and drone images allows for real-time tracking of progress, which can help to identify and address any potential delays or challenges.



HERITAGE HEALTH to be documented in KARNATAKA

In a first, “a Monument Health Card “is being prepared by the Archaeological Survey of India (Bangalore Circle) covering all the 129 protected monuments across 17 districts in Karnataka. For any site to be listed under the ASI, it has to be “at least 100 years old”, and of “national importance”. With 506 historical structures, Karnataka is home to the second largest number of ‘centrally protected monuments’ under the jurisdiction of the ASI, after Uttar Pradesh.

The inspection which is carried out on a yearly basis, makes a study of the monuments and understands if it is strong enough to sustain. However, from this year onwards, the ASI, Bangalore office has been asked to prepare a card for every monument which will carry the details - status of the monument, brief history, the environment along with drone shots and engineering aspects.

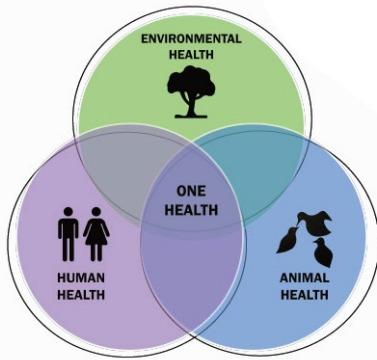
It is seen that if the activities are carried out every year, it will help determine the deterioration or degradation of the structures and suggest preventive measures. The data collected would help officials prioritize work to be taken for restoration / conservation. It will help determine the work that needs to be attended to immediately or which can wait.

Monuments are living examples which speak eloquently about the architectural glory of the past, depicting Indian culture. Preservation of these monuments and heritage sites is not only our responsibility but also a huge service to the mankind.

It is imperative that old buildings of historical and architectural importance be preserved in good condition, to imbibe a strong sentiment or feeling of belonging to our history and culture. We need to cherish the same as a treasure of history, left by our rulers and must be preserved for future generations.

During restoration, if there is an understanding of the history and architectural details of the construction, the rework can be done using the same principles to ensure that the design remains the same. It will also help protect the uniqueness of the monument.

Unfortunately, many historical monuments are not being maintained properly nor given the importance due to them. That is because we have not understood the legacy and the significance of these structures. It is time to create an awareness for the same so that the generations to come understand it and make efforts to preserve them.



With this centralized institute, India will be able to identify and even avoid future pandemics.

National Institute of One Health

PM Modi laid the foundation stone for the National Institute for One Health (NIOH) in Nagpur on 11th December 2022. This institute will boost India’s health research and promote the central government’s efforts to provide world-class health infrastructure across the country. It will specifically focus on increasing the preparedness and laboratory capabilities for the identification of novel and unknown zoonotic agents.

NIOH will be established by the joint effort of the Indian

Council of Medical Research (ICMR) and Indian Council of Agricultural Research (ICAR). This dedicated institute will be equipped with a Biosafety Level (BSL-IV) laboratory.



“With this centralized institute, India will be able to identify and even avoid future pandemics,” said Dr Ashish Paturkar, vice-chancellor of Maharashtra Animal and Fisheries Science University (MAFSU). He also added that “the institute will be a think-tank devoted to ‘One Health’ involving animals, humans, wildlife and environment.”

More than half of all the infections people get can be spread by animals. A recent example would be the Nipah virus outbreak in Kerala. With increased contact between humans and animals and adverse impact of climate change, human health can no longer be seen in isolation.

NIOH will provide timely remedies and guidelines for controlling diseases; humans - animals and vice-versa.





IAF's CHINOOK

completes longest non-stop helicopter sortie

Presently we have 15 Chinook helicopters playing an important role in maintenance of our frontline force.

India had finalised a contract in September 2015 to procure 22 Apache helicopters and 15 Chinook choppers from the US at around USD 3 billion.

The Chinook, a battle proven machine can carry 9.6 tons of load including artillery guns, light armoured vehicles and heavy machinery to high altitude areas.

A first consignment of four arrived in Feb 2019. These four CH-47F Chinooks were formally inducted into 126 Helicopter Flight at Chandigarh. Presently we have 15 Chinook helicopters playing an important role in maintenance of our frontline force deployment amid the ongoing standoff in eastern Ladakh.

Last month a Chinook helicopter successfully completed the longest non-stop sortie between Chandigarh and Jorhat in Assam covering 1,910 km in 7 hours and 30 minutes, a

repeat of its maiden attempt in April earlier this year thus validating IAF's employment of this asset.

- ▶ It is a twin engine tandem rotor multi-role helicopter with vertical-lift platform used for transporting troops, artillery, equipment and fuel.
- ▶ In a 241 km/hr flight, it uses 329 gallons (1245 litres) every hour. It has a maximum flight time of 7 hours and 850 nautical miles or 1574.2 km distance (when equipped with two ER (Emergency Relief) tanks). 23.133 kg is the maximum gross weight.
- ▶ It can lift around 11 tonnes of cargo or 45 fully armed troops besides carrying under slung payloads like the M777 ultra-light howitzer, a 155 mm artillery gun inducted for use along the China front.



IAF AIRFIELDS

modernised

Rewind



- August 2010- IAF undertook massive upgrade of its airfields and helipad infrastructure across India to bolster operational logistics and flexibility on both the eastern and western fronts and removing existing gaps in the hinterland.
- Plan was to operationalise 42 fighter squadrons up from the erstwhile 32 squadrons by 2022 with progressive induction of Sukhois, other multi-role combat aircrafts, indigenous Tejas Light Combat Aircraft.
- Acquisition plan ran into financial crunch putting on hold induction of aircrafts, munitions and logistics of runways in crucial airbases.
- A dual-phase project called Modernisation of Air Field Infrastructure (MAFI) commenced.
- Phase-I of MAFI involved upgrading 30 Indian Air Force (IAF) airfields in 2011, for Rs 1,215 crore. Phase-II planned for the airfields of the IAF, the Indian Navy (IN) as well as the Indian Coast Guard (ICG).
- MAFI phase -I launched



30/67 IAF airfields upgraded under MAFI

Next Generation Hardened Aircraft Shelters (NGHAS)



MAFI Phase-I

- Bhatinda airbase taken up as the pilot project.
- The upgrades include resurfacing, expansion and lighting of runways for night operations as well as installation of new tactical navigational (TACAN), instrument landing (Cat-2 ILS), air traffic management and air-to-ground radio communication (RCAG) systems.
- North-East was a major thrust area, with upgrade of airbases in Chabua, Dibrugarh, Jorhat, Mohanbari, Hashimara, Guwahati and Bagdogra.
- Re-activating western sector ALGs like Daulat Beg Oldie, Fukche and Nyama in eastern Ladakh besides upgrading eastern sector ALGs like Pasighat, Mechuka, Walong, Tuting, Ziro and Vijaynagar and several helipads in Arunachal (to strategically counter China's massive build-up of military infrastructure along Line of Actual Control) undertaken.
- Air bases made functional to operate all kinds of aircrafts (including civilian) and IL-78 mid-air refuellers to support fighters from virtually anywhere in the country.

