

DAILY CURRENT AFFAIRS (DCA)

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PRESS AND REGISTRATION OF PERIODICALS ACT, 2023

In News

- Recently, draft Rules, 2024 have been proposed to implement the provisions of the **Press and Registration of Periodicals Act, 2023**.

Press and Registration of Periodicals Act, 2023.

- It replaces the Press and Registration of Books Act, 1867, which governed the registration of print and publishing industry in the country since 1867.
 - The Press & Registration of Books Act, 1867 is a colonial era Act enacted with an aim to regulate the Printing Presses and newspapers with severe penalties including imprisonment for non-compliances of its provisions.
 - The processes under the Act were cumbersome and complex causing unnecessary hardships to publishers for running a newspaper.

Key differences between the PRB Act, 1867 and the PRP act , 2023:

- Registration of periodicals:** The 1867 Act provides for the registration of newspapers, periodicals, and books. It also provides for the cataloguing of books.
 - The 2023 act provides for the registration of periodicals, which include any publication containing public news or comments on public news.
 - Periodicals do not include books or scientific and academic journals.
- Foreign periodicals:** An exact reproduction of a foreign periodical may be printed in India only with the prior approval of the central government.

The manner of registration of such periodicals will be prescribed.

- No declaration for printing presses:** The 1867 Act provides that a declaration specifying the printer/publisher be made to the DM.
 - The 2023 act allows the publisher of a periodical to obtain a registration certificate by filing an online application with the Press Registrar General (PRG) and specified local authority.
 - A person who has been convicted of a terrorist act or unlawful activity, or has acted against the security of the State will not be allowed to publish a periodical.

- Registration of a printing press:** The 1867 Act requires a printing press to be declared before the DM. The PRP act , 2023 allows for information regarding printing presses to be submitted through an online portal.
- Appellate authority:** The new act also provides for an appellate authority.
 - The Appellate Board (Press and Registration Appellate Board) will comprise the Chairperson, Press Council of India (PCI), and two members of PCI to hear an appeal against refusal of grant of registration, imposition of any penalty or suspension/cancellation of registration by PRG.

Source: *TH*

POST-GRADUATE MEDICAL EDUCATION REGULATIONS, 2023

Context

- The National Medical Commission (NMC) has recently introduced the 'Post-Graduate Medical Education Regulations, 2023'

About Post-Graduate Medical Education Regulations, 2023

- It outlines a **comprehensive framework for post-graduate medical education**. The regulations cover the admission, counselling, and course work for post graduate medical education in India.
- These reforms aimed at fostering quality, ethical practice, and inclusivity within the medical fraternity, encompass various critical aspects of post-graduate medical training and aim to enhance the standards of education and practice nationwide.
- Medical colleges/institutions **can apply for permission to start postgraduate courses one year** after initiating an undergraduate programme. They must, however, **satisfy all requirements** for running the existing undergraduate course.
 - Previously**, applying for a postgraduate programme was only allowed after admitting the third batch of MBBS students.
- Non-teaching government hospitals** that fulfil the **minimum requirements**, including beds, qualified faculty, patient volume and adequate infrastructure, will be **allowed to begin postgraduate medical courses**.
 - Medical colleges/institutions must now self-declare their resources and infrastructure annually.

- **Components:**

- ◆ Theoretical knowledge;
- ◆ Practical and clinical skills;
- ◆ Writing thesis;
- ◆ Soft skill attributes including communication skills;
- ◆ Training in research methodology, medical ethics and medico legal aspects.

Key Concerns

- Working hours, mental health and burnout issues among resident doctors, as well as the irregularity of stipends — have not been addressed in the new PG medical education regulations.
- **Doctors with Disabilities:** The recommendations given by doctors with disabilities have been ignored.
 - ◆ It offers inclusivity by providing 5% reservation to doctors with disabilities in PG admission, which was already in existence.
- It asserts that **individuals with mental illness and autism cannot be granted admission** due to a purported lack of methods to establish diagnosis, a claim contradicted by existing rules.
- **Violation of Supreme Court Order:** New terms like 'moderate' dyslexia have been introduced, which are not in accordance with the Act and violation of Supreme Court Order.
 - ◆ **The Supreme Court** declared that a candidate with **cerebral palsy** (a group of disorders that affect a person's ability to move and maintain balance and posture) **eligible for reservation** under the **Persons with Disabilities (PwD) Act, 2016** for admission in the MBBS Course.
- The guidelines are **silent on the integration of Artificial Intelligence** in the curriculum.
- The regulation **prohibits the migration of students** from one medical institution to another.

