

CURRENT AFFAIRS

WEEKLY

WEEK: 5
OCTOBER
2023

MAINS

- GS- I**
- Malnutrition prevalent amongst tribal population
 - Earth-like tectonic plates on ancient 'Venus' can explain its atmosphere

- GS- II**
- India abstains over 'Hamas matter' on UNGA resolution
 - India-Qatar trade relations
 - AI safety summit
 - G7 trade ministers meeting
 - SC's observation on using parent's gametes for surrogacy
 - Can universal basic income tackle India's poverty?

- GS- III**
- Lewis model for India
 - The Indian railways' revenue problem
 - IEA world energy outlook 2023
 - World on brink of 'six' interconnected risk tipping points: UN report
 - West Antarctic warming
 - India's first district-level study on hypertension

SPECIALS

- SC hearing on 'Electoral Bonds' Case

PRELIMS

- ART & CULTURE**
- Kathaprasangam
- INTERNATIONAL RELATIONS**
- Saima Wazed to become WHO regional Director for South East Asia
- POLITY & GOVERNANCE**
- 7th Edition of the India Mobile Congress (IMC)
 - 'Mera Yuva Bharat (MY Bharat)' platform
- ECONOMY**
- India begins producing 'reference' fuel
- State Food Safety Index (SFSI) 2023 Report**
- Centre to depute 'National level monitors' to oversee livestock schemes
- SCIENCE AND TECHNOLOGY**
- Ejecta halo
 - Dark pattern sales deemed 'cybercrime'
 - Haemoglobin isn't used only in blood: Study
 - 'Carbon Nanoflorets' for Efficient Heat Conversion
- MISCELLANEOUS**
- Rohini Nayyar Prize

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- Asia-Pacific Economic Cooperation
- Mizoram has the highest rate of cancer in India
- First cases of avian flu found in Antarctic region
- Nanophotonic Electron Accelerator (NEA)
- India France Bilateral Naval Exercise 'Varuna' – 2023
- Candolleomyces albosquamosus
- Global Declaration for River Dolphins
- Norman Pritchard
- Aralam Wildlife Sanctuary
- Kra Isthmus
- Amazon Pink river dolphins
- Curcuma kakchingense

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— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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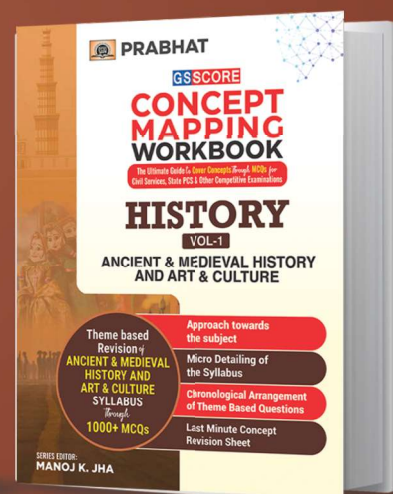
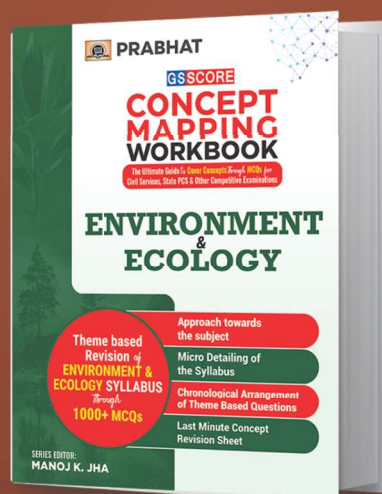
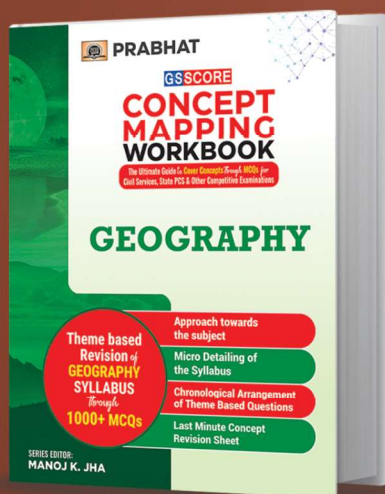
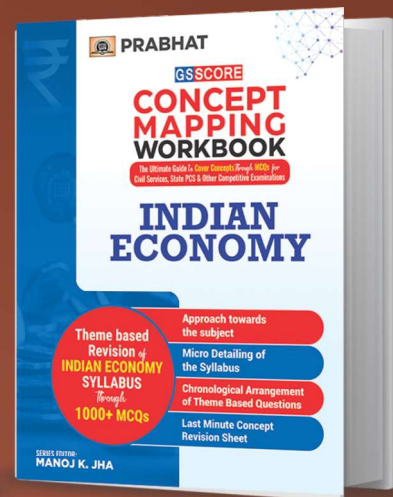
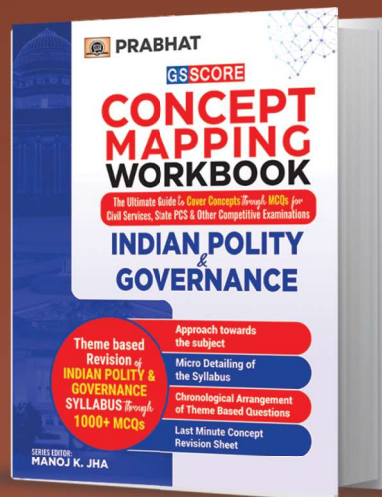
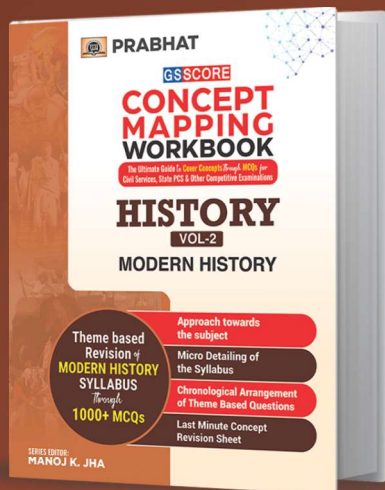
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Section A [MAINS]

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- ☞ Earth-like tectonic plates on ancient 'Venus' can explain its atmosphere
- ☞ India abstains over ' Hamas matter' on UNGA resolution
- ☞ India-Qatar Trade Relations
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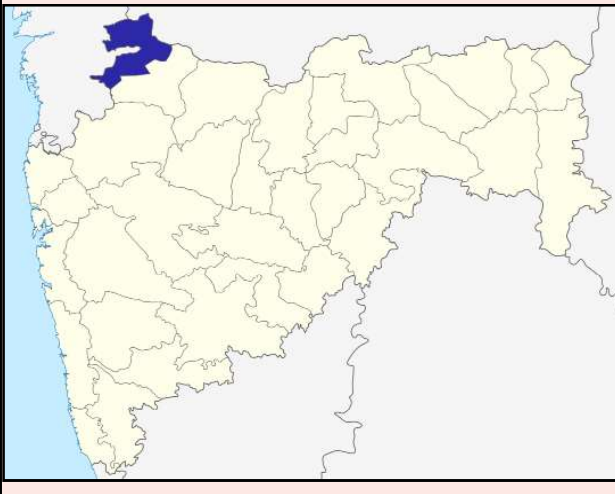
MALNUTRITION PREVALENT AMONGST TRIBAL POPULATION

Context: As per the recent findings, Maharashtra's Nandurbar district has lack of crucial digital weighing machines, which helps to assess malnutrition in infants, pregnant women and new mothers.

◆ The issue of lack of weighing scales in the district was highlighted in September by the government-appointed **Tribal Project Core Committee**.

Nandurbar:

- Nandurbar district is an administrative district in the northwest corner of **Maharashtra state in India**.
- On **1 July 1998**, Dhule was bifurcated as two separate districts now known as **Dhule and Nandurbar**.
- Nandurbar is a **tribal-dominated** district.



Findings of the data:

- ◆ **Integrated Child Development Services (ICDS)**, a government programme that provides health and education services to children under the age of six and their mothers which shows that;
 - ▶ Around 2,094 (or 1.14%) of the 1,82,318 children screened in Nandurbar in June were found to have **Severe acute malnutrition (SAM)** and;
 - ▶ 14,347 (or 7.87%) **Moderate Acute Malnutrition (MAM)** – both conditions that have serious consequences, including mortality and impaired intellectual development.
- ◆ Between April 2019 and March 2020, 768 children under the age of five died in the district.

▶ The number dipped to 694 in 2020-21, only to rise to 779 in 2021-22 and to 812 in 2022-23.

- ◆ ASHA workers at **PHCs and sub-centres** are also required to weigh pregnant women, new mothers and new-borns up to six weeks after delivery to assess their overall health and nutritional status and ensure appropriate interventions if malnutrition is detected.

WHAT IS MALNUTRITION?

The World Health Organisation (WHO) defines malnutrition as deficiencies, excesses or imbalances in one's intake of nutrients

MALNUTRITION FALLS UNDER TWO CATEGORIES:

1 Severe Acute Malnutrition (SAM)
It is defined by:

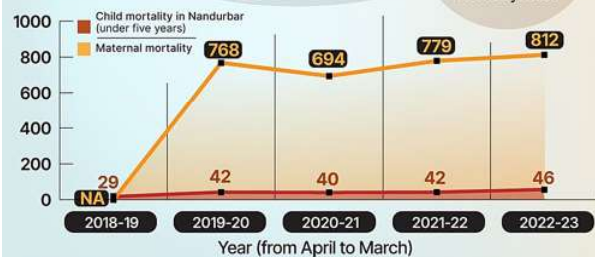
- Very low weight-for-height
- Mid-upper arm circumference (MUAC) of less than 115 mm
- Presence of nutritional oedema (characterised by a swollen face, feet and limbs)

2 Moderate Acute Malnutrition (MAM) or 'wasting': It is defined by:

- MUAC greater or equal to 115 mm and less than 125 mm



ALARMING NUMBERS
Maharashtra's Nandurbar is infamous for high child and maternal mortality rates



*Source: Integrated Child Development Services (ICDS)

Graphic: IE Design

What is the issue?

- ◆ The issue is **lack of weighing machines** which is required to take the weights of pregnant mothers, new mothers, new born babies and children under 3 years of age.
 - ▶ Weighing machines provides accurate picture of outcomes which are intended to achieve by minimising the prevalence of maternal mortality, infant mortality and other nutritional support under ICDS etc.
- ◆ The **World Health Organisation (WHO)** recommends the use of digital weighing scales for monitoring maternal and infant health.
- ◆ With a population of nearly **16 lakh**, of which 70 per cent are from tribal communities, **Nandurbar ranks the lowest in the state on the Human Development Index** — a statistical measure of key dimensions of human development, including life expectancy.

- ◆ The scales are required to weigh **infants, children and pregnant women** and this data is used by **Anganwadi and ASHA workers** to provide nutritional support.

Challenges posed by the issue:

- ◆ The risk of a new-born being malnourished is higher if the mother is malnourished during pregnancy.
 - ▶ A mother's nutritional status directly impacts the developing **foetus**.
- ◆ Inadequate maternal nutrition can lead to low birth weight, preterm birth and other health complications for the baby.
- ◆ ASHA workers say monitoring pregnant women is important since maternal deaths are on the rise in the district.

- According to ICDS data, Nandurbar saw **29 maternal deaths** between April 2018 and March 2019.
- The number shot up to 42 in 2019-20, followed by a slight drop to **40 in 2020-21**, before rising to 42 in 2021-22 and touching 46 in 2022-23.



Context: A New research suggests that Earth's sister planet' Venus' may have been home to microbial life billions of years ago due to tectonic activities.

Venus and Plate Tectonics:

- ◆ Venus, often referred to as Earth's sister planet, may have experienced tectonic activity about **4.5 billion to 3.5 billion years ago**.
- ◆ Plate tectonics may have been instrumental in creating its **carbon dioxide-** and **nitrogen-rich** atmosphere on Venus.
- ◆ The planet's atmospheric composition is mainly composed of **Carbon dioxide (96.5 per cent)** and **Nitrogen (less than 3.5 per cent)**.

Plate Tectonics:

- Plate tectonics is a scientific theory that describes how Earth's thin outer shell is broken into big pieces called tectonic plates, which float on the planet's mantle.
- Plate tectonics gave rise to oceans, continents and mountains, along with playing a critical role in nourishing life on Earth.

Recent Findings on Venus:

- ◆ **Life on Venus:** The ancient Venus may have been home to microbial life due to tectonic activities and similar to the Earth.
- ◆ **Halt of tectonic movement:** The plate tectonics would have likely ended on Venus after it lost water and its atmosphere got too hot and thick. This process may have dried up the necessary ingredients that make tectonic movements possible.
- ◆ **Stagnant lid model:** Venus may have transitioned from limited tectonic movement early in its history to the stagnant lid model that exists today.
 - ▶ A stagnant lid means its surface has only a single plate with minimal amounts of movement to release gases into the atmosphere.
- ◆ **Plate Tectonics and Planet's habitability:** According to Researchers, the planets may transition in and out of different tectonic states.
 - ▶ This also means we might have planets that transition in and out of habitability rather than just being continuously habitable.