- Tata Power SED (now Tata Advanced Systems Limited-TASL) was the lead Indian consortium which had foreign technology partners supporting as sub-contractors for the multi-disciplinary requirements of the project.
- 2020- modernisation of 30 airfields successfully completed. IAF operational footprint for all weather conditions with built-in secure communications, navigation aids, landing aids, direction finding instruments and automated air traffic management systems given a major boost.

MAFI Phase-II

- 08 May 2020 - Contract worth ₹1187 crore signed between the Ministry of Defence (MoD) and TASL.
- Additional features to be installed include Cat-II Instrument Landing System (ILS) and Cat-II Air Field Lightning System (AFLS) both of which will be directly connected to Air Traffic Control (ATC) thus allowing aircrafts to take-off and land in adverse weather conditions, improving flight safety and night operation capability.
- About 250 micro, small and medium enterprises (MSME) will be directly benefited from being involved in execution of various activities of this project as resultant investments will boost the local economy since it involves the manpower, IT skills and capital of the allied sectors.





Col Shashidhar M V (Retd)



CLASH in TAWANG

-an update

Beijing has never accepted the existence of the Tibetan exile government based in India.

Backdrop

On the night of 08/09 Dec 2022, the Chinese People's Liberation Army (PLA) had intentionally tried to cross the Line of Actual Control (LAC) in the Yangtze sub-sector of the Tawang area of Arunachal Pradesh.

This unprovoked effort is a deliberate act to keep the border issue simmering and undermine India's development processes.

Beijing often takes recourse to its own 'Salami Slicing' by changing its neighbourhood through use of military force so as to assert its authority. Recently such crossings succeeded in South China Sea and to some extent in Doklam

and Galwan. Using military force often creates nervousness in the political leadership of adversary thus paving the way for its continued political and economic goals.

Further, Beijing has never accepted the existence of the Tibetan exile government based in India. The recent Chinese incursion along the LAC is part of its strategy to gain leverage over India in a future border settlement and assert its control over the Tibetan plateau.

The incident

An attempt incident occurred at Yangtse in the Tawang sector of Arunachal Pradesh when an Indian Army post at approximately





17,000 feet was surrounded by a battalion strength of the PLA in order to evict the 50 odd personnel (approximately two platoons).

It was a deliberate action at about 3 am in the morning and not a contingency arising out of any verbal or other disagreement on ground. The incident went through without a shot being fired but with much more jostling, physical contact and use of improvised hand-held tools like clubs and machetes. This has become the new normal on the LAC.

The Indian soldiers were well prepared because of advanced intelligence of the PLA intent. The attack was beaten back with some kind of rehearsed response and successfully.

General Officer Commanding in Chief, Eastern Command said, "PLA patrol transgressed and was contested very firmly. The incident was contained at the local level though some minor injuries were there to soldiers of both sides and the local Commanders were able to resolve the issue by carrying out negotiations resorting to the existing protocols followed by a flag meeting at the delegation level at Bumla, wherein the issue has been resolved further. The border areas along the northern frontier are stable and we are firmly in control."



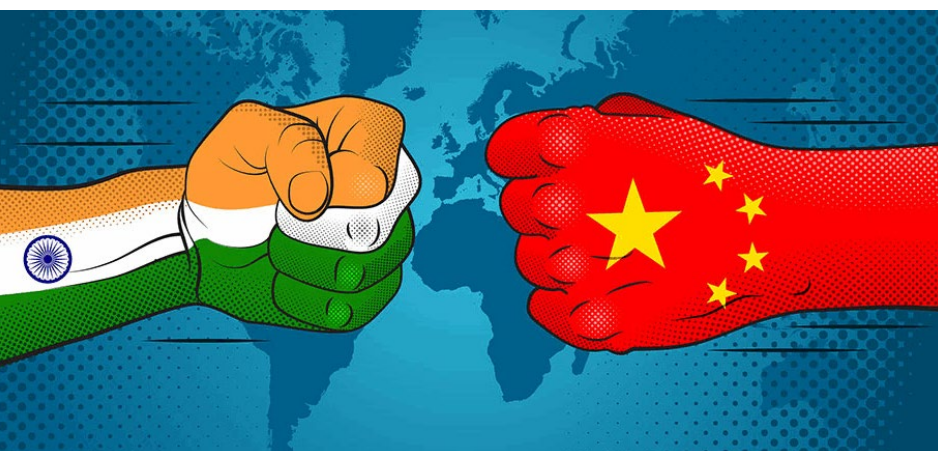
India's Proposed response to tame the Dragon

▶ The long-term goal must be to pursue sustained economic growth, shore up military infrastructure along LAC, modernisation and acquisition of military hardware. Also advocating pluralistic and progressive democratic model, social capital, soft skills etc.



▶ The near-term solutions include-

- Remain unpredictable and continue a front-footed approach.
- Diplomatic actions by refusing to be part of any Chinese initiatives- Belt & Road Summit is one such action besides Shanghai Cooperation Organisation, BRICS. Ascending the G-20, offers now a plethora of opportunities for India.
- Partake in countervailing coalitions and by offering support to organisations like AUKUS thus creating friction and raise tempers in the Chinese political hierarchy.
- Expanding its maritime capability by projecting power in Indo-Pacific region.
- Boosting India's nuclear deterrence (days after a violent clash with Chinese troops in Tawang, Agni-V was test-fired to strike targets at ranges up to 5,000 km which means the missile can even reach Beijing).





DIVERSE HABITATS OF BIRDS

The birds are the only class of beings that can walk, run, swim and fly. Birds are the most widely distributed class among animals.



Plum-headed parakeet

There are millions of species in the animal kingdom, but those that fall under the class Aves are special. This is because only in this class, we find species with ability to live and move on land, water and air. The birds are the only class of beings that can walk, run, swim and fly.

Birds are the most widely distributed class among animals. We can find them in tropical, deciduous, coniferous and rain forest regions, in water bodies of all sizes, in snow, in grassland, in deserts and even in high seas. This is because of their ability to adapt themselves to their environment and also when the going gets hard, they can migrate across various landscapes.

Let's look at some popular habitats of birds and their adaptation.

Forest: Forest dwellers are



Blyths Reed Warbler

usually small in size like warblers, babblers, thrush, cup wings, parakeet, bulbul, pigeon, pitta etc. They are very colourful (especially the males).

This helps them blend in with the leaves and flowers to avoid detection. They have special feet design with three toes in front and one behind so that they can perch and hold on to the branches easily. They fly fast to easily move inside the trees and bushes.

They are usually insectivorous (warblers, babblers) or frugivorous (parakeets, bulbuls, pigeon) or specialist like flower peckers that

Sunbird



eat flower buds or sun birds that are nectar drinkers. They have special adapted beak for the kind of food they eat. The warblers have thin peak to dig out insect; thrushes have thin, long beak to forage in fallen leaves, the parakeets have thick beaks to help them eat the hard fruits and seeds, the sunbirds have long curved beaks to help drink nectar.

Desert: The birds in deserts are mainly brown in colour and larger compared to forest birds. They are mainly hunters and insectivores. Some of them are seed eaters found in grasslands near the deserts. Birds found in desert are eagles, buzzards, harriers, wheatear, bustards, etc.