National Medical Commission (NMC)

- It has been constituted by an **Act of Parliament (The National Medical Commission Act, 2019)**.
 - ◆ The Board of Governors in supersession of Medical Council of India constituted under section 3A of the Indian Medical Council Act, 1956 stands dissolved thereafter.
- The NMC acts as India's top regulator of **medical education and practice**.

Source: [TH](#)

INDIA'S GDP GROWTH

In News

- **India's real GDP growth** in 2023-24 is estimated at **7.3%**, compared to **7.2% a year ago**, as per the NSO.

Key highlights of the NSO estimates

- **GVA growth for the farm sector** is estimated to more than halve **from 4% a year ago to 1.8% this year**, as is the case for Trade, Hotels, Transport, Communication and Services whose GVA uptick is estimated to moderate to **6.3% from 14%** in 2022-23.
- The **share of private final consumption expenditure** in GDP is expected to **drop this year** to the lowest in at least three years at **56.9% from 58.5% in 2022-23**.
- The **investment rate is likely to pick up** to nearly **30% of GDP**, driven by government capex, higher consumption growth is vital for private investments to take on the onus of spurring the economy.
- **Manufacturing GVA growth** is estimated to accelerate to **6.5% in 2023-24 from just 1.3% a year earlier**, while **mining GVA** is expected to rise **8.1%, from 4.6% in 2022-23**.
- **Real GDP or GDP at Constant (2011-12) Prices** in the year 2023-24 is estimated to attain a level of **₹171.79 lakh crore**, as against the Provisional Estimate of GDP for the year 2022-23 of ₹160.06 lakh crore, released on 31st May, 2023.

Gross Value Added (GVA)

- It is a measure of the economic value generated by **a sector, industry, or entity within a specific period**.
- GVA represents the difference between the value of goods and services produced by an economic unit and the cost of inputs and raw materials used in the production process.

Nominal GDP vs Real GDP vs Potential GDP

1. Nominal GDP:

- The total market value of all final goods and services produced within a country's borders in a given year, **measured in current prices**.
 - ◆ **Example:** If India produces \$2 trillion worth of goods and services in 2024, its nominal GDP is **\$2 trillion**.
- **Importance:** Reflects the overall size of the economy and is used for international comparisons.

- **Limitations:** Fluctuations in prices can distort changes in output, making it difficult to understand real economic growth.

2. Real GDP:

- **Nominal GDP adjusted for inflation** to reflect the actual volume of goods and services produced.
 - ♦ **Example:** If inflation in 2024 is 5%, then India's real GDP would be approximately \$1.9 trillion and not \$2 trillion.
- **Importance:** Shows the true growth of the economy, eliminating the distorting effects of inflation.
 - ♦ Comparing nominal and real GDP over time reveals actual economic growth or contraction.
- **Limitations:** Still doesn't account for potential output and doesn't tell us everything about the economy's efficiency.

3. Potential GDP:

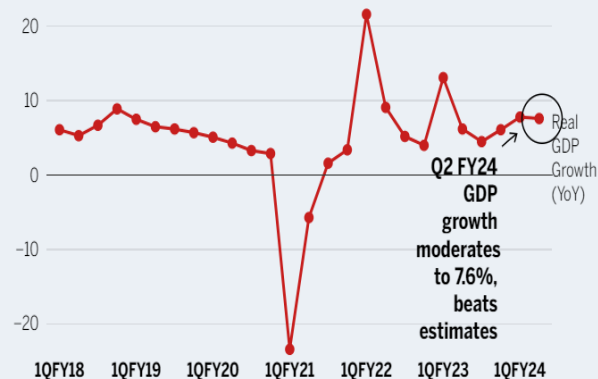
- The **maximum sustainable output an economy** can achieve with its current capital, labor, and technology, assuming full employment and efficiency.
 - ♦ **Example:** If India's potential GDP is \$2.5 trillion in 2024, then it has a "GDP gap" of \$0.6 trillion.
- **Importance:** Shows how close the economy is operating to its full potential, highlighting room for improvement and potential resource underutilization.
 - ♦ Real GDP compared to potential GDP shows whether the economy is operating at its full capacity or not.
- **Limitations:** Difficult to measure precisely and influenced by many factors, making it somewhat theoretical.

India's GDP Growth

- India's economic growth story has been impressive, with its nominal GDP reaching an estimated **\$3.5 trillion in 2024** and **\$7.3 trillion by 2030(IMF)**.