Way Forward:

- ◆ The researchers are hopeful that the **National Aeronautics and Space Administration's** upcoming mission to Venus, **DAVINCI**, may provide some clues and confirm the study's findings. They also plan to understand how Venus lost its plate tectonics.
- ◆ The studies will also help in understanding the evolution of planet Venus and Earth, in terms of their understanding of their interiors and how plate tectonics have altered their atmosphere making the planets habitable.

Facts related to Venus:

- It is the second planet from the Sun and sixth in the solar system in size and mass.
- The longest rotation of any planet in the Solar System – and only **224.7 Earth days** to complete an orbit of the Sun.
- The mean **temperature is 462°C**. This is because of the high concentration of **carbon dioxide** in Venus' atmosphere, which works to produce an **intense greenhouse effect**.
- Venus has 90 times the **atmospheric pressure** of Earth.

India's Venus Mission:

- ◆ Recently, Indian Space Research Organization (ISRO) has announced that it is expecting to launch the **Venus mission** by December 2024.
- ◆ The aim of the mission is to study Venus' atmosphere, which is toxic and corrosive in nature as clouds of sulfuric acid cover the planet.

Inside Planet VENUS

Venus is often visible to the naked eye in the morning and evening sky. It has often been called Earth's "twin" because of its similar size, but space probes have discovered that the environment there is actually quite inhospitable.

THICK ATMOSPHERE
96.5% carbon dioxide,
3.5% nitrogen plus
trace gases

GRAVITY 0.9 OF EARTH

EARTH 10ft dunk
VENUS 11ft dunk

SURFACE CONDITIONS
AIR PRESSURE: 90x Earth
TEMPERATURE: 870°F (465°C)
WINDS: up to 220 mph (100 m/s)

The surface of Venus photographed by a Russian probe in 1982

METAL CORE It is not known if Venus' core is solid. Unlike Earth, Venus' weak magnetic field is not produced by a dynamo in the core.

Venus, 7,520 mi (12,100 km) in diameter, is slightly smaller than Earth

SOURCE: NASA
KARL TATE, SPACE.com

What are the Key Objectives of the Mission?

- ◆ Investigation of surface process and shallow subsurface stratigraphy.
- ◆ Until now, no prior observation of the sub-surface of Venus has been done.
- ◆ Stratigraphy is a branch of geology in which rock layers and layering are studied.
- ◆ Study of the structure, composition and dynamics of the atmosphere.
- ◆ Investigation of Solar wind interaction with Venusian ionosphere.

INDIA ABSTAINS OVER 'HAMAS MATTER' ON UNGA RESOLUTION

Context: India has abstained in the UN General Assembly on a resolution that called for an immediate humanitarian truce in the Israel-Hamas conflict leading to a cessation of hostilities.

About the UN General Assembly resolution on Israel-Hamas truce:

- ◆ The resolution called for unhindered humanitarian access into the **Gaza Strip**.

◆ Objective:

- ▶ The Jordanian-drafted resolution called for an **immediate, durable and sustained humanitarian** truce leading to a cessation of hostilities.
- ▶ It also demanded the immediate, continuous, sufficient and unhindered provision of essential goods and services to civilians throughout the Gaza Strip, including but **not limited to water, food, medical supplies, fuel and electricity.**

◆ The **193 members** of the UN General Assembly (UNGA), which met in a resumed **10th Emergency Special Session**, voted on the draft resolution submitted by **Jordan and co-sponsored by more than 40 nations** including Bangladesh, Maldives, Pakistan, Russia and South Africa.

◆ The resolution titled "**Protection of civilians and upholding legal and humanitarian obligations**" was overwhelmingly adopted with;

- ▶ **120 nations** voting in its favour,
- ▶ **14 against** it and
- ▶ 45 abstaining.

◆ Besides India, countries that abstained included **Australia, Canada, Germany, Japan, Ukraine and the UK.**

◆ Demands:

- ▶ The draft resolution also demanded humanitarian access for the International Committee of the Red Cross and all other humanitarian organisations.
- ▶ The resolution demanded that **all parties** immediately and fully comply with their obligations under international law, including **international humanitarian law and international human rights law**, particularly regarding the protection of civilians and civilian objects, as well as the protection of humanitarian personnel and to facilitate humanitarian access for essential supplies and services to reach all civilians in need in the Gaza Strip.

The United Nations (UN) General Assembly

- ◆ The United Nations General Assembly (UNGA) is the main deliberative and policy-making organ of the UN, where all member states have equal representation.
- ◆ The process of voting on resolutions in the UNGA involves several key steps:
 - ▶ **Submission of Draft Resolutions:** Member states can submit draft resolutions on various international issues. These resolutions can cover a wide range of topics, from human rights and humanitarian affairs to economic and social development.

- ▶ **Consideration in Committees:** Many resolutions are first considered in specialized committees (such as the First Committee on Disarmament and International Security or the Third Committee on Social, Humanitarian, and Cultural Affairs). These committees review and may amend the draft resolutions before sending them to the General Assembly.
- ▶ **Plenary Session:** The draft resolutions that have been approved by the committees are then presented for consideration in the plenary session of the General Assembly.
- ▶ **Debate and Discussion:** During the plenary session, member states have the opportunity to discuss and debate the draft resolutions. This allows for the expression of various perspectives and concerns.
- ▶ **Voting Process:** When the debate concludes, a formal vote is called. Each member state has one vote. In most cases, decisions are made by a two-thirds majority, unless specified otherwise. Some issues, such as budgetary matters, require a simple majority.
- ▶ **Recording of Votes:** The votes of member states are recorded in the official records of the General Assembly. This transparency helps to maintain accountability.
- ▶ **Adoption of Resolutions:** If the resolution receives the required majority, it is adopted. The resolution becomes an official statement of the General Assembly's position on the specific issue.
- ▶ **Implementation and Follow-up:** Member states are expected to implement the resolutions they have adopted. The UN Secretariat and relevant agencies may also be tasked with monitoring progress and providing support for implementation.
- ▶ **Review and Revisions:** Over time, member states may review and, if necessary, revise resolutions to reflect changing circumstances or evolving international norms.



INDIA-QATAR TRADE RELATIONS

Context: The death sentence to eight Indian Navy personnel strains India-Qatar ties as India's Liquefied Natural Gas (LNG) imports forms 50% of the total natural gas imports of India.

India's Gas import dependency:

- ◆ India's total imports from Qatar in FY2022-23 were valued at 16.81 billion dollars, of which LNG imports

alone were worth 8.32 billion dollars, or **49.5%**, an analysis of official trade data shows.

- ◆ India's other major imports from Qatar are also **fossil fuel-linked commodities and products, such as liquefied petroleum gas (LPG), plastics, and other petrochemicals.**

Government-owned **Petronet LNG**, India's largest LNG importer, has a long-term contract with Qatar for the import of **8.5 million tonnes per annum (mtpa)** of LNG.

- ◆ Whereas, India's exports to Qatar were valued at just 1.97 billion dollars in **FY2022-23.**
- ◆ The major exports include **cereals, copper articles, iron and steel articles, vegetables, fruits, spices, and processed food products.**

Qatar's Significance for India:

- ◆ **The Indian Diaspora:** There are over **800,000 Indian** nationals residing in Qatar.
 - ▶ They comprise the **largest expatriate community** in Qatar and are engaged in a wide spectrum of professions including medicine; engineering; education, finance; banking; business; and media apart from a large number of **blue-collared workers.**
- ◆ **Imports and Exports:** Qatar's key exports to India include **LNG, LPG, chemicals and petrochemicals, plastics, and aluminium articles.**
 - ▶ While India's key exports to Qatar include cereals, copper articles, iron and steel articles, vegetables, fruits, spices, and processed food products, electrical and other machinery, plastic products, construction material, textiles & garments, chemicals, precious stones and rubber.
 - ▶ India is among the **top three largest export destinations** for Qatar (China and Japan being the other two) and is also among the top three sources of Qatar's imports, along with China and US.
- ◆ **Defense ties:**
 - ▶ India offers training slots in its defence institutions to a number of partner countries, including Qatar.
 - ▶ India regularly participates in the **biennial Doha International Maritime Defence Exhibition and Conference (DIMDEX) in Qatar.**
 - ▶ Indian Naval and Coast Guard ships regularly visit Qatar as part of our bilateral cooperation and interaction.

India-Qatar Defence Cooperation Agreement, signed during the PM's visit to Qatar in November 2008, and further extended for a period of five years in November 2018.

- ◆ **Geostrategic significance:**
 - ▶ **GCC Membership:** Qatar's membership in the **Gulf Cooperation Council (GCC)** is strategically significant for India, especially concerning **issues like Kashmir.**
 - ▶ **UNSC Support:** India's bid for a permanent seat at the United Nations Security Council requires support from countries **like Qatar.**

Concerns for India-Qatar Relations:

- ◆ **Religious Controversy:** In June 2022, a controversy involving derogatory remarks about the Prophet on a TV show led to tension between India and Qatar.
 - ▶ Qatar demanded a public apology, which India addressed by swiftly sacking the individual responsible.
- ◆ **Recent shift-overs:** The imprisonment of the eight ex-Navy personnel constitutes the second significant challenge.
 - ▶ It took India by surprise in a country where a large Indian expatriate community resides, making India-Qatar relations a sensitive issue.

Conclusion

- ◆ The detention and sentencing of eight Indian nationals in Qatar have posed a complex diplomatic challenge for India. Against the backdrop of India-Qatar relations, this incident underscores the importance of navigating cultural sensitivities and geopolitical dynamics to secure the release of these individuals.



AI SAFETY SUMMIT

Context: Recently, the US President Joe Biden has issued an order to set rules for artificial intelligence (AI). This move follows the UK Prime Minister's AI Safety Summit, showing a global effort to regulate AI.

About the order:

- ◆ USA has signed an order using the **Defense Production Act**, usually reserved for emergencies like the **Covid-19 pandemic**, to regulate AI companies.
- ◆ This requires them to inform the government about technologies affecting **national security and share safety test results.**

- ◆ The order also calls for Congress to **pass privacy legislation** and provides guidelines to prevent AI from causing discrimination.
- ◆ It encourages AI use in education, although specific details are not provided.
- ◆ The administration aims to build a strong international framework for AI, consulting with countries like **India, the EU, the UK, Japan**, and more, aligning with global efforts in AI regulation.

India's effort for AI regulation:

- ◆ With the G20 Summit to be held in New Delhi, the Prime Minister Narendra Modi's call for a global framework on the expansion of "ethical" artificial intelligence (AI) tools aims at taking a leadership position on the evolving debate over the need for convergence amongst all countries on regulating sectors such as AI and cryptocurrencies.
- ◆ **Telecom Regulatory Authority of India (TRAI)** in July, which said that the Centre should set up a domestic statutory authority to regulate AI in India through the lens of a "risk-based framework", while also calling for collaborations with international agencies and governments of other countries for forming a global agency for the "responsible use" of AI.

Tech major 'Microsoft', which has a stake in OpenAI, had floated a blueprint for AI governance in India.

Present Regulations for AI in India:

- ◆ **Information Technology Act, 2000:** The Information Technology Act, 2000 (IT Act) serves as the fundamental legislation governing electronic transactions and digital governance.
 - ▶ Although it does not explicitly mention AI, specific provisions within the Act are applicable to AI-related activities.
 - ▶ Section 43A of the IT Act enables compensation in case of a breach of data privacy resulting from negligent handling of sensitive personal information.
 - ▶ This provision is particularly relevant in the context of AI systems that process user data. Another provision is Section 73A of this act.
- ◆ **National e-Governance Plan:** The National e-Governance Plan aims to digitally empower Indian society by providing online government services.
 - ▶ AI plays a vital role in enhancing the efficiency and accessibility of e-governance. Various government

departments have integrated AI systems to automate processes, improve decision-making, and enhance citizen services.

- ◆ **AIRAWAT:** Recently, NITI Aayog (planning commission of India) also launched **AIRAWAT**, which stands for **AI Research, Analytics, and Knowledge Assimilation platform**.
 - ▶ It considers all the necessary requirements of AI in India.



G7 TRADE MINISTERS MEETING

Context: Recently, the Union Minister of Commerce and Industry participated in the G7 (Group of Seven) Trade Ministers Meeting in Osaka, Japan.

Key Highlights of the Meeting:

- ◆ **Supply Chain Resilience:** India made an important intervention on the topic of Enhancing Supply Chain Resilience and gave several suggestions on the issue.
 - ▶ India also mentioned that the **COVID 19 pandemic** and the geo-political events highlighted the vulnerabilities of the existing supply chains leading to increase in commodity prices and global Inflation.
 - ▶ India urged the governments to collaborate on a regulatory framework to ease the movement of supply chains and facilitate cross border trade.
- ◆ **Generic Framework for Mapping of Global Value Chains:**
 - ▶ India also referenced the Generic Framework for Mapping of Global Value Chains mentioned in the New Delhi Declaration of the G20 to help member countries identify risks and enhance resilience in trade.
- ◆ **Encouragement of Public Private Partnership:** India encouraged Public-Private partnership,



investment in critical infrastructure and the need for innovation and digitalisation of the supply chains.