Booted Eagle



Great Indian Bustard

These birds have long wings so that they can use the hot air of desert to fly high and far. As there is limited vegetation, they have keen eyesight and sharp claws for hunting and tough beak with a hook in front to tear open the prey. They have special arrangement of feathers to regulate temperature and keep them cool.

Higher altitudes / snow: There are records of birds in areas where the treeline stops and vegetation



Himalayan snowcock



Snow Pigeon

is the thinnest. The snow-capped peaks and higher altitude habitat have birds like partridge, pigeon, buzzard, eagle, accentors, choughs etc. These birds have down feathers that can contain heat and keep them warm in extreme conditions.

Beaches and river banks: The birds found here are called waders. They are characterized by long thin legs, long toes and slim body. This helps them “wade” in water; hence the name. Examples are sandpipers, shanks, curlews, whimbrels, avocets, knots etc.



Wood Sandpiper

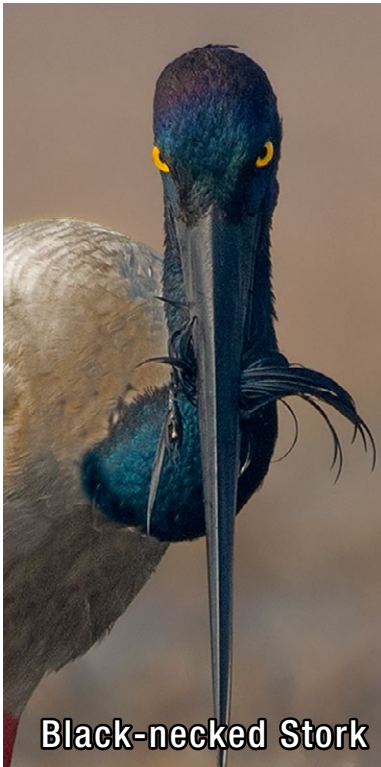
They eat small crustaceans, fish, worms and insects. They dig deep in the riverbed/beach to get the prey. They have long, thin beaks with a tactile sensor that helps them pick prey even when they cannot see it.

Waterbodies: The water bodies like lakes, rivers, streams and so on have many birds living in them. These include ducks, geese, cranes, storks, fish eagles etc.

These birds have special coating on their feathers to protect them from getting wet and they can dive inside water and catch prey. They have small, webbed feet that help them swim. They have

The birds in deserts are mainly brown in colour and larger compared to forest birds. They are mainly hunters and insectivores.





As humans have created a habitat of cement and steel, the birds have adapted themselves to live here too.

flat, thick beaks designed to catch and eat slimy prey like fish and crustaceans.



High Seas: Birds living in high seas are called Pelagic. They include skuas, boobies, terns, gulls etc. They have large wings and can fly long distances. They use man made structures like ships, oil rigs and pipes to sit and rest when tired. These fish-eaters rarely come to the shore.

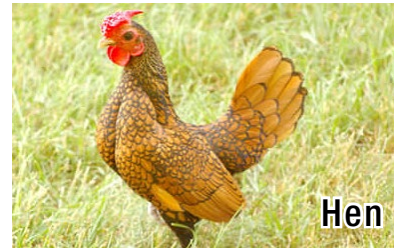
Nocturnal: These sets of birds are found across various habitats and they specialize in hunting after dark. These include owls, frogmouth, nightjars etc. They have a keen sense of hearing to pick up the movements of prey and very good eyesight. They have plenty of hairs on their face. They eat a variety of prey.

Scavengers: These are perhaps the most important set of birds that help keep the environment clean. They can eat and digest even



putrid meat. These include vultures, eagles, corvids, ibis and egrets. They have a strong digestive system that helps them digest all kinds of animal waste. They can even swallow the bones and digest them. They are found across habitats.

Urban birds: As humans have created a habitat of cement and steel, the birds have adapted themselves to live here too. We



can see mynas, crows, pigeons, parakeets, falcons and shikra living very comfortably in the cement jungle. They find food by hunting or scavenging. They have adapted themselves to eat cooked food that humans offer and to build nest in man made structures.



Birds have adapted themselves across many habitats and have stood up to challenges thrown at them by nature and humans.

They have always helped Nature by helping it through pollination, seed distribution, pest control, deworming of trees etc. They help humans by keeping pest population down and by scavenging all biodegradable waste.

It is essential for humans that they respect birds and realize that the future of humanity largely rests on protection and growth of avians in the world.





Understanding the need for different types of investments

Setting financial goals helps in determining how much money we need at each stage in our life.

Shravan and Gita, their parents and grandpa settled down to watch the exciting World Cup Football final between Argentina and France.

The next day the children discussed the game after dinner. “What a match it was! Mbappe scored a hattrick yet France lost!” Shravan exclaimed.

“I am happy for Messi!” Mom smiled. “He deserved to win this cup, having worked so hard all these years to achieve this goal.”

Grandpa: “I saw an interesting article on a bank’s website drawing a connection between football and finance – it explained how achieving financial goals is similar to winning a football game.”

“Financial goals? What do you mean grandpa?” Gita asked.

Grandpa: “Each family needs money to satisfy basic needs and to fulfil their dreams in future. Setting financial goals helps in determining how much money we need at each stage in our life. This will help us plan, prepare a budget and manage our finances better.”

“Do we have a financial goal?” Shravan asked.

Mom replied. “We have both short-term and long-term financial goals. Financial goals include our needs as well as wants. What are the needs and wants for our family in the next five years?”

The children jotted down, compared notes and came out with the list.

- Day-to-day household expenses



We need to start saving early and invest prudently so that we have enough money for leading a comfortable life post retirement.

- Education – school fees, books, coaching classes
- Extracurricular classes
- Clothes and accessories
- Festivals, celebrations
- Travel- holiday tours, visiting relatives

Mom: “Good. We also need to budget for gadgets/renewal of household equipment.”

Grandpa: “Now, we need to estimate the amount of money we will require for all these expenses.”

Mom: “We would need around 20 to 25 lakhs in the next 5 years to meet our financial goals.”

Shravan and Gita exclaimed. “Wow. That is a huge sum of money.”

Mom: “When your dad and I started a family, we had started saving. At that time our goal was to buy a house and a big car. We achieved these goals partly from our savings and partly from bank loans. Payment of the monthly EMI is part of our household expenditure budget. We continue to save every month to meet our financial goals.”

Gita: “What about our long-term financial goal?”

Mom smiled. “We’d need around 45 to 60 lakhs for your higher education and even more if you want to go abroad to study. For the very long term, we would need a corpus of 3 to 4 crores post our retirement.”

“Retirement? That’s 20 years away. Isn’t it too early to plan now?” Shravan asked.

Grandpa: ” No, this is the right time to plan for retirement, especially those working in the private sector or doing business because we don’t get a pension. We need to start saving early and invest prudently so that we have enough money for leading a comfortable life post retirement.”

Gita: “Is it enough if we budget our requirement and save regularly?”