India Real GDP Growth Trend For Last Few Years

India's GDP growth, which took a hit during the pandemic, is now more consistent over the last few quarters



TOI GDP growth date in percentage • Source: EY

- However, maintaining this high growth trajectory **faces several challenges, demanding proactive measures.**

Challenges

- **Global headwinds:** Slowing global growth, rising interest rates, and geopolitical tensions can dampen foreign investment and trade, impacting India's export-oriented sectors.
- **Domestic impediments:** Infrastructure bottlenecks, bureaucratic hurdles, and skill shortages hinder efficient production and investment.
- **Rural distress and uneven growth:** Low agricultural income and slow job creation in rural areas lead to lower aggregate demand and hamper overall economic expansion.
- **Financial sector woes:** Stressed assets in the banking system limit credit availability for businesses and individuals, affecting investment and consumption.
- **Environmental concerns:** Balancing economic growth with environmental sustainability requires addressing rising pollution levels and ensuring responsible resource utilization.

Measures

- **Boosting infrastructure investment:** Investing in railways, highways, ports, and digital infrastructure improves connectivity, reduces logistics costs, and attracts investment.

- **Ease of doing business:** Streamlining regulatory processes, reducing bureaucratic red tape, and improving transparency incentivize investment and boost private sector participation.
- **Skill development and education:** Prioritizing education, skilling initiatives, and vocational training equips the workforce with relevant skills to meet industry demands and drive productivity.
- **Revitalizing agriculture:** Improving irrigation facilities, providing technical assistance, and fostering agritech innovation can enhance agricultural productivity and income for farmers.
- **Financial sector reforms:** Strengthening banks, resolving bad loans, and promoting financial inclusion improve credit flow and support economic growth.

Way Forward

- **Addressing challenges and implementing effective measures** are crucial for sustaining India's high GDP growth.
- **Focusing on inclusive growth, environmental sustainability, and creating a conducive environment** for domestic and foreign investment are key drivers of future economic prosperity.

Source: TH

'DEEP TECH' POLICY

Context

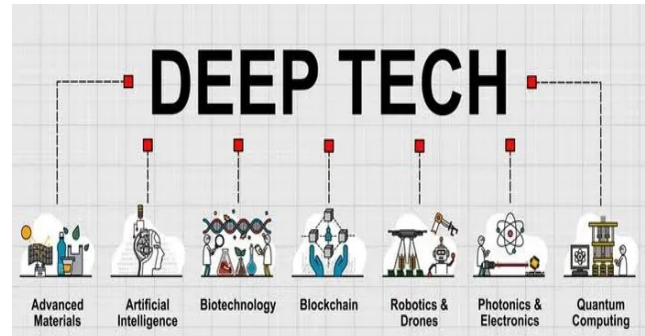
- The Principal Scientific Advisor to the Government of India informed that the **'Deep Tech' Policy** was sent to the **Union Cabinet for approval**.

Background

- The Union government unveiled a **'Draft National Deep Tech Startup Policy (NDTSP)'** in July 2023 for public comment.
- It proposes a comprehensive policy framework to address the needs and strengthen the **Indian Deep Tech Startup Ecosystem**.
- It claims that there are **more than 10000 startups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT), under Union Ministry of Commerce and Industry** which are classified across various sub-sectors within the larger deep tech space.

Deep Technology:

- It refers to innovations founded on **advanced scientific and technological breakthroughs**.
- It has the **potential** to solve India's most pressing societal issues due to their disruptive nature.



National Deep Tech Startup Policy (NDTSP)

- It is strategically formulated to stimulate innovation, spur economic growth, and promote societal development through the effective utilisation of deep tech research-driven innovations.
- It centralises on bolstering deep tech startups, thereby solidifying India's financial stability and stimulating the transition towards a knowledge-centric economy, consequently augmenting India's overall productivity.
- **Vision (Deep Tech of India):**
 - ◆ Ensuring the Security of India's Economic Future;
 - ◆ Facilitating a Seamless Transition to a Knowledge-Driven Economy;
 - ◆ Bolstering National Capability and Sovereignty through the Atma Nirbhar Bharat Imperative; and
 - ◆ Fostering Ethical Innovation
- **Thematic Priority:**
 - ◆ Nurturing Research, Development & Innovation;
 - ◆ Strengthening the Intellectual Property Regime;
 - ◆ Facilitating Access to Funding;
 - ◆ Enabling Shared Infrastructure and Resource Sharing;
 - ◆ Creating Conducive Regulations, Standards, and Certifications;
 - ◆ Attracting Human Resources & Initiating Capacity Building;

- ◆ Promoting Procurement & Adoption;
- ◆ Ensuring Policy & Program Interlinkages; and
- ◆ Sustaining Deep Tech Startups.