- ◆ **Free Trade Agreement (FTA):** On the sideline of the Meeting, India and the UK reviewed the progress of negotiations of the proposed **Free Trade Agreement (FTA)**, talks for which have reached the final stage.
 - ▶ These negotiations aim to address differences on issues such as Rules of Origin and the services sector.
 - ▶ Rules of Origin determine the national source of a product. Their importance is derived from the fact that duties and restrictions in several cases depend upon the source of imports.
 - ▶ The UK is looking for a significant reduction in import duties on goods like **automobiles, lamb meat, chocolates, and certain confectionery items.**
 - ▶ They also seek more opportunities for UK services in Indian markets, particularly in telecommunications, legal, and financial services.

- ◆ **Trade and Economic Partnership Agreement:** India also discussed with ministers from the European Free Trade Association (EFTA) member countries – **Switzerland, Norway, Iceland, and Liechtenstein** – to discuss the progress of the **Trade and Economic Partnership Agreement (TEPA).**

What is a Free Trade Agreement?

- ◆ It is a pact between **two or more nations** to reduce barriers to imports and exports among them.
- ◆ Under a free trade policy, goods and services can be bought and sold across international borders with little or no government tariffs, quotas, subsidies, or prohibitions to inhibit their exchange.
- ◆ The concept of free trade is the opposite of trade protectionism or economic isolationism.
- ◆ FTAs can be categorised as Preferential Trade Agreement, **Comprehensive Economic Cooperation Agreement.**

GROUP OF SEVEN (G7)

- It is an **intergovernmental organization** that was formed in 1975.
- The bloc meets annually to discuss issues of common interest like global economic governance, international security and energy policy.
- **Member Countries:**
 - ▶ The G7 countries are the UK, Canada, France, Germany, Italy, Japan and the US.
 - ▶ All the G7 countries and India are a part of G20.
- **Formal Charter/ Secretariat:** The G7 does not have a formal charter or a secretariat. The presidency, which rotates among member countries each year, is in charge of setting the agenda.
 - ▶ Sherpas, ministers and envoys hammer out policy initiatives before the summit.
- **Global Economic Trend:**
 - ▶ The G7 countries are important players in global trade. The US and Germany in particular are major export nations. Both sold goods worth well over a trillion US dollars abroad in 2021.
 - ▶ In 2022, the G7 countries held 30 % of the global Gross Domestic Product (GDP). In 2027, that figure is projected to drop to 28 %.

SC'S OBSERVATION ON USING PARENT'S GAMETES FOR SURROGACY

Context: Recently, the Supreme Court (SC) has protected the 'Right of parenthood of a woman', suffering from **Mayer Rokitansky Kuster Hauser (MRKH) syndrome** by interpreting the mandates under **Surrogacy (Regulation) Rules, 2022.**

About the Case:

- ◆ The petition was filed in the Supreme Court

challenging the amendment as a violation of a woman's right to parenthood.

Mayer Rokitansky Kuster Hauser (MRKH) syndrome:

- **Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome** is a rare congenital disorder that affects the female reproductive system.
- This condition is characterized by an **underdeveloped vagina and uterus.**
- The uterus may be small or absent and the vagina is typically shortened.

- ◆ According to paragraph 1(d) of the surrogacy rules in India, **'the intending couples'** must use **their own gametes for surrogacy.**

- ◆ However, as per the Medical board records the petitioner has "**absent ovaries and absent uterus**, hence **she cannot produce her own eggs/oocytes**".
- ◆ The couple had begun the process of gestational surrogacy, through a donor.

What is Surrogacy?

- ◆ Surrogacy is a form of third-party reproduction in which a woman consents to carry a pregnancy for **intended parent(s)** who cannot conceive for medical reasons or those who are a gay couple.
- ◆ There are two forms of surrogacy: **traditional surrogacy and gestational surrogacy**.
 - ▶ **Traditional surrogacy** uses the surrogate **mother's egg** for conception.
 - ▶ In contrast, gestational surrogacy is performed by **transferring embryos** made through IVF with eggs from the intended **mother or a donor**.

Situational argument against using parent's own gametes:

- ◆ **Rule 14(a) of the Surrogacy Rules** which listed the **medical or congenital conditions** owing to which a woman could choose to become a mother through gestational surrogacy.
- ◆ They included "**having no uterus or missing uterus or abnormal uterus (like hypoplastic uterus or intrauterine adhesions or thin endometrium or small unicornuate uterus, T-shaped uterus)** or if the uterus is surgically removed due to any medical condition such as **gynecological cancer**".

Argument against the present situation:

- ◆ The government argued that, the process of surrogacy cannot be availed under the law unless the child was "**genetically related**" to the intending couple.

Supreme Court's Views:

- ◆ Addressing the government's contention that the surrogate child should be "**genetically related**" to the couple, the court pointed out that the child would be related to the husband.
- ◆ In this regard, it may be noted that the expression '**genetically related**' to the intending couple has to be read as being related to the husband when **Rule 14(a) applies**.

Surrogacy rules in India:

- ◆ The **Surrogacy (Regulation) Bill, 2019** defines surrogacy as a practice where a woman gives birth to a child for an intending couple with the intention to hand over the child after the birth to the intending

couple. The important provisions of the Bill are as given below:

- ▶ **Regulation:** The Bill prohibits commercial surrogacy, but allows altruistic surrogacy.
- ▶ **Purpose:** Surrogacy is permitted when it is:
 - for intending couples who suffer from proven infertility
 - altruistic
 - not for commercial purposes
 - not for producing children for sale, prostitution or other forms of exploitation
 - for any condition or disease specified through regulations
- ◆ **Eligibility criteria:** To obtain a certificate of eligibility from the appropriate authority, the surrogate mother has to be:
 - ▶ a close relative of the intending couple
 - ▶ a married woman having a child of her own
 - ▶ 25 to 35 years old
 - ▶ a surrogate only once in her lifetime
 - ▶ possess a certificate of medical and psychological fitness for surrogacy
- ◆ Further, the surrogate mother cannot provide her own gametes for surrogacy.
- ◆ **Parentage:** A child born out of a surrogacy procedure will be deemed to be the biological child of the intending couple.

Is Surrogacy ethical?

- ◆ There had been many cases of death related to surrogacy which neither commissioning parents nor the doctors were ready to take responsibility of.
- ◆ Pregnancy and child birth may pose some medical risks to the mother, but a surrogate inherits these risks and others while the intended mother's or parents' health, especially in the case of male homosexual couples, is uncompromised.
- ◆ Sometimes, Indian adoption laws or citizenship laws of some other countries also create problems. For example, Germany gives citizenship by mother; this creates issues in determining the nationality of child.
- ◆ There were no strong laws for following issues such as rights of surrogate mother for fair compensation, maternal health care, right to abort etc.
- ◆ Commercial surrogacy arrangements involve a woman giving birth to a child that is not hers for money. Sometimes surrogacy is described as akin to "baby selling" or "womb renting," which in some ways is an accurate description.

- ◆ Homosexuals and single parents are not allowed to go for surrogate mothers.
- ◆ There had been few cases in which commissioning parents left surrogate mother because they did not like the surrogated child.
- ◆ There have been instances where poor girls and women were forced to become surrogate.
- ◆ There were no rules for medical insurance for issues that could arise in the pregnancy or later, and also the insurance to cover the child's upbringing if the surrogate mother is abandoned by the legal parents.
- ◆ The research states that clinics do not provide the mother with a copy of the contract that is signed by the adoptive parents. In order to escape social stigma, pregnant women often stayed in shelter homes that provided them with lesser security and assistance than required.
- ◆ ICMR guidelines (2005) did not set accountability within the agencies indulged in providing surrogate mothers; they did not properly address the issues of sex selection.

CAN UNIVERSAL BASIC INCOME TACKLE INDIA'S POVERTY?

Context: Localised experiments with Universal basic income (UBI) have shown mostly positive outcomes across states, strengthening calls in favour of the social policy.

Understanding Universal Basic Income (UBI)

- ◆ **Principles of UBI Support:** UBI involves unconditional, periodic cash transfers to individuals, letting them spend as per their needs.
- ◆ **Addressing Concerns about UBI:** Critics fear market distortions and dependency, but UBI's efficacy in poverty alleviation is being evaluated.
- ◆ **The WorkFREE Pilot:** Implemented in Hyderabad, it supports 1,250 residents in slums, empowering them economically and offering insights into UBI's impact.

UBI's Positive Impact on Beneficiaries

- ◆ **Diverse Use of UBI:** Beneficiaries use cash support for **food, fuel, education, and health expenses**, demonstrating its versatility.
- ◆ **Enhancing Economic Activities:** UBI aids in expanding businesses and investing in assets, contributing to economic growth in slum communities.
- ◆ **Breaking Generational Poverty Cycle:** UBI is seen as a safety net, offering hope for families to escape

entrenched poverty through education and economic opportunities.

- ◆ The **Universal Basic Income (UBI)** is characterized by **unconditional and periodic cash transfers** and is being assessed for its impact on poverty eradication.

Impact on Society:

- ◆ **Reduction in Inequality:** UBI can address income disparities, offering a safety net for vulnerable populations, fostering greater social equity.
- ◆ **Enhanced Social Security:** UBI provides a universal safety net, reducing poverty and improving overall societal well-being and security.
- ◆ **Economic Empowerment:** UBI can stimulate local economies, empowering individuals to invest in education, healthcare, and entrepreneurial ventures.
- ◆ **Freedom to Pursue Passions:** UBI can offer individuals the freedom to pursue creative and innovative endeavors without financial constraints.

What are the challenges?

- ◆ **Market Distortion:** UBI may discourage work, leading to labor market distortions and reduced productivity.
- ◆ **Dependency Concerns:** UBI might create a culture of dependency on the state, potentially disincentivizing self-reliance and productivity.
- ◆ **Financial Feasibility:** Doubts exist over the economic sustainability of implementing UBI on a large scale, straining government resources.
- ◆ **Debt and Mindless Spending:** The reckless spending and accumulation of debt without oversight, potentially exacerbating financial instability due to UBI.

LEWIS MODEL FOR INDIA

Context: India's labor dynamics are deviating from Lewis' model. Rethinking economic strategies for job creation in and around agriculture is essential.

What is the Lewis Model of Structural Economic Growth and Development?

- ◆ Arthur Lewis put forward a development model of a **dualistic economy**, consisting of '**Rural agricultural and urban manufacturing sectors**'.
- ◆ Initially, the **majority of labour** is employed upon the land, which is a fixed resource. Labour is a variable resource and, as more labour is put to work on the land, diminishing marginal returns eventually set in:

- ▶ There may be insufficient tasks for the marginal worker to undertake, resulting in **reduced marginal product (output produced by an additional worker) and underemployment.**
- ◆ Urban workers, engaged in manufacturing, tend to produce a higher value of output than their agricultural counterparts.
- ◆ The resultant higher urban wages (Lewis stated that a **30% premium** was required) might therefore tempt surplus agricultural workers to migrate to cities and **engage in manufacturing activity.**
- ◆ **High urban profits** would encourage firms to expand and hence result in further **rural-urban migration.**
- ◆ The Lewis model is a '**model of Structural Change**' since it outlines the development from a traditional economy to an industrialized one.

Lewis' Model and India's Reality:

- ◆ William **Arthur Lewis'** model envisioned surplus farm labor shifting to manufacturing for economic growth.
- ◆ India's experience deviates to agriculture's share fell but manufacturing's rise was marginal from **1993-94 to 2011-12.**
- ◆ Recent trends show a return to **higher farm employment** due to pandemic impacts, while manufacturing's share drops.

Sector-wise share of workforce

TABLE 1
TEN MOST AGRICULTURE-DEPENDENT STATES

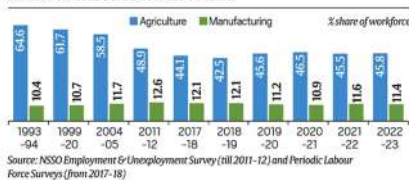
	Agriculture	Manufacturing	Construction	Services*
Chhattisgarh	62.61%	7.58%	9.67%	20.14%
Madhya Pradesh	59.78%	6.27%	11.07%	22.88%
Himachal Pradesh	58.37%	6.93%	8.41%	26.29%
Rajasthan	54.79%	10.09%	12.69%	22.43%
Uttar Pradesh	54.31%	9.20%	13.08%	23.41%
Bihar	49.61%	5.71%	18.39%	26.29%
Jharkhand	49.25%	8.91%	17.43%	24.41%
Assam	48.82%	4.69%	27.70%	18.79%
Odisha	48.13%	7.95%	17.01%	26.91%
Uttarakhand	47.37%	9.86%	10.39%	32.38%

TABLE 2
TEN LEAST AGRICULTURE-DEPENDENT STATES

	Agriculture	Manufacturing	Construction	Services*
Punjab	24.64%	17.75%	15.64%	41.97%
Kerala	27.27%	10.91%	15.37%	46.45%
Tamil Nadu	28.87%	16.77%	18.04%	36.32%
Haryana	29.76%	16.09%	12.76%	41.39%
West Bengal	34.17%	18.75%	11.66%	35.42%
Tripura	35.57%	3.12%	20.54%	40.77%
Gujarat	41.82%	23.77%	7.11%	27.30%
Andhra Pradesh	44.51%	10.51%	11.10%	33.88%
Karnataka	45.63%	10.36%	9.25%	34.76%
Maharashtra	45.98%	12.42%	6.35%	35.25%

*Inclusive of mining & quarrying, electricity, gas, water and other utilities.
Source: Periodic Labour Force Survey July 2022-June 2023.