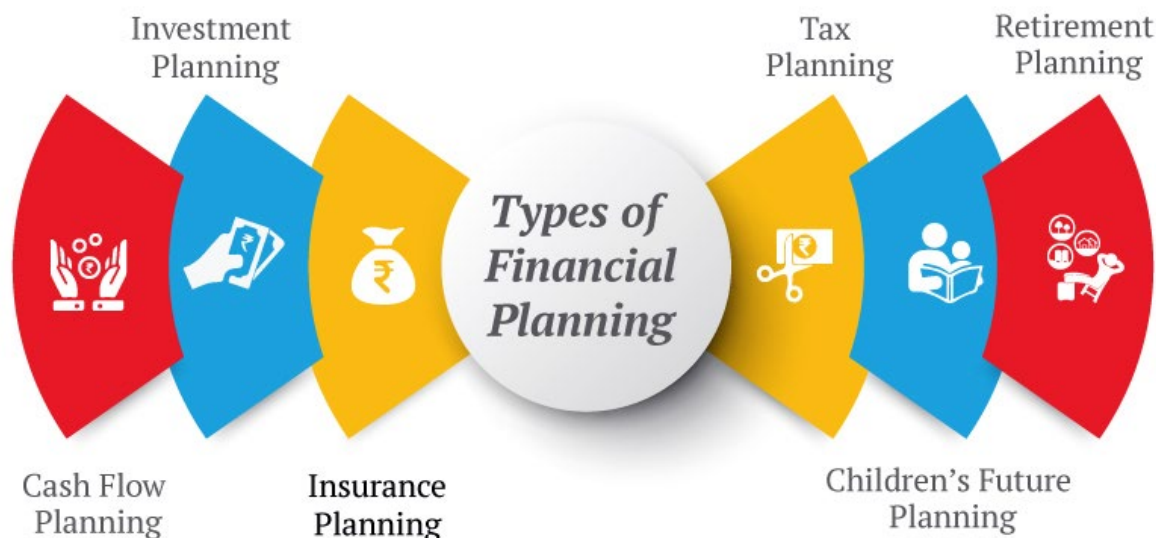
Grandpa: “No. This is where the analogy of foot ball is useful. What we’ve learnt so far in our discussions over the year will help us protect our goal post. This is our protection – like a strong goal keeper and the defence players.”

First step in financial management – The importance of savings, fixed deposits and insurance

These will be your defence players:

1. Habit of **saving regularly** and spending prudently.
2. Creating **recurring deposits** and **fixed deposits** to build a corpus.
3. **Responsible borrowing**
4. **Safe banking** to prevent frauds
5. **Emergency fund** (six months household expenses) – Every family must set aside some savings to manage an emergency. Do you remember





Life insurance and health insurance will protect the family against accidents, unforeseen deaths or illnesses.

how many people lost their jobs or were out of business during the lock down two years back? An emergency fund is very important to run the family in such a situation.

6. **Insurance:** Life insurance and health insurance will protect the family against accidents, unforeseen deaths or illnesses. Insurance will give you peace of mind that your family is protected against such challenges.

7. **Nomination** in bank account and insurance policies: Registering nomination for all the financial assets will ensure that in case of unforeseen death, the depositor's money is handed over without any hassle to the person registered as nominee.

Gita: "If we don't have a strong defence, we would lose in the very beginning."

Grandpa: "True. This will protect our goal post. Will this be enough to win the game?"

Shravan brightened. "We need people like Messi and MBappe to run and score goals against the opposition."

Grandpa smiled. "Yes. We need three kinds of players – the goal keeper and defenders, the midfield players who act as a bridge and the aggressive forwards who will score goals."

"What is the opposition here Grandpa?" Gita asked.

Grandpa: "We can think of these as the opposition.

1. Taxation.
2. Interest rate changes in the market.
3. Inflation"

"How do these affect our financial goals? What are the mid field players we need here Grandpa?" Shravan asked.

1. Taxation: The taxation policy of the Government will impact how much of our income is available for our expenditure and investment.

Tax saving schemes: These offer slightly higher returns than fixed deposits. We can also claim tax deductions/rebate from taxable income on the amount invested in these schemes.

Some of the popular tax saving investment options are Public Provident Fund, Insurance





Fixed deposits are very useful instruments that we need in our financial portfolio.

premium, National Savings certificate and other Government savings schemes.

“Why don’t we invest all our money in these schemes if they offer such benefits?” Shraavan asked.

Grandpa: “Most of these schemes have a lock-in period of 5 to 15 years. We wouldn’t have the flexibility to withdraw money like in a fixed deposit. Secondly the maximum rebate you can claim in a financial year is only 1,50,000. However, these are very useful instruments that we need in our financial portfolio.

2. Interest rate fluctuation: If the interest rates go down, the return on our investment will also go down. Interest from fixed deposits will not be enough to achieve our financial goals.

We can look at different types of investments that provide higher returns. Mutual funds, bonds, debt instruments will provide higher

returns at reasonable risk. We will discuss these types of investments in detail later.

3. Inflation: Inflation is the rise in prices of goods that result in decrease in our purchasing power.

“How does inflation affect our financial goals?” Gita asked.

Mom answered, “Inflation means increase in prices that reduces the value of money you have in hand. Let’s take the simple example of milk. We were spending Rs.2,000 per month on milk five years back. Now for the same quantity of milk, we are paying Rs.5,000. In the next five years, the cost of milk might increase to 10,000 rupees.”

Grandpa : “To beat inflation, we need investment instruments that give us higher returns and aggressive growth. These are your aggressive scorers like Messi and Mbappe.”

“These are equity linked mutual funds, investment in shares, equity stocks. These are important players that you need in your financial management because they can give you high returns to beat inflation.”

“These schemes carry higher risk. You’ve to stay invested for a long period of time to get the benefits.

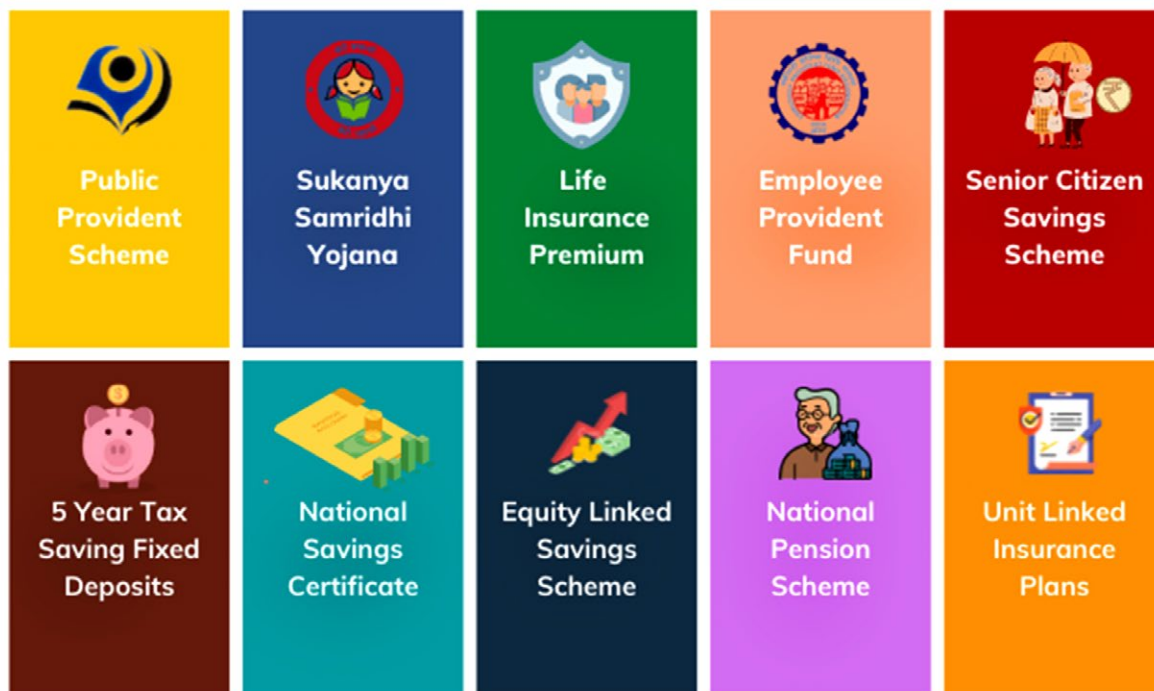
There are also alternative investment options like real estate and gold, offering huge increase in value.”