Significances

- **Nurturing the Research, Development & Innovation Ecosystem:** The Policy proposes an increase in Gross Expenditure on R&D to provide renewed impetus to basic Research, Development & Innovation with **aim of emerging science base for deep tech startups; and the critical base of trained scientific human resources.**
 - ◆ It aims to **suitably amend the existing research assessment practices** at academic institutes and research labs to enable translation of knowledge outputs into entrepreneurial outcomes.
- **Technology Commercialisation:** By creating seamless partnerships between academic institutions, research labs and industry;
 - ◆ Platforms and technology commercialisation offices within academic institutes and research labs and providing;
 - ◆ It aims to promote innovation in fields such as **AI, Blockchain, biotechnology, drones, and quantum computing.**
- **Open Science and Data Sharing Platform:** The policy promotes setting up an Open Science and Data Sharing platform for encouraging collaboration and knowledge sharing among the stakeholders to promote deep tech innovations.
 - ◆ It aims to incentivise faculty members, through suitable amendments in their appraisal and assessment policies, to undertake entrepreneurial risk.
- **Strengthening India's Intellectual Property Rights (IPR) Regime:** By measures like:
 - ◆ Establishing a **Single Window Platform that enables an Unified IP Framework;**
 - ◆ Customised for deep tech startups;
 - ◆ Guidelines on creation of **Design IPs** leading to greater strength in respective technology competencies;
 - ◆ Guidance on streamlining the **patent application process;** and
 - ◆ Unified database from all **Higher Education Institutes (HEIs)** populated with publication, patent and project information .

- **Strengthening Global Competitiveness:** The policy proposes to strengthen India's position in global IP related convention, **cross border IP protection**, providing **provisions in Free Trade Agreement (FTA)** and establishing a well-defined mechanism for evaluating the suitable amendments in **National IPR Policy.**
- **Enable Shared Infrastructure and Resource Sharing:** The policy aims to provide access to shared infrastructure, for a nominal fee wherever necessary, is key to reducing initial capital expenditure for the startups.

Major Concern

- **Funding:** Currently in India, **only about 10% of startups are 'deep tech'**.
 - ◆ Investments in 2023 hit **a five-year low of \$7 billion**, taking India's global ranking from **third to fourth place.**
 - ◆ Funding declined across all stages, with late-stage funding witnessing the biggest drop of 73%, to \$4.2 billion in 2023 so far.
 - ◆ The quantum of funds in 'deep tech' needed is vastly larger, unlike startups focussed on fintech or retail software.
- **Competition from China:** India stood second in terms of research in technologies, including biofuels, smart materials, advanced composite materials, and high-specification machining processes.
 - ◆ China's global lead was spread across defence, space, robotics, energy, environment, biotechnology, artificial intelligence (AI), and quantum technology.
- Other **key barriers** such as **resource and infrastructure constraints, and understanding risks associated with frontier technologies.**

Way Forward

- Funding is a key driver of a startup's growth journey, and access to long-term finance is particularly critical for deep tech startups for product development, validation, and scaling.
 - ◆ It is essential to **Facilitate Targeted Long-term Funding** for deep tech startups, and there is a **need to address the key barriers** for the best utilisation of deep tech.
- There are International Initiatives within the Indian Deep Tech Startup ecosystem, like the Indo-US Joint Working Group on Artificial Intelligence

(2020); the Indo-Israel Deep Tech & Life Sciences Mission; the Indo-Japan Deep Tech & Startups Partnership from which India can utilise effectively and efficiently in the field of deep tech.

Source: TH

ADITYA L1 MISSION

Context

- Recently, ISRO performed a crucial manoeuvre to bind Aditya-L1 into L1 orbit.