CHART
AGRICULTURE VS MANUFACTURING



Source: NSSO Employment & Unemployment Survey (till 2011-12) and Periodic Labour Force Surveys (from 2017-18)

Structural Transformation Challenges:

- ◆ Shift from **"subsistence" to "capitalist"** sectors falters; labor movement mainly within subsistence sectors.
- ◆ New jobs created outside agriculture are often low-paid, in services, and construction, not high-productivity industries.

- ◆ Gujarat stands out, resembling Lewis' model, but still has a significant agricultural workforce.

Emerging Labor Challenges:

- ◆ Traditional manufacturing sees automation, making labor transitions more complex.
- ◆ NITI Aayog proposes a new economic model focusing on job creation related to agriculture.
- ◆ This model involves activities beyond farming, like processing, retailing, and supplying services to farmers.

THE INDIAN RAILWAYS' REVENUE PROBLEM

Context: When examining Indian Railways' revenue shares, profitability, and the outcomes of investments, it's crucial to ensure that, unlike Air India, these investments contribute positively to its revenue.

- ◆ While railway investments stimulate **manufacturing, services, tax revenue, and job creation**, safeguarding their impact on overall revenue is essential.

Introduction to Indian Railways

- ◆ India's railway network is one of the largest in the world. The route network of the Indian Railways is 1,23,236 kilometres long.
- ◆ Under one administration, India's railway network is the fourth biggest in the world and the second-largest in Asia.
- ◆ It helps to boost the country's economic growth and integration.

Indian Railways (IR) revenue system:

- ◆ Indian Railways is funded by internal resources (freight and passenger income and leasing of railway land), central government budgetary assistance, and supplementary budgetary resources (mainly borrowings, institutional financing and public-private partnerships).
- ◆ Internal income for the railways is expected to reach Rs 2,40,000 crore in 2022-23, up 19% from revised forecasts for 2021-22.
- ◆ Revenues are expected to be **7% lower in 2021-22** than projected in the budget.
- ◆ The Government of India owns and operates Indian Railways, a state-owned railway business.

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YASHARTH SHEKHAR (AIR 12, 2021)



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- ◆ It is one of the world's major transportation and logistics hubs. Indian Railways' earnings are separated into three categories:
 - ▶ Freight
 - ▶ Compensation for passengers
 - ▶ Earnings from the laundry
- ◆ Sundry profits encompass all income inflows that are not related to freight or passenger business revenues, such as land leasing, brake vans, advertising revenues, and fees for different inspections and tender fees, among other things.

Challenges faced:

- ◆ **Post-merger issues:** The government of India approved the merger of Railway Budget with the General Budget in 2016.
 - ▶ IR's capex surged post-budget merger, but **operating ratio (expenses to receipts)** showed no improvement, hindering profitability.
- ◆ Expenditure on repayments surged to **17% of revenue receipts**, highlighting a significant debt burden for IR.
- ◆ IR's massive capex is justified as an engine for economic growth, benefiting manufacturing, services, tax revenue, and job creation.
- ◆ IR's passenger services reported staggering losses of Rs. 68,269 crore in 2021-22, nullifying profits from freight traffic.
- ◆ Freight volume and revenue growth lagged behind India's economic growth rate in April-July 2023, demanding an overhaul.
- ◆ Abandoning goods and parcel division in favour of **bulk and non-bulk** categorization can enhance cargo movement efficiency.
- ◆ Rail's share in transporting key commodities like coal, iron ore, and cement has declined, demanding strategic reevaluation.
- ◆ Fluctuations in **Net Tonne Kilometres (NTKM)** pose challenges, with growth rates lower than road transport in recent years.
- ◆ IR needs to re-evaluate strategies for boosting **freight business**, addressing revenue challenges, and regaining market share.

Suggestion for growth of Indian Railways:

- ◆ **Sustainable pricing in the future:** The Indian Railways' pricing strategy has to be revisited to make the passenger and freight divisions sustainable. Tariffs should be competitive with road transport costs.
- ◆ **Independent regulator:** Creating a fair playing field for private players would need the creation of an independent regulator.

- ▶ To achieve this goal, establishing the Rail Development Authority, which the government has already approved, must be expedited.

- ◆ **Modernisation of railways:** The Bibek Debroy committee's suggestions, such as expanding the Indian Railways manufacturing firm and corporatising essential railway activities, must be implemented.

Conclusion

The Indian Railways intends to earn more money and enhance its financial health by using existing infrastructure such as railway stations, land, lines, and advertising. This is a deviation from the organisation's traditional strategy of increasing rates to increase revenue.



IEA WORLD ENERGY OUTLOOK 2023

Context: Recently, the World Energy Outlook report 2023 has been released by the International Energy Agency (IEA).

Key Highlights of the Report:

- ◆ **Emissions and Temperature Projection:** The latest World Energy Outlook predicts a **2.4-degree Celsius** temperature increase due to current policies.
 - ▶ It aligns with the Intergovernmental Panel on Climate Change's concerns over a **3.2-degree Celsius** rise.
- ◆ **Peak in Fossil Fuel Demand:** A significant revelation is the projected peak in fossil fuel demand by the end of the decade.
 - ▶ This encompasses **coal, oil (due to electric vehicle growth), and natural gas**, challenging previous industry projections.
- ◆ **Diverse Investment Needs:** The IEA underscores the necessity for diversified energy investments, estimating a requirement of **3.2 to 4.7 trillion Dollars** by 2030.
 - ▶ Clean energy is presently favored, but the report advises a balanced approach, cautioning against both excessive and insufficient investments in fossil fuels.
- ◆ **Recommendations:**
 - ▶ **Urgency in Clean Energy Investment:** While applauding global Net-Zero commitments and clean energy strides, the report stresses the need to ramp up investment in emerging markets. Obstacles like financial constraints and project costs must be overcome through robust domestic policies and increased global assistance.

► **Balanced Investment Mix:** The report advocates a well-rounded investment approach, emphasizing the importance of **infrastructure, grid expansion, low-emission fuels, and carbon capture technologies.**

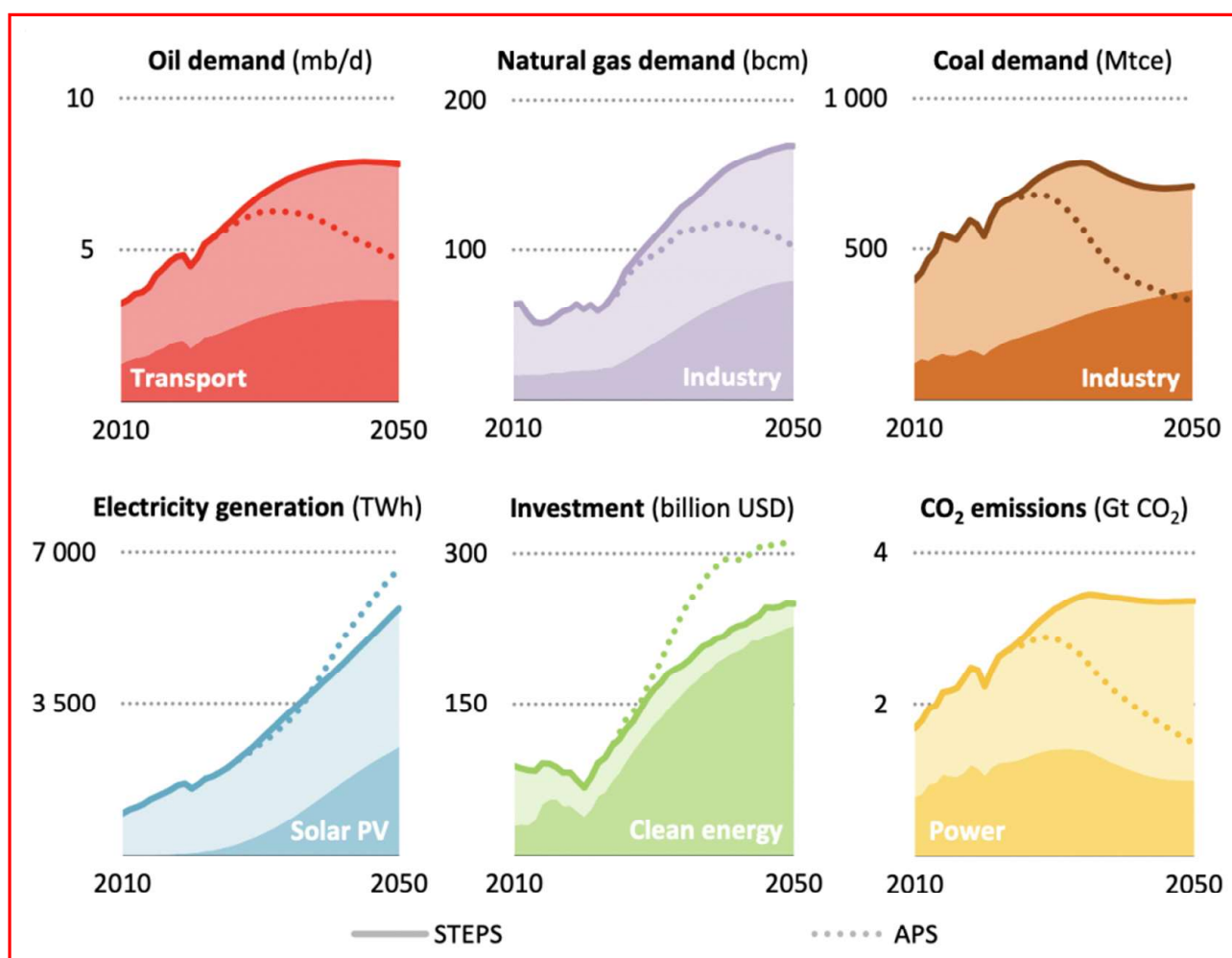
- It highlights regional challenges, including **financial health, capital costs, and public acceptance.**

► **Energy and Mineral Security Considerations:** As the energy sector transforms, potential supply concentration and mineral shortages pose security concerns.

- The IEA suggests increased investment in **mining, acknowledging associated environmental, social, and geopolitical risks.**

Significance of the Report:

- ◆ **Geopolitical Importance in Energy Management:** The IEA underscores the significance of political and commercial ties in energy supply and demand. Strong global energy markets and strategic reserves mitigate risks from **geopolitical disruptions and severe weather events.**



Way forward:

◆ **Shifting Energy Sources and Geopolitics:** Transitioning to cleaner energy sources reduces reliance on fossil fuels controlled by groups like OPEC. While they may still play a role in energy supply, their overall influence diminishes as consumers have more clean energy alternatives.

◆ **India's Energy Transformation:** The report applauds India's progress in power generation, clean cooking, and petroleum refining.

- However, it raises concerns about the surge in air conditioner ownership, which strains electricity demand. Additionally, India's solar PV module manufacturing needs to match the growth in solar capacity.
- The IEA proposes ambitious goals for renewable capacity, energy efficiency, methane reduction, clean energy investment, and fossil fuel decline.

WORLD ON BRINK OF 'SIX' INTERCONNECTED RISK TIPPING POINTS: UN REPORT

Context: According to UN report from the United Nations University – Institute for Environment and Human Security (UNU-EHS), human activities driving risk tipping points.

About:

- ◆ The tipping points identified includes;
 - ▶ Extinctions
 - ▶ Depleting groundwater
 - ▶ Melting glaciers
 - ▶ Space debris
 - ▶ Unbearable heat
 - ▶ Uninsurable future.

What is tipping point?

- In environmental science, a tipping point is a **critical threshold** that, when crossed, leads to large and often irreversible changes in the environmental system.
- A risk tipping point is the moment at which a given socio-ecological system can no longer buffer risks and provide its expected functions, the report defined.
- After this point, the risk of **catastrophic impacts** to these systems increases substantially.

- ◆ The world is inching closer to **six interconnected risk tipping points**, describing immediate and increasing risks across the world, according to a new report from the **United Nations University – Institute for Environment and Human Security (UNU-EHS)**.

The Tipping Points:

- ◆ **Extinctions:** It have been part of Earth's natural process, but human activities such as **land-use change, overexploitation, climate change, pollution and introduction of invasive species** have accelerated extinctions.
 - ▶ For example, more than **400 vertebrate species** have been wiped out in the last **100 years** and a million plant and animal species are at risk of being extinct.
 - ▶ Along with this, some 32 million hectares of primary or recovering forest were lost between **2010 and 2015**.

- **Domino Effect:** The disappearance of one species can trigger the extinction of other dependent species, leading to a ripple effect on the already fragile ecosystem, the report also highlighted.
- The gopher tortoise, for example, is facing an extinction risk. It is known to dig burrows that are used by more than 350 other species, including the critically endangered dusky gopher frog. These frogs help control insect populations and prevent pest outbreaks in longleaf pine forest ponds.
- If the gopher tortoise goes extinct, the dusky gopher frog will likely follow, affecting the entire forest ecosystem.