ACTIVITY

Check out what are the financial goals of your family and find out about the different types of schemes that your parents have found useful in financial management.



UNDERSTAND ABOUT TAXABILITY OF VARIOUS INVESTMENTS UNDER SECTION 80C



Setting Financial Goals for the family – Identify the needs and wants and estimate money required at each stage in life.

Short term goals: Household expenses, education, clothes, household goods, buying assets.

Long term goals: Higher education, travel, study abroad, buying a home.

Retirement goals: Steady flow of monthly income to maintain standard of living, cover medical expenses, travel and leisure.

Check out this link for the complete analogy of Football and Finance:

<https://www.icicibank.com/blogs/personal-finance/tob-vol-19/the-orange-book-vol-19>

Each family will have different financial goals at different stages of life.

Recap

Gita: “ So it’s not enough to just save money. We need to have financial goals for the family – short term and long-term goals and create a plan for achieving the goals.”

Grandpa smiled as he concluded. “Yes. Each family will have different financial goals at different stages of life. We need different players in our financial management strategy to achieve our financial goals.

- **Defenders / goal keeper to protect your wealth** – Savings, fixed deposits, insurance.
- **Mid field players to help you increase returns at reasonable risk** – Mutual funds, bonds, debt linked instruments.
- **Aggressive players/goal scorers to help you maximise returns** – Equity linked mutual funds, investment in shares, alternate assets.



TAXATION LAW in India - III CUSTOMS LAW



Matters related to income tax fall under the Central Board of Direct Taxes (CBDT) and matters regarding GST and customs duty fall under the Central Board of Indirect Taxes & Customs (CBIC).

Internationally, the HSN follows a six-digit coding system whereas India follows an eight-digit coding system wherein the first two digits represent the chapter number, the next two indicate the heading number, the next two reflect the sub-heading number and the last two represent the product code.

In the previous edition, we discussed GST, which is an indirect tax. Customs duty is another indirect tax which is imposed under the Customs Act, 1962.

OVERVIEW

The Act empowers the government

- to levy duty on exports from the country and imports into the country,
- to lay down procedure for importing and exporting and mentions the offenses and penalties regarding the same, among other matters.

Duty on imports is termed import duty while duty on exports is termed export duty. The Act governs entry and exit of different categories of goods, vessels, aircrafts, etc., into or outside the country. This serves the functions of regulation of imports and exports, prevention of smuggling and protection of domestic industries.

TYPES OF CUSTOMS DUTY

Based on the purpose of duty, the taxable person or the method of calculation, customs duty is of many types including Basic Customs Duty (BCD), Countervailing Duty (CVD), Additional Duty / Special Additional Duty (SAD) and Protective Duty.

VALUATION FOR CUSTOMS DUTY

The valuation of goods for customs duty is based on many factors including the 'Transaction Value,' which is the amount paid or payable as consideration for the good. There are several methods based on which this price can be ascertained for the purpose of levying customs duty.

CLASSIFICATION OF GOODS FOR LEVY OF CUSTOMS DUTY

The import and export goods are classified into many categories for the application of a certain common rate to all items of a particular category. Such categorisation is based on the HSN (Harmonised System of Nomenclature). The HSN is an internationally accepted coding system formulated under the General Agreement on Tariffs and Trade (GATT).

Retrospective: a future action intending to take effect from a date in the past.

EXEMPTIONS

If the Central Government is satisfied that it is in public interest to exempt a certain transaction from customs duty, it may do so by notification in the Official Gazette. Such an exemption notification may not be withdrawn to collect duty retrospectively.



Uddeshya Sachan

Everyday,
the school
starts at
5 a.m with a
yoga session
followed by
an hour of
meditation.

Uddeshya Sachan hails from a poor family in Kanpur. He was removed from school while studying in class 6 as his father could not pay the fees. In this situation, anyone would have blamed his life without doing much.

On the other hand, Uddeshya started a school that benefits the needy.

Later, when his father's business picked up, he continued his education from a different school and graduated in Philosophy. Uddeshya's family wanted him to take up a well-paying job and settle down. However, he had a different vision towards life and did not want to join the crowd.

In 2019, he started a unique school for free "Khusiyon Wala School" (School of Happiness); with five children who belonged to the nearby slum. He began teaching in a rented room and a whiteboard. The school has around 400 students now with three teachers and also older children volunteering to share their insights on different subjects like Science, Maths, Music etc.

The School curriculum

The syllabus is tailored according to the age group. In a homely environment, the children learn through theatre, videos and documentaries. Everyday, the school starts at 5 a.m with a Yoga session; followed by an hour of meditation. After which, the children return home and come back at 8 a.m.; then at 2 p.m., the children go home for an hour and continue their learning in the evening till 5 p.m. at his school.

Most of the children are from the slum and do not go to school and here they feel at home and learn things that are needed for life including music, playing instruments etc.

Uddeshya says that this was not easy for him to accomplish. He relied on contributions from others like the Ed-tech platform which enabled the venture to grow from one room to eight rooms now surrounded with many musical instruments like harmonium, flute etc.





Jantar Mantar

a UNESCO World Heritage site

The main objective of Jai Singh was to create astronomical instruments.

Astronomical observatories known as the Jantar Mantar were built by Raja Sawai Jai Singh in the early 18th century. It includes a set of fixed instruments, each with a specialized function for astronomical measurement.

The main objective of Jai Singh was to create astronomical instruments that would be more accurate and permanent than the

brass instruments used at that time. His solution was to make them really large using stone and masonry which brought forth a collection of large-scale structures for the measurement of celestial movement that is unequalled today.

Jai Singh built 5 observatories across northern India (Mathura, Delhi, Jaipur, Varanasi and Ujjain), to achieve accuracy and to compare readings from different coordinates.