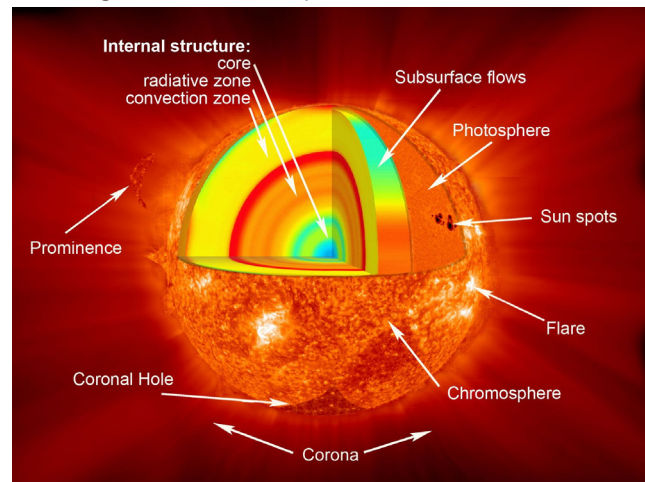
What is the Aditya-L1 mission?

- Aditya-L1** is the first space-based Indian observatory to **study the Sun**.
- The solar mission will not see the spacecraft actually go to the sun, it will instead create a space observatory at a point from which the sun can be observed even during an eclipse.
- The spacecraft will be placed in a halo orbit around the **Lagrange point 1 (L1)**, around **1.5 million km** from the Earth, of the Sun-Earth system.
- The mission has a life **of five years** during which its payloads are expected to provide the information to understand the phenomenon of
 - Coronal heating; coronal mass ejection; pre-flare and flare activities and their characteristics;
 - Dynamics of space weather; and propagation of particles and fields.
- It is equipped with seven payloads** (instruments) on board with four of them carrying out remote sensing of the Sun and three of them carrying in-situ observation.

What are the seven payloads?

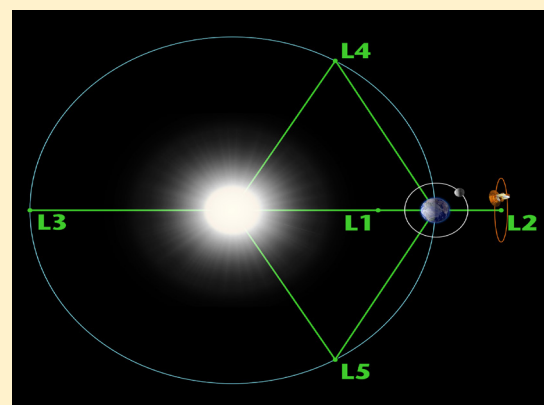
- The Visible Emission Line Coronagraph (VELC)** will study the Corona, imaging and spectroscopy, and Coronal mass ejections.
- The Solar Ultraviolet Imaging Telescope (SUIT)** will focus upon the Photosphere and Chromosphere imaging- narrow and broadband. It will also measure the solar irradiance variations.
- The Solar Low Energy X-ray Spectrometer (SoLEXS)** and **High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)** will study the soft and hard X-ray flares from the Sun over a wide X-ray energy range.
- The Aditya Solar wind Particle Experiment (ASPEX)** and **Plasma Analyser Package For Aditya (PAPA)** will analyze the electrons and protons in the Solar wind or particles. It will also study the energetic ions.

- The Advanced Tri-axial High Resolution Digital Magnetometers** will study the interplanetary magnetic field at L1 point.



What is a Lagrange Point?

- Lagrange points** are positions in space where objects sent there tend to stay put. At Lagrange points, the gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them.
- Lagrange points are named in honor of **Italian-French mathematician Joseph-Louis Lagrange**.
- There are five Lagrange points, three are unstable and two are stable. The unstable Lagrange points are labeled L1, L2 and L3. The stable Lagrange points are labeled L4 and L5.
 - These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.
- The L1 point** of the Earth-Sun system affords an uninterrupted view of the sun.
- There are currently **four operational spacecraft** at L1 which are WIND, Solar and Heliospheric Observatory (SOHO), Advanced Composition Explorer (ACE) and Deep Space Climate Observatory (DSCOVER).



Source: TH

NCDC SURVEY OF USAGE OF ANTIBIOTICS

Context

- The National Centre for Disease Control (NCDC) conducted a survey of antibiotics use across 15 States and two Union Territories.

Key findings

- Out of **11,588 admissions** and 9,652 eligible patients, 72% were prescribed antibiotics.
 - Of these, only 45% were prescribed antibiotics for therapeutic indications, meant to treat infection or disease.
 - The remaining 55% were prescribed the drugs for prophylactic indications, meant to prevent the occurrence or spread of an infection.
- Only **6%** were prescribed antibiotics after a confirmed diagnosis of the specific bacteria causing their illness, called **definitive therapy**.
- The remaining **94%** were prescribed based on the doctor's clinical experience in assessing the likely cause of an illness, called **empirical therapy**.
- Using the **WHO's Access, Watch and Reserve (AWaRe)** classification, it was found that
 - Only **38%** of the prescriptions belonged to the Access group,
 - 57%** of the prescriptions were belonging to the Watch group,
 - 2%** of the antibiotics prescribed were from the Reserve group.