- ◆ **Depleting groundwater:** The aquifers that store groundwater are in a critical state and two billion people rely on them as a primary source of freshwater.
 - ▶ Also, 70 per cent of the water is used for agriculture. Some 21 of 37 world's largest aquifers are depleting faster than they can be replenished.
 - ▶ The issue is that the water stored in aquifers took more than thousands of years to accumulate and recharging them would equally take the same time, making it essentially a non-renewable resource.
 - ▶ In India, **78 per cent of wells in Punjab** have been labelled overexploited, and the north-western part of the country is predicted to experience critically low groundwater availability by 2025.
- ◆ **Melting Glaciers:** The other system approaching the tipping point is the melting glaciers, which act as water sources for **drinking, irrigation, hydropower and ecosystems**.
 - ▶ Due to global warming, the world's glaciers are melting at double the speed relative to the past two decades, which puts **1.9 billion people at risk**. Between 2000 and 2019, glaciers lost 267 Gigatons of ice per year, roughly equivalent to the mass of **46,500 Great Pyramids of Giza**, the report noted.
 - ▶ In a warming world, we are projected to lose around 50 per cent of glaciers (excluding Greenland and Antarctica) by 2100, even if global warming can be limited to **1.5 degrees Celsius**.
- ◆ **Space debris:** It consists of objects such as minuscule flecks of paint and massive chunks of metal have also been flagged by the report.
 - ▶ Out of 34,260 objects orbiting Earth, only around 25 per cent are working satellites, while the rest are junk, such as broken satellites or discarded rocket stages. Further, it is estimated that there are around 130 million pieces of debris measuring between 1 millimetre and 1 centimetre, which are too small to be tracked.

- ▶ As these objects travel over 25,000 kilometres per hour, the smallest debris can cause significant damage, including collisions between functional satellites, the report warned.
- ◆ **Unbearable heat:** The “unbearable heat” tipping point deals with “**wet-bulb temperature**” above 35°C. It combines temperature and humidity. High humidity, according to researchers, hinders the evaporation of sweat and worsens the effects of heat, causing organ failure and brain damage.
- ◆ **Uninsurable future:** Extreme weather events around the world, which have become more frequent and severe, have driven up the cost of the damage, complicating the delivery of insurance.
 - ▶ Since the 1970s, damages wrought by weather-related disasters have increased sevenfold, with 2022 alone seeing 313 billion dollars in global economic losses.

Way Forward:

- ◆ To address these challenges, we must prioritize global cooperation, commit to aggressive emissions reductions to combat climate change, invest in sustainable energy sources, protect biodiversity, enhance global health systems, and bolster international conflict resolution mechanisms.
- ◆ We must unite as a global community, leveraging technology, innovation, and diplomacy to mitigate these pressing threats, promoting a resilient and equitable future for all.
- ◆ Collaboration, responsible governance, and a collective commitment to sustainable development are crucial to steer us away from the brink and create a more secure, harmonious world.



WEST ANTARCTIC WARMING

Context: According to a new study, the rapid melting of West Antarctica's ice sheet due to warm waters around it is now unavoidable.

About the study:

- ◆ The study, '**Unavoidable future increase in West Antarctic ice-shelf melting over the twenty-first century**', was published by the journal Nature recently.
- ◆ The study says that if lost completely, the ice sheet would raise the global mean sea level by **5.3 meters or 17.4 feet**—a potentially devastating consequence for millions of people living in vulnerable **coastal cities** across the world, including in India.

Key Findings of the study:

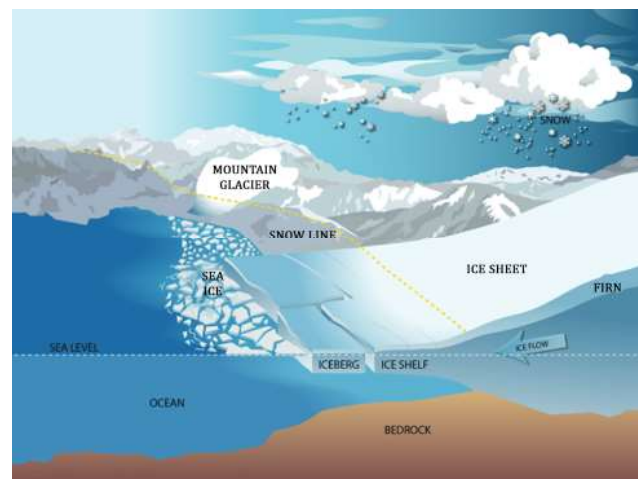
- ◆ **Comprehensive Assessment:** Scientists utilized a high-resolution computer model of the Amundsen Sea for an extensive evaluation of **West Antarctic warming**.
 - ▶ Over **4,000 years** of simulations were run, considering various fossil fuel burning trajectories and natural climate variations.
- ◆ **Grim Findings:** Regardless of scenarios, significant and widespread warming in the **Amundsen Sea** is projected, with increased ice shelf melting.
 - ▶ **Up to 2045**, little variation is seen between scenarios, including the **1.5°C scenario** in line with the Paris Agreement.
- ◆ **Impact on Sea Level Rise:** The study predicts heightened sea level rise, impacting global coastal communities, including India.
 - ▶ Vulnerable areas may face challenges in affording defenses against **rising seas**, potentially leading to **population displacement**.

What is an Ice Sheet?

- ◆ An ice sheet is essentially a **mass of glacial ice** that covers more than **50,000 square kilometers** of land.

There are two major ice sheets in the world today: **Greenland ice sheet** and **Antarctica ice sheet**.

- Together, they contain about **two-thirds of all the freshwater on Earth**.



According to a report by the **National Aeronautics and Space Administration (NASA)**, “Over time, when ice sheets gain mass, they contribute to a fall in global mean sea level, and when they lose mass, they contribute to a rise in global mean sea level.”

How Antarctica Ice is melting?

- ◆ **Melting Process:** Warm ocean waters cause melting of ice shelves, stabilizing glaciers.
- ◆ **Impact on West Antarctica:** Amundsen Sea faces this process, leading to depleting ice shelves, faster glacier flow, and shrinking ice sheet.
- ◆ **Differentiating Ice Types:** Ice shelves and sheets stabilize land-based glaciers, distinct from sea ice formed by freezing seawater.

Concerns associated:

- ◆ Thinning or disappearance speeds up glacier flow, raising sea levels.
- ◆ Melting glaciers add to rising sea levels, which in turn increases coastal erosion and elevates storm surge as warming air and ocean temperatures create more frequent and intense coastal storms like **hurricanes and typhoons**.

The Greenland and Antarctic ice sheets are the largest contributors of global sea level rise. Right now, the Greenland ice sheet is disappearing **four times faster than in 2003** and already contributes 20% of current sea level rise.



INDIA'S FIRST DISTRICT-LEVEL STUDY ON HYPERTENSION

Context: Recently, a district-wise analysis on hypertension has been conducted which flags disparities in care in India.

- ◆ Also, according to a recent WHO report, 188.3 million people in India suffer from hypertension but only 37% get diagnosed, only 30% start treatment, and only 15% manage to keep their blood pressure under control.

About the study:

- ◆ It is the first time that data on hypertension was analysed **district-wise**.
- ◆ **Published by:**
 - ▶ The district-level study, published in **JAMA Network**, a journal published by the American Medical Association, was conducted by **AIIMS Delhi and scientists** from Europe and the US who used the hypertension data from NFHS-5, the fifth round report of which was released in May 2022.

- ◆ A dashboard was created as a part of the study and has **gender-wise, area-wise educational levels data** on hypertension.

◆ Significance:

- ▶ The district-wise level analysis was important as the many **state-level analyses** done earlier did not highlight "the heterogeneity" within states, even those considered better-performing states.
- ▶ And with the new dashboard, every district can now analyses their data according to gender and socio-demographic disparities.

Key Findings

- ◆ The study estimated that at least **4.6 million deaths in India** can be prevented by 2040 if half of those with the condition manage to keep their blood pressure under control.
- ◆ In **Karnataka**, four districts — **Chikmagalur, Shimoga, Udupi and Chitradurga** — have a similar prevalence of hypertension, but the proportion of participants diagnosed and treated in Chikmagalur and Udupi was higher.
- ◆ In **Meghalaya**, the five districts of Garo Hills, the two districts of Jaintia Hills and the three districts of Khasi Hills all have a similar prevalence of hypertension, but the proportion of those diagnosed is much lower in Garo Hills than in Jaintia Hills and Khasi Hills.
- ◆ More significantly, the study found, there were **substantial variations** across districts in;
 - ▶ Blood pressure diagnosis (range: 6.3%-77.5%),
 - ▶ Treatment (range: 8.7%-97.1%) and
 - ▶ Control (range: 2.7%-76.6%).
- ◆ Raising a red flag, the researchers said that the **national mean values of hypertension** "hide considerable" variation at the district level.

Recommendations:

- ◆ The findings of the study showed that despite health being a **state subject**, there was a need for more autonomy at the district level.
- ◆ Another key finding of the study was the importance of screening hypertension and diabetes using local healthcare workers, including ASHA workers.
- ◆ It highlighted the urgent need for a more "targeted" approach to fight the medical condition often referred to as the "**silent killer**".
- ◆ It recommended a critical public health strategy to improve care — "**targeted, decentralised solutions**" at the district level.



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Section B [SPECIALS]

Topic

☞ SC hearing on 'Electoral Bonds' Case

SC HEARING ON 'ELECTORAL BONDS' CASE

Context: Recently, the Supreme Court (SC) gave judgements on Electoral Bond keeping donor's privacy over voter's right to known by the Central Government, and gives itself a waiver.

Background:

- ◆ The Supreme Court (SC) has referred petitions challenging the **2018 Electoral Bonds Scheme** to a five-judge Constitution Bench.
- ◆ While the Centre has termed the scheme "**a big step towards electoral reform**" which "will ensure transparency" and "accountability", petitioners have contended that it affects transparency in political funding.

What are electoral bonds?

- First announced during the **Union Budget session** in 2017, "electoral bonds" are interest-free "bearer instruments", which means that they are payable to the bearer on demand, similar to a promissory note.
- Essentially, electoral bonds allow **Indian citizens or a body incorporated** in India to purchase bonds, enabling anonymous donations to political parties.
- Usually sold in denominations ranging from **Rs.1,000 to Rs.1 crore**, these bonds can be bought from authorised SBI branches through accounts complying with KYC norms.
- Following this, the political parties can choose to encash the bonds within 15 days of receiving them and fund their electoral expenses.
- Section 29A of the RPA deals with the **registration of associations** and bodies as political parties with the Election Commission.
- However, they aren't available for purchase throughout the year and can only be purchased between 10-day windows falling in the months of **January, April, July, and October**.
- Importantly, electoral bonds can only be used to donate to political parties registered under **Section 29A** of the Representation of the **Peoples Act, 1951**, securing at least 1% of the votes polled in the last election to the House of the People or a Legislative Assembly.

Why were electoral bonds introduced?

- The Centre's rationale behind introducing the electoral bonds scheme was to "cleanse the system of political funding in the country" and bring about "transparency in electoral funding in India".
- To tackle these problems, then-Finance Minister Jaitley proposed electoral bonds while suggesting that the amount of money that a party could accept in cash from anonymous sources be reduced from **Rs 20,000 to Rs 2,000**.

- ◆ The Electoral Bond scheme introduced instruments through which anyone in the country could donate money to political parties anonymously.
- ◆ This is not the first time the scheme has ended up before the top court since its inception in 2017.

The Finance Act and Electoral Bond Scheme:

- ◆ The **Finance Act(s) of 2016 and 2017** amended **four separate legislations** to make way for the electoral bonds scheme, including;
 - ▶ The Foreign Contribution Regulation Act, 2010;
 - ▶ The RPA, 1951;
 - ▶ The Income Tax Act, 1961; and
 - ▶ The Companies Act, 2013.

The First Petition challenging Electoral Bond Scheme:

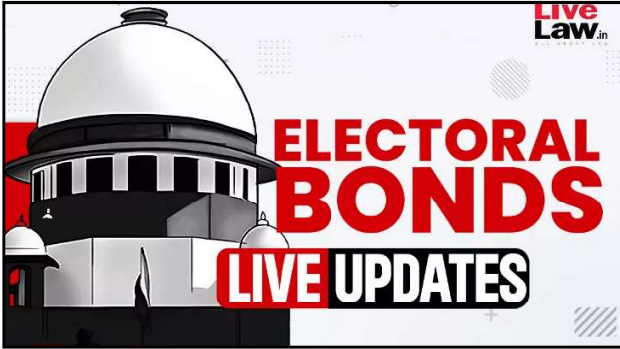
- ◆ In 2017, the first batch of petitions was filed by two NGOs, Common Cause and **the Association for Democratic Reforms (ADR)**, to strike down amendments made through the Finance Acts of 2016 and 2017, passed as money bills, which "opened doors to unlimited political donations, even from foreign companies," thereby legitimising electoral corruption on a huge scale. The pleas also argued that the bonds ensured complete non-transparency in political funding.
- ◆ Arguing that the scheme shouldn't have been introduced "illegally," bypassing the Rajya Sabha's approval; the petitioners sought a stay on the scheme.