They also played a role in strengthening Jai Singh's political position during the Mughal rule. Out of the 5 observatories, all are open to the public except the one at Mathura. The Jantar Mantar observatory in Jaipur constitutes the most significant and best-preserved of all.





Few instruments and their purpose are as listed below :

Name of the Instrument	Purpose
Samrat Yantra	World's largest sun dial which provides time measurement to an accuracy of two seconds.
Rama Yantra	Measurement of the altitude of stars based on the latitude and the longitude on the earth.
Jai Prakash Yantra	Hemispherical sun dial - most complex instrument designed to provide the co-ordinates of celestial objects
Misra Yantra	Composition of 5 instruments designed as a tool to determine the shortest and longest days of the year.
Shastansa Yantra	Using a pinhole camera mechanism, it is used to measure specific measurements of the sun such as diameter and declination.
Chakra Yantra	Gives the declination of the sun at four specified times of the day, equivalent of a wall of clocks registering local times in different parts of the world.

These observatories were

- designed for the observation of astronomical positions with the naked eye.
- an embodiment of several architectural and instrumental innovations.
- a meeting point for different scientific cultures.
- a symbol of royal authority as a result of urban dimensions, control of time and astrological forecasting capacities.
- a part of a tradition of Ptolemaic positional astronomy (Geocentric system) shared by many civilizations.
- a contribution to the completion of the tables of Zij, which tabulates the parameters used for astronomical calculation.





Sila Thoranam in Tirumala

DO YOU KNOW ?

Precambrian time covers all of the time from the formation of Earth's crust to the beginning of the Phanerozoic eon, about 542 million years ago. This represents more than 80% of all geologic time.

The **Precambrian period** spanned approximately 3850 to 542 million years ago. Before the Cambrian Explosion, the Neoproterozoic is characterised by a significant glacial event and the emergence of the first multicellular organism.

When we talk about Tirumala, we typically mean the Tirumala Tirupati Balaji Temple, which is situated in the Tirupati district of the Indian state of Andhra Pradesh. This location is also known for the Sila Thoranam, a distinct geological feature designated as a National Geo-heritage Monument.

Sila Thoranam is the only arch-shaped natural rock structure of its kind in Asia. It is located 2 km from Tirumala Bus Station and 2.5 km from Tirumala Tirupati Balaji Temple. This is close to Srivari Paadalu, Narayanagiri's highest point, which is situated nearby. One of the best sites to visit in Tirumala is Sila Thoranam. Sila means 'rock' and thoranam means a garland strung over a threshold, connecting two vertical columns or an 'arch' as in this case. It is frequently referred to as the "Rock Garden". Archaeologists discovered this natural stone arch in 1980 while they were excavating this location. This natural arch is made up of two different kinds of rocks linked together. The 25-foot-long and 10-foot-tall arch-shaped rock formation is reported to have been created by weathering and wind erosion.

PreCambrian geologists classify the deposit as being



millions of years old. Roughly 2500 million years have been put on the age of the rock itself, and about 1500 million years have been put on the age of the arch. And what makes the formations unique is that they have been formed with the help of various geological agents such as glaciers, wind and water.

According to reports, this kind of site is unique to only two other locations worldwide. The other two are the Cut Through and the Rainbow Arch in Utah, both in the United States. The best time to view the arch is during sunrise or sunset, when it appears even more impressive and enigmatic in the light of the sun.





The freedom fighter who eliminated 32 British soldiers

UDA DEVI



Fearless Uda Devi of Lucknow killed 32 British soldiers in the battle of Sikandar Bagh in Lucknow in November 1857.

Uda Devi was from Awadh (Oudh), located in present-day UP. She approached Begum Hazrat Mahal for military training. Inspired by her determination towards freedom, Hazrat Mahal gave Uda Devi the command to form a women's battalion.

Begum Hazrat played a leading role in the rebellion of 1857 against East India Company. Dauntless Uda Devi emerged as a fierce sniper. Later she married Makka Pasi, a soldier in the Begum's army, which they served together later.

On 10th May 1857, the British saw the real mutiny of the soldiers. In Meerut, the Indian sepoys killed 50 British troops. This incident threatened the British administration; they decided to

finish the mutineers. The British marched towards Kanpur to take revenge on the mutineers.

Sikandar Bagh was a villa with a well-protected fortification spread across 4.5 acres in Lucknow. Around 2200 sepoys including Makka Pasi and Uda Devi fought against the British. The British artillery shattered the fortified walls of the Bagh and ruthlessly killed every sepoy.

Makka Pasi was among them. Uda Devi watched the sacrifice of her husband and several others. She ordered her troops to attack from different sides and on the flanks of the British army. She climbed a peepal tree to shoot the soldiers of the British forces. Uda Devi took cover in that tree and shot continuously at the British troops.

The Britishers led by Captain Dawson were shocked by the number of casualties of the troops. Uda Devi relentlessly shot down the British soldiers. Later, Captain Dawson ordered his officer Quaker Wallace to look for the hidden mutineers; he realized that there was a sniper near the tree. Wallace shot down Uda Devi who had killed the British sepoys fearlessly.

In the battle of Sikandar Bagh, 2,200 Indian soldiers sacrificed their lives while the British lost 180 troops.





CURRY LEAVES

The secret flavouring ingredient

Curry leaves are beneficial for hair growth due to high beta-carotene levels.



Curry leaves tree is a native of India, Srilanka and few other south east Asian countries. Curry leaves have several vernacular names such as *Kadi patta* or *Meetha neem* in Hindi, *Kariveppilai* in Tamil, *Karivempu* in Malayalam. They are aromatic and have a unique rich flavour. These are often added to dishes such as curries, rice dishes and dals.

In addition to the culinary benefits, curry leaves offer innumerable health benefits due to the powerful plant compounds they contain. They are rich in antioxidants, calcium, phosphorus, essential oils and high on fibre. Findings from several researches have indicated that curry leaf extract provides potent antioxidant effects thereby protecting the nervous system, heart, brain and kidneys from oxidative damages. Curry leaves reduces the cholesterol and triglyceride levels.

Curry leaves also have powerful anticancer properties



and contains a wide array of anti-inflammatory compounds. They are beneficial for hair growth due to high beta-carotene levels. The high calcium and phosphorous content supports both hair and bone health.

Extract or juice made out of curry leaves can be consumed on regular basis. In addition to curry leaves, other ingredients such as mint leaves, lemon, cucumber, cinnamon powder, rock/pink salt can be added to the juice for additional benefits and flavouring.

Dried curry leaf powder also has several culinary and health benefits including treating diabetes, preventing anaemia, aiding digestion, fighting infection and in reducing unwanted weight.

Other uses include using the stem of the curry leaf plant for brushing teeth as it facilitates good oral hygiene. Considering the extensive benefits and use of curry leaves, fresh stem of curry leaves can also be used to plant new saplings in our terrace garden.





PADMA SHRI
2022

Seth Pal Singh

Agriculture | Uttar Pradesh

Progressive Horticulture Farmer from Saharanpur - specialising in modifying Singhara crop geometry & rotation practise

Seth Pal Singh

*an expert at experimentation
and diversification*

Pisciculture – controlled breeding and rearing of fish

Vermicomposting – scientific method of making compost using earthworms

Sethpal Singh from Saharanpur's Nandi Ferozepur village, a man who never fears to try something new won the Padma Shri Award on 21st March 2022. He is an inspiration for thousands of farmers.