AWaRe classification of antibiotics

- The AWaRe classification is intended as a tool for monitoring antibiotic consumption, defining targets and monitoring the effects of stewardship policies that aim to optimize antibiotic use and curb antimicrobial resistance.
- It was developed in **2017** by the **WHO** Expert Committee.
- Antibiotics are classified into three groups, **Access, Watch and Reserve**. It is updated every 2 years.
 - The Access group** offers the best therapeutic value, while minimizing the potential for resistance.
 - The Watch group** is indicated for a specific, limited number of infective syndromes and are more prone to be a target of antibiotic resistance. These antibiotics have a higher potential to develop antibiotic resistance.
 - The Reserve group** of drugs are used as a last resort.

What is Antimicrobial Resistance?

- Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.

Source: *TH*

WETLAND CITY ACCREDITATION SCHEME

Context

- India has nominated **Indore, Bhopal and Udaipur** for the **Wetland City Accreditation (WCA) scheme** under the **Ramsar Convention**.

About

- These are the **first three Indian cities nominated for WCA** based on the proposals received from state wetlands authorities in collaboration with municipal corporations.
- Sirpur Wetland (Indore), Yashwant Sagar (Indore), Bhoj Wetland (Bhopal)**, and several wetlands in and around **Udaipur** are lifelines to these cities.
- This will **provide an opportunity for cities that value their natural or human-made wetlands to gain international recognition**.

Wetland City Accreditation scheme:

- The Wetland City Accreditation scheme is an **ongoing program** administered by the **Ramsar Convention on Wetlands**.
- The scheme was implemented in 2015** under **Resolution XII.10** adopted by the Conference of the Contracting Parties to the Ramsar Convention (**COP12**).
- Purpose:** To recognize and honor cities demonstrating outstanding efforts in protecting and managing their urban wetlands.
- Significance:**
 - This **voluntary scheme provides an opportunity for cities that value their natural or human-made wetlands** to gain international recognition and positive publicity for their efforts.
 - The scheme **will encourage cities in close proximity to and dependent on wetlands, to highlight and strengthen a**

positive relationship with these valuable ecosystems.

- ♦ The Accreditation scheme should **further promote the conservation and wise use of urban and peri-urban wetlands**, as well as sustainable socio-economic benefits for local people.
- Overall, **43 cities in the world are accredited as wetlands cities under Ramsar Convention**.
 - ♦ Of these **18 were accredited in 2018 and 25 in 2022**. However, **India is yet to make it to the prestigious list**.



Sirpur Lake

- **Indore is home to the Sirpur Lake** – an **Important Bird and Biodiversity Area (IBA)** of the country as declared by the **Bombay Natural History Society (BNHS)** in 2017.
- Commonly named **Pakshi Vihar (bird sanctuary)**, the Site is a shallow, alkaline, nutrient-rich lake.

Bhoj Wetland

- **Bhopal** is called the **'city of lakes'** for its numerous water bodies, most important among them is the **'Bhoj Wetland'**, which was **declared a 'Ramsar Site' in 2002**.
- Bhoj Wetland comprises **upper and lower lakes**. The Upper Lake is a manmade lake created in the **11th century** by the construction of an earthen dam across the **Kolans River**, and the Lower Lake was constructed nearly 200 years ago, largely from the overflow of water from the Upper Lake.
 - ♦ The Upper Lake is surrounded by **Van Vihar National Park** on the south, human settlements on the east and north, and agriculture fields on the west.
- Bhoj Wetland is also equipped with the world-class **wetlands interpretation centre, Jal Tarang**.

Udaipur in Rajasthan:

- It is surrounded by five major wetlands -- **Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai**.
- These wetlands are an **integral part of the city's culture and identity**, helping maintain the city's microclimate and providing a buffer from extreme events.