Previous ruling of SC on Electoral Bond Scheme:

- ◆ A **three-judge SC bench**, in an interim order, directed political parties receiving donations through electoral bonds to submit the details of the bonds to the ECI.
- ◆ Subsequently, while dismissing a prayer to stay the sale of fresh bonds in March 2021, a three-judge SC Bench headed by then **CJI SA Bobde** disputed the petitioner's contention regarding the "complete anonymity" of bond purchasers.
- ◆ "It is not as though the operations under the scheme are behind iron curtains incapable of being pierced", the court said, dismissing petitions seeking to stay

the sale of fresh electoral bonds ahead of Assembly elections in West Bengal, Tamil Nadu, Kerala, Assam, and Puducherry.

- ◆ Additionally, the SC said that bonds had been issued in the past, between 2018 and 2020, “without any impediment,” and it had already ordered “certain safeguards” by way of its April 2019 interim order.



What does a safeguard mean?

- The “safeguards” the court was referring to here were “requiring all the political parties who have received donations through Electoral Bonds to submit to the Election Commission of India in sealed cover” along with particulars of the donors for each bond, including the amount of each bond and credit details received against each bond, like bank account details and the date of crediting the amount.

Recent SC Bench and the Petition

- ◆ In the present case, the Supreme court will be dealing with four petitions, filed by ADR, CPI(M), Congress leader Jaya Thakur, and a PIL by one Spandan Biswal.
- ◆ Besides challenging the constitutionality of the electoral bonds scheme, the petitioners have asked the court to declare all political parties as public offices to bring them under the ambit of the **Right to Information Act** and **compel political parties** to disclose their income and expenditure.

What has the ECI’s stance been?

- In its submission to the Standing Committee on Personnel, Public Grievances, Law, and Justice in May 2017, the ECI objected to the amendments in the RPA exempting political parties from disclosing donations received through electoral bonds while describing the move as a “retrograde step”.
- In 2019, as part of the ongoing challenge to electoral bonds in the SC, the ECI filed an affidavit flagging the issue of laws being changed to allow political parties to receive contributions from foreign companies, allowing “unchecked foreign funding of political parties” which could lead to “Indian policies being influenced by foreign companies”.

What has the Centre’s stance been?

- Attorney General R Venkataramani told the Supreme Court, by way of written submissions, that the citizens’ right to know is subject to reasonable restrictions.
- Stating that “**there can be no general right to know anything**” without “**reasonable restrictions**”, the AG responded to the petitioner’s prayer for a “declaration that citizens have a right to know as an aspect/facet of the right to freedom of expression,” based on which they have the right to access the details of contributions to political parties.
- Defending the Centre’s scheme, the AG said that it “extends the benefit of confidentiality to the contributor” and promotes the contribution of clean money.

Recent Arguments for the Privacy of Electoral Bonds donation:

- ◆ It is imperative for the State to protect the fundamental right to privacy of a citizen donating to a political party because the donation is a reflection of her “**Political affiliation**” which is in the “**Core zone of privacy**”.
- ◆ This argument that Solicitor General of India put before the Supreme Court is at the heart of the Centre’s defence of the structural opaqueness in the electoral bond scheme.
- ◆ The Government’s case is that the donor’s right to privacy over-rides the voter’s right to know, even if in protecting that privacy, **the state gives itself an exemption**.

SC Views on recent petition:

- ◆ The right to privacy point was flagged by Chief Justice of India who observed during the hearing, the donor of an electoral bond is not exactly anonymous.
- ◆ While the State, through law enforcement agencies and the State Bank of India, is privy to the donor’s identity and, therefore, expression of “political affiliation”, this information is protected from the voter exercising her fundamental right to participate in a democracy.
- ◆ A citizen’s fundamental right is exercised against the state.
- ◆ It flows from Article 13 of the Constitution, which mandates that the state cannot make any laws inconsistent with or interrogation of fundamental rights.
- ◆ The secret ballot system of voting, an example of expression of political affiliation, is protected against the State. The constitution places the responsibility to protect is right with an independent arm of the state, the Election Commission.

SC 2017 judgment of Right to privacy and Government Stand:

- The Centre stand relies heavily on the Supreme Court's landmark 2017 ruling in **KS Puttaswamy v Union of India**, in which a **nine-judge bench** unanimously reaffirmed the right to privacy as a fundamental right under the Constitution.
- Ironically, the government, in that case, had argued that citizens do not have a fundamental right to privacy since it did not specifically find a place in the Constitution.
- The Centre had taken this stand — against elevating the right to privacy to the status of a fundamental right — since 2014 even before smaller benches of the Supreme Court.

- In 2021, the Supreme Court in the Pegasus spyware case, refused to accept the government's blanket national security ability to violate the fundamental right to privacy.

Conclusion:

The free flow of information from the Petitioners and the State, in a writ proceeding before the Court, is an important step towards Governmental transparency and openness, which are celebrated values under Indian Constitution.



Section C [PRELIMS]

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- ☞ Kathaprasangam
- ☞ Saima Wazed to become WHO regional Director for South East Asia
- ☞ 7th Edition of the India Mobile Congress (IMC)
- ☞ India begins producing 'reference' fuel
- ☞ 'Mera Yuva Bharat (MY Bharat)' platform
- ☞ State Food Safety Index (SFSI) 2023 Report
- ☞ Centre to depute 'National level monitors' to oversee livestock schemes
- ☞ Ejecta halo
- ☞ Dark pattern sales deemed 'cybercrime'
- ☞ Haemoglobin isn't used only in blood: Study
- ☞ 'Carbon Nanoflorets' for Efficient Heat Conversion
- ☞ Rohini Nayyar Prize

KATHAPRASANGAM

Context: At a time when Kathaprasangam is on the verge of extinction, people in Kozhikode are trying to spread awareness of social issues through the art form.

What is Kathaprasangam?

- ◆ Kathaprasangam (lyrical narrative or story telling performance) is a performing art of **Kerala, India**.
- ◆ It combines speaking, acting, and singing to present a story.



- ◆ A performance typically lasts **2.5 to 3 hours**.
- ◆ Costumes, make-up, or settings are not used.
- ◆ The main artist, the **Kaadhikan**, tells the story, **acts and sings** with two or three accompanying instrumentalists.
- ◆ Themes are largely from **classical and popular** literature.
- ◆ It originated from an earlier art form **Harikathakalakshepam** which used similar techniques, but differed in **theme and style**.

While Harikadhakalakshepam was based on themes from **puranas and epics**, Kathaprasangam received themes largely from **classical and popular literature**.

Famous patrons:

- ◆ Manmadhan, Keshava Panicker, Joseph Kaimapramban, **V. Sambasivan**, Kedamangalam Sadanandan, Cherthala Bhavani Amma, Ammini Brahmani Amma, Thiruvalla Ponnamma etc.

Similar Art forms:

- ◆ Kathakalakshepa, Burrakatha of **Andhra Pradesh** and
- ◆ Villupattu of **Tamil Nadu** shows affinity to kathaprasangam.

SAIMA WAZED TO BECOME WHO REGIONAL DIRECTOR FOR SOUTH EAST ASIA

Context: Recently, Bangladesh's Saima Wazed, daughter of Prime Minister Sheikh Hasina, beat Nepal's Shambhu Prasad Acharya to be nominated as the next **World Health Organization (WHO's) Regional Director for South-East Asia**.

About the information:

- ◆ The election was held at the 76th session of the **Regional Committee for SEARO** in New Delhi.

Regional Committee for South-East Asia (SEARO): seventy-sixth sessions:

- The Seventy-sixth session of the WHO Regional Committee for South-East Asia will be held in New Delhi, India, from 30 October to 2 November 2023.



- ◆ The SEARO is one of the **six regions of WHO** with its headquarters in New Delhi.
- ◆ She got 8 votes out of 10, while the Nepal got 2 in its favour.

India' Vote: India voted in **favour** of Bangladesh's candidature namely, Saima Wazed.

- ◆ **Saima Wazed** is going to hold the office of Regional Director for a **five-year term** and will be eligible for reappointment once.
- ◆ **Role and Responsibility:** Wazed will be responsible for steering public health responses in the region, which is home to a quarter of the global population and has **30 per cent** of the global disease burden.

Regional Division of WHO:

- ◆ WHO Member States are grouped into six regions. Each region has a regional office which includes;
- ◆ Africa
- ◆ South America
- ◆ South east Asia
- ◆ Europe
- ◆ Eastern Mediterranean
- ◆ Western Pacific

WHO and South East Asia Region:

- ◆ South-East Asian Region comprised **11 countries** but is home to more than a quarter of the world's population and a significant burden of disease.
- ◆ Countries in the WHO South-East Asia Region are **Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste.**
- ◆ Member countries will advance commitment to continuing efforts to achieve universal health coverage, with a focus on strengthening human resources for health and expanding the availability of essential medicines.
- ◆ Continuing effort to strengthen the health workforce has led to a 30.6% increase in the availability of doctors, nurses and midwives in the WHO South-East Asia Region since 2014.



7TH EDITION OF THE INDIA MOBILE CONGRESS (IMC)

Context: Recently, the Prime minister has convened the seventh edition of India Mobile Congress (IMC) at New Delhi.

India Mobile Congress (IMC) 2023:

- ◆ India Mobile Congress (IMC) is the largest telecom, media, and technology forum in Asia and will be held from **27th to 29th October, 2023.**
- ◆ The event will act as a platform to highlight India's incredible advancements in telecommunications and technology, bring forth significant announcements and provide an opportunity to start-ups to display their innovative products and solutions.
- ◆ **Theme: 'Global Digital Innovation'**
- ◆ **Objective:**
 - ▶ It aims to strengthen India's position as a developer, manufacturer, and exporter of key cutting-edge technologies.

- ▶ The three day congress will highlight technologies such as **5G, 6G, Artificial intelligence (AI)** and discuss issues pertaining to semiconductor industry, green technology, Cyber security etc.

About the event:

- ◆ During the Programme, the Prime Minister will award 100 '**5G Use Case Labs**' to educational institutions across the country.
- ◆ These labs are being developed under the '**100 5G labs initiative**'.
- ◆ IMC is also introducing a startup program - '**Aspire**'.
 - ▶ It will foster connections between startups, investors, and established businesses with an aim to catalyse fresh entrepreneurial initiatives and collaborations.

100 5G labs initiative:

- ◆ The '100 5G labs initiative', is an endeavour to realise the opportunities associated with 5G technology by encouraging development of **5G applications** which cater, both to India's unique needs as well as the global demands.
- ◆ The unique initiative will foster innovation across various socioeconomic sectors like **education, agriculture, health, power, transportation etc.**, and propel the country into the forefront of **usage of 5G technologies.**
- ◆ The initiative is also a pivotal step for building a **6G-ready academic** and start-up ecosystem in the country.
- ◆ More importantly, the initiative is a step towards development of indigenous telecom technology which is critical for national security.



'MERA YUVA BHARAT (MY BHARAT)' PLATFORM

Context: The Prime Minister has launched '**Mera Yuva Bharat (MY Bharat)**' platform for youth of the country on **October 31st, on the National Unity Day.**

The Mera Yuva BHARAT:

- ◆ Mera Yuva Bharat (MY Bharat), an **autonomous body** will benefit the youth in the age group of 15-29 years, in line with the definition of 'Youth' in the National Youth Policy.
- ◆ The beneficiaries will be in the age-group of **10-19 years.**

About the Platform:

- ◆ Mera Yuva Bharat (MY Bharat) is 'Phygital **Platform**' (**physical + digital**) comprising physical activity along with an opportunity to connect digitally.
- ◆ **Vision:**
 - ▶ 'Mera Yuva Bharat (MY Bharat)' is envisioned as a pivotal, **technology-driven facilitator for youth** development and youth-led development, with the overarching goal of providing equitable opportunities to empower the youth in realizing their aspirations and contributing to the creation of a "**Viksit Bharat**" (**developed India**), across the entire spectrum of the Government.
 - ▶ It envisions a framework where the youth of our country can seamlessly connect with **programs, mentors, and their local communities**.
 - ▶ This engagement is designed to deepen their understanding of local issues and empower them to contribute to constructive solutions.

Objectives:

The primary objective of Mera Yuva Bharat (MY Bharat) is to make it a whole of Government platform dedicated to the advancement of the youth. Its objectives include:

- ◆ **Leadership Development in the Youth:** Improve the leadership skills through experiential learning by shifting from isolated physical interaction to programmatic skills,
- ◆ Investing in youth to make them social innovators, and leaders in the communities.
- ◆ Better alignment between the aspirations of the youth and the community needs.
- ◆ Enhanced efficiency through Convergence of existing programmes
- ◆ Act as a one-stop shop for young people and Ministries
- ◆ **Create a centralized youth database:** Improved two-way communication to connect youth government initiatives and activities of other stakeholder that engage with youth.

Need for such a body:

- ◆ **Role of youth in Amrit Kaal:** India's youth are to play a critical role in defining the future of the nation - especially at the pivotal juncture of India's 75 years of independence, as the country embarks on a paradigm-shifting development journey over the next 25 years of building an **Amrit Bharat by 2047**.