The 54-year-old farmer's family of six brothers has about 40 acres of land. Earlier they did traditional farming. In 1995, when Seth Pal thought of doing something new in farming, he started going to the Krishi Vigyan Kendra (KVK) where he learned about various new agricultural methods from the agriculture scientists. After that,

he adopted diversification. He has grown water chestnuts in his field instead of ponds and made a good profit too. He never burns stubbles and his soil does not lack nutrients. He installed units of vermi composting and NADEP composting in his field.

In a year, he grows one vegetable after another and makes a profit of about Rupees four lakhs per acre. Other farmers saw the benefits of his way of farming and emulated him. Besides pisciculture, animal husbandry and growing vegetables, Seth Pal also grows lotus flowers and mushrooms. He has adopted



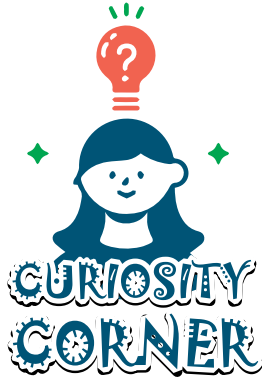
NADEP composting named after **Narayan Deotao Pandharipande** of Maharashtra is a natural process by which biomass wastes, soil wastes and animal wastes are biologically degraded and decomposed into an organic compost.

methods of inter-crop farming and worked a lot for farmers in his region. Along with sugarcane, he grows French beans, turmeric etc., as co-crops. His contribution to organic farming is also substantial.

Accolades

- ▶ **Krishak Samman** (2012) by ICAR.
- ▶ **Jagjivan Ram Abhinav Kisan Puraskar** (2014) from the ICAR.






QUIZ

1. The youngest person to be elected as the President of India.
2. Popular artiste fondly referred to as India's Nightingale.
3. The host of the 2022 Winter Olympics.



4. India joined the array of select few nations with its first Indigenous Aircraft Carrier (IAC) with the commissioning of _____.
5. She had the longest reign in the history of the United Kingdom, and one of the longest by any head of state.
6. The first British Asian to hold the office. He also became the country's first leader of colour and the youngest UK PM since 1812.
7. _____ was conferred with Bhutan's highest civilian award.
8. For the first time, first-world nations have established a fund for "loss and damage." The landmark decision was taken at _____.

Answers on page 66

Smt Archana Sundar 

9. First Indian female to fly over the North Pole.



10. An indigenous semi-high speed train developed by Indian Railways.

11. Guess the event below.

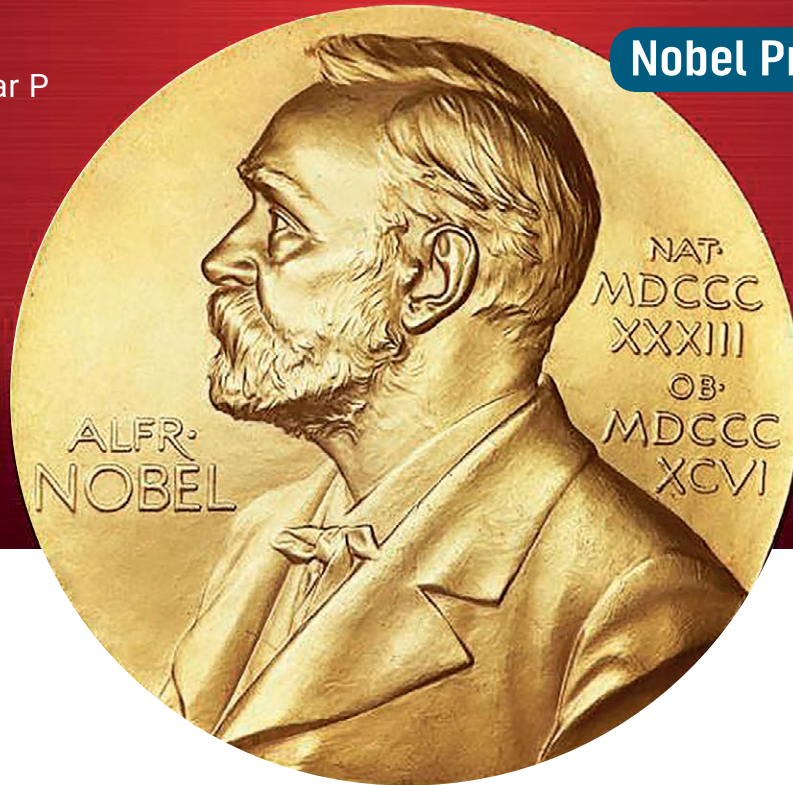


12. Just when the world started settling down from the effects of the Covid pandemic, two countries were involved in war.



13. What happened during this event?





Entangled pair

We are aware of the chemical and physical properties of elements. But particles behave very differently at atomic and subatomic levels.

The Nobel Prize for Physics for 2022 was awarded to Alain Aspect from France, John F. Clauser from USA and Anton Zeilinger from Austria for their experiments on Entangled particles, establishing violation of Bells inequalities and pioneering quantum information science.

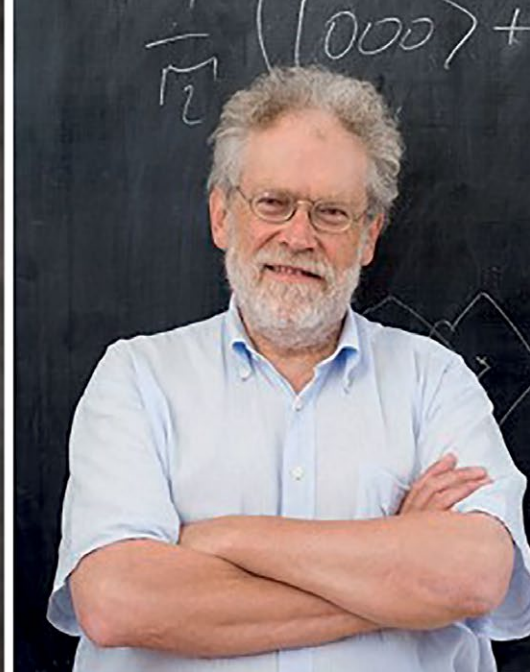
They have conducted ground breaking experiments using entangled quantum states where two atomic particles behave as a single unit, even when they are separated. Their results have paved the way for new technologies based on quantum information. It is certainly worthwhile knowing the basics of quantum mechanics that revolutionized physics during the early decades of last century.

Quantum Mechanics: We are aware of the chemical and physical properties of elements. But particles behave very differently at atomic and subatomic levels.

Quantum mechanics is the fundamental theory in physics that provides a description of physical properties of nature at the scale of atomic and subatomic particles. While classical physics describes the behaviour of nature at macro scale quantum mechanics does so at sub atomic levels.

One key factor in the development of quantum mechanics allows two or more particles to exist as an “Entangled pair”. What happens to one particle happens to the other one, even though they are far apart.