About the Ramsar Convention

- **Signed on:** February 2, 1971, in **Ramsar, Iran**.
 - ♦ It is one of the oldest inter-governmental accords signed to **preserve the ecological character of wetlands of international importance**.
- **Contracting Parties:** 172
- **Aim:** To **develop and maintain an international network of wetlands that are important for the conservation of global biological diversity** and for sustaining human life through the maintenance of their ecosystem components, processes and benefits.
- **Criteria:** To be Ramsar site, however, it must meet at least **one of nine criteria** as defined by the Ramsar Convention, such as:
 - ♦ Supporting vulnerable, endangered, or critically endangered species or
 - ♦ Threatened ecological communities or,
 - ♦ If it regularly supports 20,000 or more waterbirds or,
 - ♦ Is an important source of food for fishes, spawning ground, and nursery and/or migration path on which fish stocks are dependent upon, etc.
- Global Ramsar Sites:
 - ♦ **The United Kingdom (175) and Mexico (142)** — smaller countries than India — have the maximum Ramsar sites.
 - ♦ **Bolivia spans the largest area** with 148,000 sq km under the Convention protection.
- Ramsar sites in india:
 - ♦ India's Ramsar wetlands are spread over **11,000 sq km — around 10% of the total wetland area** in the country — across **18 States**.
 - ♦ **Tamil Nadu has the maximum number of Ramsar sites (14), followed by UP** which has 10 Ramsar sites.

Source: **LM**

NEWS IN SHORT

DIRECT TO CELL SATELLITE

In News

- Elon Musk's SpaceX launched its first batch of Starlink satellites with direct-to-cell capability aboard the Falcon 9 spacecraft.
 - ♦ A total of 21 Starlink satellites were sent into **low-Earth orbit** from Space Launch Complex 4 East (SLC-4E) at Vandenberg Space Force Base in California.

About Satellites

- The mission incorporated the deployment of the initial **six Starlink satellites equipped with Direct-to-Cell capabilities**.
- They have advanced modems onboard, known as **eNodeBs**.
 - ♦ These modems are similar to cell phone towers but operating in space.
- It allows Starlink to deliver direct satellite broadband connectivity on smartphones anywhere on the planet.
- It will also connect internet of things (IoT) devices with common LTE mobile standards.
- **Benefits :** It is expected to address challenges related to geographical features that typically hinder the provision of internet services.
 - ♦ It will enable mobile network operators around the world to provide seamless global access to texting, calling, and browsing wherever you may be on land, lakes, or coastal waters."

Source: **LM**

POLYGRAPH TEST

Context

- Five of the six accused arrested in connection with the Parliament security breach consented to a polygraph test.

What is the Polygraph Test?

- The Polygraph Test is commonly known as a **lie detector test**.
- It is based on the assumption that physiological responses (heartbeat, changes in breathing, sweating, etc.) triggered when a person is lying are different from what they would be otherwise.

- **Instruments** like cardio-cuffs or sensitive electrodes are attached to the person, and variables such as blood pressure, pulse, blood flow, etc., are measured as questions are put to them.
- A numerical value is assigned to each response to conclude whether the person is telling the truth, is deceiving, or is uncertain.

Are the results of the tests admissible as evidence?

- In 'Selvi & Ors vs State of Karnataka & Anr' (2010) the Supreme Court said,
- that the results of the tests cannot be considered to be "confessions".
- However, any information or material subsequently discovered with the help of such a voluntarily-taken test can be admitted as evidence.

Source: **TH**

INDIA- MAURITIUS SPACE COOPERATION

Context

- The Union Cabinet has approved the MoU between the Indian Space Research Organisation (ISRO) and the Mauritius Research and Innovation Council (MRIC) concerning cooperation on the development of a joint small satellite.

India- Mauritius Space Cooperation

- **Background:** In 1980s ISRO established a ground station in Mauritius for tracking and telemetry support for ISRO's launch vehicle and satellite missions, under a country-level agreement signed in 1986 for this purpose.
- **Current Programme:** MoU will establish a framework for cooperation between ISRO and MRIC on the development of a joint satellite as well as for cooperation on the use of the MRIC's Ground Station.
 - ♦ The satellite realization is proposed to be completed in a 15 months time frame.

Mauritius

- Mauritius, is an island country in the **Indian Ocean**, located off the eastern coast of Africa. It is a part of the **Mascarene Islands**.
- **Capital:** Port Louis

- **Major rivers:** Grand River South East and Black River.
- **Lake Vacoas**, is one of the main reservoirs, and is the chief source of water.



Source: **PIB**

MOU BETWEEN INDIA AND GUYANA

Context

- The Union Cabinet has approved the signing of MoU between India and Republic of Guyana on cooperation in the hydrocarbon sector.