- ◆ **Establishing a framework for bringing youth from diverse areas under a single platform:** Vision 2047 requires a framework that can bring rural youth, urban youth and Rurban youth on a single platform. The existing schemes of the Government were designed and launched at different points in time over the last 50 years with the then prevailing understanding of the needs of rural youth in our society. The dynamic shifts in the urban-rural landscape have necessitated a re-evaluation of these approaches. It is imperative to create a framework that unites rural, urban, and rurban youth on a common platform. Mera Yuva Bharat will help to create such a framework.
- ◆ **Establishing a new contemporary technology-led platform to engage with the present-day youth:** In today's fast-paced world, characterized by rapid communication, the prevalence of social media, and the emergence of new digital tools and cutting-edge technologies, a technology-driven platform can connect youth to programmes that can help them



improve their capabilities and also connect them with community activities.

- ◆ **Ensuring accessibility by creating a phygital ecosystem:** The Mera Yuva Bharat platform will create a phygital ecosystem and empower young individuals to become catalysts for community transformation. They would act as "Yuva Setu," linking the government with its citizens.

Other recent interventions:

- ◆ Recently, a web portal of the Department of **Youth Affairs, yuva.gov.in**, hosted a nation-wide program called "**Meri Maati Mera Desh**" in which 50 million young people participated and helped to plant 23 million saplings to create **Amrit Vatikas pan-India**.

INDIA BEGINS PRODUCING 'REFERENCE' FUEL

Context: India has joined the League of Nations producing 'reference' petrol and diesel, specialized fuels used for testing automobiles.

Need to produce reference fuel for India:

- For decades, India has relied on imports to meet the demand for these specialised fuels.
- Now, the **Indian Oil Corporation's** Paradip refinery in Odisha will produce 'reference' grade petrol and its **Panipat unit** in Haryana will produce such quality diesel.



- Shifting from dependence on imports and this initiative is in line with the government's objective of becoming Aatmanirbhar has started producing the fuel at its refineries,

What are reference fuels?

- 'Reference fuels' (gasoline and diesel) are premium high-value products, used for calibration and testing of vehicles by **auto OEMs and organizations** involved in **testing and certification** in the automotive field.
- For vehicle testing purposes, the fuel has to be of a **higher grade** than regular or **premium petrol and diesel**.
- The host of specifications -- from **Cetane number** to flash point, viscosity, sulphur and water content, hydrogen purity and acid number -- are listed **under government regulations**, such fuels are referred to as 'reference' petrol/diesel.

How fuels differ?

- The biggest difference between the **normal and premium fuel** lies in the **octane number**.
- The regular fuel has an **octane number of 87**, but premium fuel has an **octane number of 91**.
- Reference grade fuel comes with a **97 octane number**.

The octane number is a unit to **measure the ignition quality** of petrol or diesel.

Applications:

- These reference fuels are used for emission testing of vehicles equipped with spark ignition engines.

STATE FOOD SAFETY INDEX (SFSI) 2023 REPORT

Context: Recently, the Food Safety and Standards Authority of India (FSSAI) published State Food Safety Index (SFSI) 2023 Report.

Key Points of the Report:

- Around **15 out of 20 states** saw lower scores in 2023 compared to 2019 after a new parameter was added i.e. the '**SFSI Rank Parameter**'.
- Maharashtra, Bihar, and Gujarat** witnessed the steepest falls in scores over the **five-year period**.
- The report emphasizes the **role of state apex food safety authorities** in ensuring food safety.

STATES WITH STEEPEST INDEX FALL

State	2019	2023
Maharashtra	74	45
Bihar	46	20.5
Gujarat	73	48.5
Andhra Pradesh	47	24
Chhattisgarh	46	27

Source: SFSI reports; all scores out of 100

SAFETY MEASURE

Parameter	Weight
Compliance	28
Consumer Empowerment	19
Human Resources and Institutional Data	18
Food Testing Infrastructure	17
Improvement in SFSI Rank (added in 2023)	10
Training and Capacity Building	8
TOTAL	100

Analysis of Parameter Scores:

- The '**Food Testing Infrastructure**' parameter saw the most significant drop, averaging 7 out of 17 in 2023 compared to 13 out of 20 in 2019.
 - States like **Maharashtra, Bihar, Andhra Pradesh, and Chhattisgarh** recorded lower scores in this category.

- ◆ **'Compliance' parameter** also saw a decline, with Jharkhand receiving the lowest score (4 out of 28) in 2023.
- ◆ **Consumer Empowerment Parameter:**
 - ▶ It measures state's performance in FSSAI initiatives like Food Fortification, Eat Right Campus, BHOG, Hygiene Rating, and Street Food Hubs.
 - ▶ Bihar's score dropped from **7 to 1** in 2023.
 - ▶ Tamil Nadu, Kerala, and Madhya Pradesh were top performers.
- ◆ **Human Resources and Institutional Data Parameter:**
 - ▶ Average score dropped from 11 to 7. Top performers like **Tamil Nadu and Uttar Pradesh** saw significant score reductions.
- ◆ **Training and Capacity Building Parameter:**
 - ▶ Evaluates training initiatives and capacity-building efforts.
 - ▶ Average score improved from 3.5 to 5, indicating a positive trend in this parameter.
- ◆ **SFSI Rank Parameter:** No word count provided for this section.
 - ▶ Assesses availability of human resources like Food Safety Officers, Designated Officers, and adjudication facilities.

Weightage Changes:

- ◆ Weightage adjustments were made in 2023, introducing a new parameter **'Improvement in SFSI Rank'**.
- ◆ The 'Food Testing Infrastructure' parameter, with 17% weightage, observed the most significant drop in scores.
- ◆ 'Compliance' parameter, with 28% weightage, saw reductions in scores across states compared to 2019.
- ◆ **Human Resources and Institutional Data Parameter:**
 - ▶ Weightage: 18% in 2023 (20% in previous years)
 - ▶ **Improvement in SFSI Rank Parameter:**
 - ▶ Weightage: 10% in 2023
 - ▶ 14 out of 20 large states received 0 points in this new parameter.

About FSSAI:

- **Food Safety and Standards Authority of India (FSSAI)** was established by Former Union Minister Dr Anbumani Ramadoss, Government of India on 5 August 2011 under **Food Safety and Standards Act, 2006** which was operationalized in the year 2006.
- It is a **statutory Body**.

- **Role:** The foremost responsibility of FSSAI includes the development of Science-based Food Standards for articles of food and food products and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption.

CENTRE TO DEPUTE 'NATIONAL LEVEL MONITORS' TO OVERSEE LIVESTOCK SCHEMES

Context: The Centre has decided to deploy **National Level Monitors (NLM)** to oversee the implementation of its **livestock schemes including National Livestock Mission and Rashtriya Gokul Mission.**

- ◆ As per the appointment terms of reference for National Level Monitors (NLM), two types of monitoring will be conducted by them — Regular and Special.

Key Highlights –

- ◆ The government has decided to deploy NLMs to oversee the implementation of key livestock schemes
 - ▶ Including the National Livestock Mission, Rashtriya Gokul Mission, National Programme for Dairy Development, and Livestock Health and Disease Control programme.
- ◆ NLMs will conduct two types of monitoring—regular and special
 - ▶ To ensure compliance with Ministry guidelines, proper implementation processes, and transparent beneficiary selection.
 - ▶ They will also gather villagers' feedback and suggestions for program improvement.
- ◆ The NLMs will assess whether incentives to paravets, technicians, and farmers have been distributed as per scheme requirements.
 - ▶ They'll also verify the real-time upload of data on vaccination, disease monitoring, and artificial insemination to the National Digital Livestock Mission.
- ◆ NLMs will be tasked with investigating serious complaints about fund misuse, irregularities, or any significant concerns raised by people's representatives or farmers.
 - ▶ They may conduct preliminary inquiries with the approval of the Secretary.

- ◆ The terms of reference highlight the need for transparency, unbiased beneficiary selection, and fair implementation, suggesting a focus on ensuring accountability in the execution of livestock schemes through thorough monitoring and verification.

National Livestock Mission:

- The National Livestock Mission (NLM) is a Government of India initiative launched to ensure quantitative and qualitative improvement in livestock production systems and capacity building of stakeholders.
- The mission aims to promote sustainable development in the livestock sector by enhancing productivity, reducing livestock diseases, and ensuring effective implementation of various government schemes related to animal husbandry and dairying.
- The mission encompasses all the Indian states.
- There are four sub-missions under National Livestock Mission:
 - ▶ Sub-Mission on Fodder and Feed Development
 - ▶ Sub-Mission on Livestock Development
 - ▶ Sub-Mission on Pig Development in North-Eastern Region
 - ▶ Sub-Mission on Skill Development, Technology Transfer and Extension
- It is a centrally-sponsored scheme and is run as a sub-scheme under 'White Revolution.'
- It started operating in 2014.



EJECTA HALO

Context: Recently, when the Vikram lander of Chandrayaan-3 touched down on the Moon's surface, it resulted in a lunar phenomenon called 'ejecta halo.'

About:

- ◆ Scientists from the **Indian Space Research Organisation (ISRO)** and the National Remote Sensing Centre (NRSC) have now published a paper highlighting the significance of 'ejecta halo', which has helped the space agency understand more about the lunar surface.

What is ejecta halo?

- ◆ Ejecta halo is an irregular, bright patch surrounding the lander.
- ◆ **Significance:**
 - ▶ This discovery sheds light on the

behaviour of lunar materials during such events.

- ▶ It opens up new avenues for research and understanding lunar geology.

Vikram Lander's information:

- ◆ The Vikram lander of the Chandrayaan-3 mission landed near the south pole of the moon.
- ◆ During the action of descent stage thrusters and the consequent landing, a significant amount of lunar surficial epi regolith material got ejected, resulting in a reflectance anomaly or ejecta halo",
- ◆ Scientists from Indian Space Research Organisation estimate that about 2.06 tonnes of **lunar epi regolith** were ejected and displaced over an area of **108.4 m²** around the landing site.

What is Regolith?

- It is a blanket of **unconsolidated, loose, heterogeneous** superficial deposits covering solid rock.
- Epiregolith is lunar rocks and soil, or **regolith, or Moon dust.**

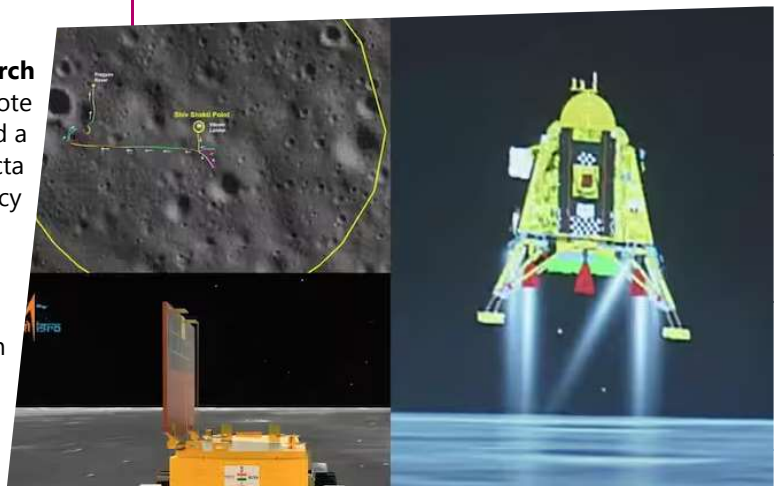


DARK PATTERN SALES DEEMED 'CYBERCRIME'

Context: As per the latest update, the Consumer Affairs Secretary labels the online misconduct carried out by airlines and travel portals as "cybercrime."

About:

- ◆ The Ministry has received nearly **10,000** such complaints through the **National Consumers Helpline** over the last eight to nine months.
- ◆ A dark pattern is one where an **entity nudges**



consumers to buy products they didn't intend to, which is an unfair trading practice, and can constitute a cyber-crime."

- ◆ The current online environment, there seemed to be a systemic practice of fooling consumers.

What are Dark Patterns?

- ◆ Dark patterns refer to design techniques used in user interfaces that manipulate, coerce, or deceive users into taking actions that they might not have intended.
 - ▶ These patterns are crafted to steer user behavior towards actions that benefit the platform or business, often at the expense of the user's interests or without their full understanding or consent.
- ◆ Dark patterns are manipulative design strategies in user interfaces that coerce actions benefiting businesses.
 - ▶ They include trick questions, misdirection, forced continuity obstructing cancellations, sneak into basket by adding unwanted items, and confirm shaming using guilt or pressure for specific choices or personal data sharing, disregarding user interests.

Rules in India against Cybercrimes:

- ◆ **Information Technology Act:**
 - ▶ **Section 66B of the IT Act:** This section pertains to punishment for dishonestly receiving stolen computer resources or communication devices.
 - ▶ **Section 66C and 66D of the IT Act:** These sections deal with identity theft and cheating by personation using a computer resource.
 - ▶ **Section 66E of the IT Act:** It addresses the violation of privacy by capturing, publishing, or transmitting images of private areas of any person without their consent.
 - ▶ **Section 66F of the IT Act:** This section deals with cyber-terrorism, including the planning and commission of acts that threaten the integrity, sovereignty, and security of the nation.
 - ▶ **Section 67 and 67A of the IT Act:** These sections cover offenses related to publishing or transmitting obscene material in electronic form, including child pornography.
 - ▶ **Section 69 of the IT Act:** It empowers government authorities to intercept, monitor, or decrypt any information generated, transmitted, received, or stored in any computer resource.
- ◆ **National Cyber Security Policy (2013):**
 - ▶ This policy aims to safeguard national security

by strengthening the protection of information infrastructure and fostering a secure cyber environment.