⌘ ALAIN ASPECT

Born: 1947

Birthplace: Agen, France

Education: PhD from Paris-Sud University, Orsay, France (1983)

Currently a professor at Université Paris-Saclay and École Polytechnique, Palaiseau, France



⌘ JOHN F. CLAUSER

Born: 1942

Birthplace: Pasadena US

Education: PhD from Columbia University, New York, US (1969)

Currently is a Research Physicist, JF Clauser & Assoc., Walnut Creek, US



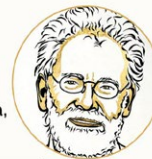
⌘ ANTON ZEILINGER

Born: 1945

Birthplace: Ried, Innkreis, Austria

Education: PhD from University of Vienna, Austria (1971)

Currently Professor at University of Vienna, Austria



For a more detailed explanation:

▶ <https://www.quantamagazine.org/entanglement-made-simple-20160428/>

▶ “Tales of the Quantum” by Art Hobson, Professor, Physics, U Arkansas, author of “Tales of the Quantum”(Oxford University Press, 2017), Chapter 9.

When quantum systems interact, the result can be creation of quantum entanglement, their properties become so intertwined that description of the whole solely in terms of their individual parts is no longer possible.

John Stewart Bell theorized during 1960 that quantum particles possessed hidden variables, properties that are undetectable but still affect the outcomes of experiments.

John F. Clauser developed Bell’s ideas leading to a practical experiment. Alain Aspect developed the setup, using it in a way that closed an important loophole. Anton Zeilinger used these entangled quantum states to develop a phenomenon called “Quantum Teleportation” which makes it possible to move quantum states from one particle to another at a distance.

The powerful ineffable effect of Quantum mechanics is starting to find new applications in such fields as quantum computers, quantum networks and secure quantum encrypted communications.

ANSWERS

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- | | |
|--|--|
| 1. Droupadi Murmu | 9. Captain Zoya Agarwal |
| 2. Lata Mangeshkar | 10. Vande Bharat |
| 3. Beijing | 11. India takes over G20 presidency from Indonesia |
| 4. INS Vikrant | 12. Russia and Ukraine |
| 5. Queen Elizabeth II | 13. President of Japan Shinzo Abe was assassinated while speaking at this event. |
| 6. Rishi Sunak | |
| 7. Narendra Modi | |
| 8. UN climate summit in Egypt’s Sharm-El-Sheikh in November. | |



Over **1 billion people** globally experience disability (One in 7)



International Day of Persons with Disabilities

3 December 2022

Disability is universal

It is estimated **80%** of people with disability live in developing countries.

It is estimated that some **93 million children** – or one in 20 of those under 15 years of age – live with a **moderate or severe disability**.

70 million people need a wheelchair. Only **5-15%** have access to one.



Disability disproportionately affects women, older people, and poor people.



People with disabilities have the same general health care needs as others. But they are:

- 2x** more likely to find health care providers' skills and facilities inadequate;
- 4x** more likely to be treated badly in the health care system; and
- 50%** more likely to suffer catastrophic health expenditure. These out of pocket health care payments can push a family into poverty.

Half (1/2) of people with disabilities cannot afford health care.



Communication disorders/difficulties are not consistently recognised globally as a disability.



360 million people globally have moderate to profound **hearing loss**.

Production of hearing aids only meets **10% of global needs** and **3% of developing country needs**.

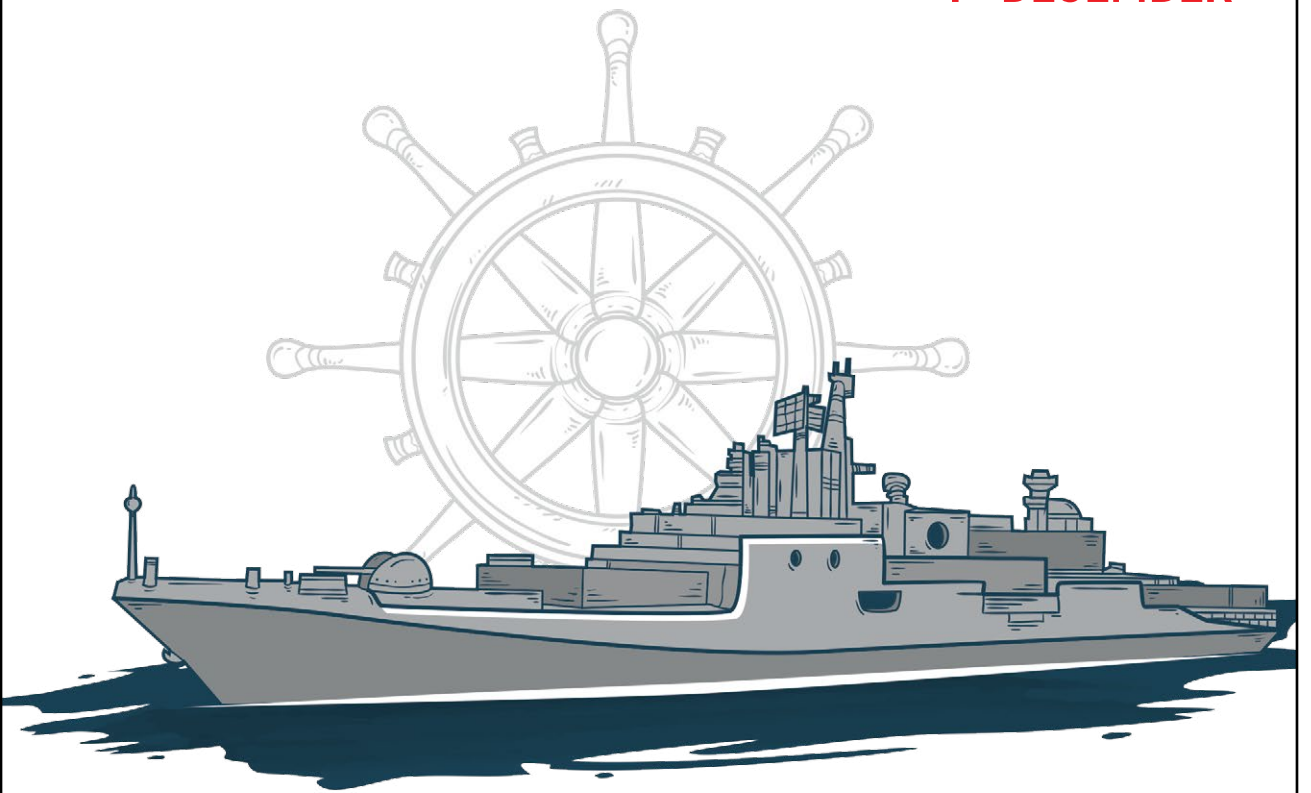


Making all health care services **accessible** to people with disabilities is achievable and will reduce unacceptable health disparities.

Disability is included in five of the goals of the United Nations' 2030 Agenda for Sustainable Development.

INDIAN NAVY DAY

4th DECEMBER



Saluting the warriors
for protecting our seas and
upholding the glory and pride
of our Motherland !