About

- The MoU covers the complete value chain of hydrocarbon sector including the;
 - ♦ Sourcing of crude oil from Guyana,
 - ♦ Participation of Indian companies in Exploration and Production (E&P) sector of Guyana,
 - ♦ Cooperation in the areas of crude Oil refining, capacity building, Strengthening bilateral trade,
 - ♦ Collaboration in the natural gas sector, collaboration in developing regulatory policy framework in the oil & gas sector in Guyana;
 - ♦ Cooperation in the area of clean energy including biofuels as well as renewables sector including solar energy etc.
- **Significance:** As per BP Statistical Review of World Energy 2022, India is the world's 3rd largest energy consumer, 3rd largest consumer of oil and 4th largest refiner.
 - ♦ The partnership ensures energy access, availability, affordability to citizens underpinned by energy security of the country.

Guyana

- **Location:** Guyana, is located in the northeastern corner of South America.
- **Bordering Nations:** Guyana is bordered by the **Atlantic Ocean** to the north, by **Suriname** (along the Courantyne River) to the east, by **Brazil** to the south and southwest, and by **Venezuela** to the west.
- **Major rivers:** Courantyne, Berbice, Demerara, and Essequibo.
- **Oil reserves:** Guyana has gained significant salience in the oil & gas sector with the new discoveries of 11.2 billion barrels of oil equivalent, amounts to 18% of total global Oil & Gas discoveries.



Source: **PIB**

'PRITHVI' FOR EARTH OBSERVATION

Context

- The Union Cabinet cleared '**PRITHVI**' Programme for **earth observation, satellite project with Mauritius**.

PRITHvi Vlgyan (PRITHVI) Programme

About:

- It **encompasses five ongoing sub-schemes** of the **Ministry of Earth Sciences (MoES)**, like:
 - ♦ Atmosphere & Climate Research-Modelling Observing Systems & Services (ACROSS);
 - ♦ Ocean Services, Modelling Application, Resources and Technology (O-SMART);
 - ♦ Polar Science and Cryosphere Research (PACER);
 - ♦ Seismology and Geosciences (SAGE); and,
 - ♦ Research, Education, Training and Outreach (REACHOUT)

Objectives:

- Augmentation and sustenance of long-term observations of the atmosphere, ocean, geosphere, cryosphere and solid earth to record the vital signs of the Earth System and change;
- Development of modelling systems for understanding and predicting weather, ocean and climate hazards and understanding the science of climate change;
- Exploration polar and high seas regions of the Earth towards discovery of new phenomena and resources;

Significance

- PRITHVI promises to unify various disciplines under Earth sciences, fostering integrated, multidisciplinary research. This collaborative effort aims to address significant challenges in weather, climate, oceanography, cryospheric studies, seismology, and sustainable resource utilization.

Do you know?

- **The Ministry of Earth Sciences (MoES)** is mandated to translate **Science to Services for the Society** in providing services for weather, climate, ocean and coastal state, hydrology, seismology, and natural hazards;
- It is also mandated to explore and harness marine living and nonliving resources in a sustainable manner for the country and to explore the three **poles of the Earth (Arctic, Antarctic and Himalayas)**.
- **Earth System Sciences** deal with all the five components of the earth system: **atmosphere, hydrosphere, geosphere, cryosphere, and biosphere and their complex interactions**.

Additional Information

- **Satellite for Mauritius:** The Union Cabinet approved an agreement between the Indian Space Research Organisation (**ISRO**) and Mauritius Research and Innovation Council (**MRIC**) to jointly develop a '**small satellite**'.

- India and Mauritius have a history of cooperation **since the 1980s** when ISRO established a **ground station in Mauritius** for **tracking and telemetry support for ISRO's launch vehicle and satellite missions**.

Source: **TH**

PROJECT VEER GATHA 3.0**News:**

- The **third edition of Project 'Veer Gatha'**, as part of Republic Day celebrations, has witnessed an overwhelming pan India response.

About

- Project Veer Gatha 3.0 introduced a **range of thought-provoking topics for essay and paragraph writing**.
 - ♦ Students were encouraged to delve into the **life stories of any freedom fighter that inspired them such as Rani Laxmibai**.
 - ♦ The suggested topics also included the **1857 First War of Independence**, and the **significant role of Tribal Uprising in the Freedom Struggle**.

Project Veer Gatha

- It is a **joint initiative of the Ministry of Defence and Ministry of Education**.
- **Launched on:** July 13, 2023, as **part of 'Azadi Ka Amrit Mahotsav'**.
- The initiative is aimed at **disseminating the details of acts of bravery of the Gallantry awardees and the life stories of these bravehearts** among the students so as to raise the spirit of patriotism and instill values of civic consciousness amongst them.

Source: **PIB**