- ◆ **Indian Penal Code (IPC):**
 - ▶ Various sections of the IPC, such as Section 420 (cheating) and Section 406 (criminal breach of trust), can also be applied in cases of cybercrimes.



HAEMOGLOBIN ISN'T USED ONLY IN BLOOD: STUDY

Context: A new discovery has revealed that haemoglobin isn't used by RBCs alone and has reported that 'chondrocytes' – cells that make cartilage, the connecting tissue between bones – also make haemoglobin and seem to depend on it for their survival.

About Haemoglobin:

- ◆ Haemoglobin is an **iron-containing protein** in the blood of animals that transports oxygen to the tissues.
- ◆ It is present in RBCs of vertebrates. All vertebrates except **cold-water ice fish** transport oxygen via haemoglobin.
- ◆ Haemoglobin forms an **unstable reversible bond** with oxygen.
- ◆ In oxygenated state, it is called **oxyhemoglobin (bright red)** and in reduced state it is called **deoxyhemoglobin (purple-blue)**.
- ◆ Haemoglobin develops in cells in bone marrow that **become RBCs**.
 - ▶ **RBC (aka erythrocytes)** carries oxygen from lungs to every cell in body.
 - ▶ RBC is covered with a membrane composed of proteins and lipids, lacks a nucleus, and contains haemoglobin.

Points from the research:

- ◆ The researchers observed **spherical structures**, termed "**haemoglobin bodies**" or **Hedy**, within chondrocytes that contained haemoglobin.
- ◆ These structures were crucial for the survival of chondrocytes. When the gene responsible for haemoglobin production was removed in mice, leading to a lack of haemoglobin, the chondrocytes died.
- ◆ The haemoglobin in chondrocytes appears to serve as an oxygen store, releasing oxygen when needed in low-oxygen environments.

- ◆ This finding challenges previous notions about how chondrocytes adapt to low oxygen levels, shedding light on a new mechanism for their survival in regions with limited blood supply.
- ◆ Additionally, haemoglobin was also found in **cartilage outside of growth plates**, such as in the ribs and spine of mice, though its exact function in these regions remains to be determined.

Functions of Chondrocytes:

- ◆ It releases substances to make cartilage strong yet flexible.
- ◆ Haemoglobin in Chondrocytes carries oxygen and is essential for their survival.
- ◆ Haemoglobin in the chondrocytes stores oxygen and supplies it to the cells when required.

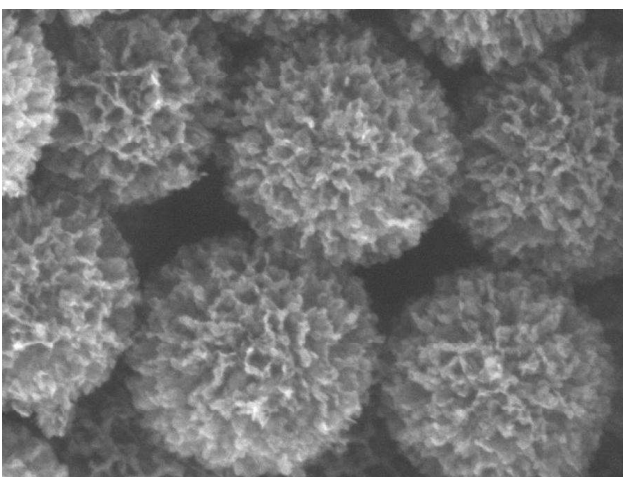
Haemoglobin Associated Diseases:

- **Sickle Cell Anaemia: Haemoglobin S** is a variant form of haemoglobin that is present in persons who have Sickle Cell Anaemia (SCA).
 - ▶ SCA is a severe hereditary form of anaemia in which cells become crescent-shaped when oxygen is lacking.
- **Thalassemia:** A group of inherited blood disorders characterized by a deficiency of haemoglobin.



'CARBON NANOFLORETS' FOR EFFICIENT HEAT CONVERSION

Context: Scientists at the Indian Institute of Technology (IIT), Bombay have made a remarkable discovery in the field of solar energy by developing novel material called carbon nanoflorets that exhibit unprecedented efficiency in converting sunlight into heat.



What are Carbon Nanoflorets?

- ◆ Carbon nanoflorets are novel materials which are **spherical nanostructures** composed of carbon cones and exhibit excellent light-absorbing capabilities.

How they are made?

- ◆ The process begins with a white material called **dendritic fibrous nanosilica (DFNS)** which is heated along with acetylene gas.

Dendritic fibrous nanosilica (DFNS): A white material used in the production of carbon nanoflorets that undergoes a transformation upon heating and reacting with acetylene gas.

- ◆ The white powder undergoes a transformation, turning black as carbon is deposited onto the DFNS surface.
- ◆ Further treatment removes the silicon particles, leaving behind spherical nanostructures composed of carbon cones.

Significance:

- ◆ According to the research conducted at IIT Bombay, carbon nanoflorets have an outstanding efficiency of 87% in converting sunlight into heat.
- ◆ Carbon nanoflorets have the unique ability to absorb not only visible and ultraviolet light but also infrared radiation, which makes up more than half of the energy in sunlight.
 - ▶ Unlike conventional materials, nanoflorets can absorb **visible, ultraviolet, and infrared light**, allowing them to harness a significantly higher amount of energy from sunlight.
- ◆ A **1 square meter coating of nanoflorets** can vaporize **5 liters of water in just an hour**, showing at least five times better efficiency than commercial **solar stills**.

Solar stills:

Devices used for water vaporization using solar energy.

Applications:

- ◆ The potential applications of carbon nanoflorets are vast.
- ◆ They can be used for heating homes in regions with low temperatures, sterilizing surfaces in hospitals, and even in commercial solar stills for water vaporization, with efficiency at least five times better than existing solutions.



ROHINI NAYYAR PRIZE

Context: Deenanath Rajput, a former engineer who transitioned into social work, received the prestigious Second Rohini Nayar Prize for his exceptional dedication to rural development.

Key Points:

- ◆ Deenanath Rajput received the Second Rohini Nayar Prize for his remarkable work in **empowering tribal women in Bastar, Chhattisgarh**.
- ◆ The prize was **presented by N K Singh**, Chairman of the Fifteenth Finance Commission. The jury panel included Dr. Ashok Khosla, Dr. Rajesh Tandon, Renana Jhabvala, and Professor Seeta Prabhu.

About the Award -

- ◆ The award, commemorating the late **economist-**

administrator Dr. Rohini Nayar, included a trophy, a citation, and a cash prize of Rs 10 lakh.



About Deenanath Rajput's Work-

- ◆ He started with a team of three and expanded to 52, focusing on providing **agricultural extension services** to **women farmers** and **establishing cold storage infrastructure**.



Section D [QUIK BYTES]

- ☞ Asia-Pacific Economic Cooperation
- ☞ Mizoram has the highest rate of cancer in India
- ☞ First cases of avian flu found in Antarctic region
- ☞ Nanophotonic Electron Accelerator (NEA)
- ☞ India France Bilateral Naval Exercise 'Varuna' – 2023
- ☞ *Candolleomyces albosquamosus*
- ☞ Global Declaration for River Dolphins

[PERSONALITY IN NEWS]

- ☞ Snow Leopard
- ☞ Saltwater crocodiles
- ☞ Paintbrush swift butterfly

[LOCATION IN NEWS]

- ☞ Aralam Wildlife Sanctuary
- ☞ Kra Isthmus

[SPECIES IN NEWS]

- ☞ Amazon Pink river dolphins
- ☞ *Curcuma kakchingense*

Asia-Pacific Economic Cooperation



Leaders from the **21-member Asia-Pacific Economic Cooperation** forum are going to meet in San Francisco in November for the **30th APEC summit**.

About the Forum:

- APEC was founded in **Canberra in 1989** as an informal dialogue forum to promote regional economic integration.
- APEC membership covers **38% of the global population**, or nearly 3 billion people, about **62% of GDP**, and almost half of global trade.
- APEC says it operates on the basis of non-binding commitments, open dialogue and equal respect for the views of all participants.
- **APEC's members are:**
 - ▶ Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, the Philippines, Russia, Singapore, Taiwan, Thailand, the United States and Vietnam.
- It is unique in grouping member economies rather than nations, allowing participation of Chinese-ruled Hong Kong, as well as self-ruled Taiwan, which China claims as its own.
- It does **not include India**, however, the world's most populous country.

Mizoram has the highest rate of cancer in India



Latest evidence from an 18-year trend study noted a consistent uptick in **cancer incidence and mortality in Mizoram**.

About the study:

- The study was recently published in the **Lancet Regional Health** — Southeast Asia.
- For the study, cancer incidence and mortality data were extracted from the **Mizoram Population Based Cancer Registry (PBCR)** spanning the years 2003–2020.
- PBCR was supported by funding from the **National Centre for Disease Informatics and Research of the Indian Council of Medical Research**.

Key Findings:

- The Study finds that, Cancer Incidence and Mortality is also growing among youth possibly due to;
 - ▶ Lifestyle patterns contributing to a genetic predisposition in an **'endogamous population'**.
- **For Men:** The most prevalent cancer site was the stomach, followed by **head and neck, lung, oesophagus, colorectal, liver, urinary, non-Hodgkin's lymphoma and prostate cancers**.
- **For Women:** Lung cancer exhibited the highest incidence followed by **cervical, breast, stomach, head and neck, colorectal, oesophagus, liver and ovarian cancers**.

First cases of avian flu found in Antarctic region

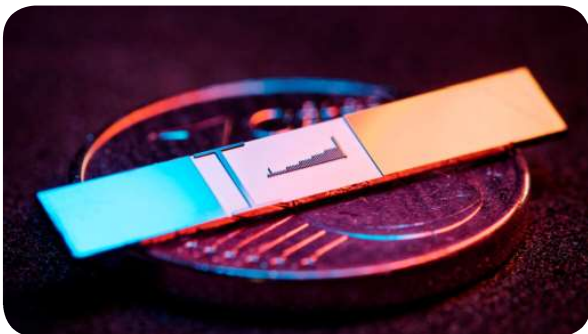


Recently, researchers have identified **avian flu in the Antarctic** for the first time, sparking worries about the impact on isolated **penguin and seal populations**.

Key Findings:

- ▶ The findings by researchers from the **British Antarctic Survey (BAS)** followed reports of several “potentially symptomatic birds and unexplained mortality” and;
- ▶ Further tests confirmed the presence of **Highly Pathogenic Avian Influenza (HPAI)** in Antarctica.
- The HPAI was detected in **brown skua (a predatory seabird)** populations on Bird Island, South Georgia, making it the first known case in the Antarctic region.
- Based on trends, scientists fear HPAI may lead to a decline in the breeding populations of vulnerable fragile wildlife residing in the region.
- According to the researchers’ risk assessment, the most threatened avian group are gulls and skuas.
- They are followed by birds of prey such as hawks and caracaras, terns and shorebirds.
- Among **marine mammals, fur seals and sea lions** are reportedly most vulnerable, followed by **southern elephant seals and dolphins**.

Nanophotonic Electron Accelerator (NEA)



Recently, the Scientists fired up **Nanophotonic Electron Accelerator (NEA)**, world’s smallest particle accelerator.

About:

- NEA consists of a **small microchip** containing an even smaller vacuum tube which is made up of thousands of individual pillars.
- Main goal of creating these accelerators is to utilise the energy given by accelerated electrons in targeted medical treatments for cancer.
- NEA is similar to **Large Hadron Collider (LHC)** as both create a magnetic field to accelerate particles.
- ▶ However, main acceleration tube of NEA (~0.02 inches long) is 54 million times shorter than 27-kilometre ring of CERN’s LHC.
- Also, LHC uses more than **9,000 magnets** to create magnetic fields and NEA works by firing light beams at pillars in vacuum tube.
- Particle accelerators are devices that speed up charged particles, (protons or electrons), at high speeds, close to speed of light.
- They are then smashed either onto a target or against other particles circulating in opposite direction.
- They are essential for fundamental research for an improved understanding of matter, discovery for particle and nuclear physics and for sciences that use x-rays and neutrons.
- They also have applications related to health, environmental monitoring, food quality, etc.

India France Bilateral Naval Exercise 'Varuna' – 2023



Recently, the **Phase II of the Varuna-23 bilateral exercise** took place in the Arabian Sea.

Varuna-23 Naval Exercise in Arabian Sea:

- Participants included guided missile frigates, tanker, Maritime Patrol Aircraft, and helicopters from both Indian and French Navies.
- Objectives:
 - ▶ The exercise focused on joint operations, underway replenishment, and tactical manoeuvres.
 - ▶ Both navies aimed to enhance warfighting skills, improve interoperability, and demonstrate their commitment to regional peace and stability.

Varuna Exercise:

- Initiated in 1993, the bilateral naval exercise between **India and France** was named 'Varuna' in 2001.
- It has evolved over the years, serving as a symbol of the **strong strategic relationship between the two nations.**

Candolleomyces albosquamosus



Researchers identify a **new mushroom species** from the Western Ghats.

About:

- The new species as belonging to the genus *Candolleomyces*, a relatively small genus with just 35 species recognised worldwide.
- The species has been named *Candolleomyces albosquamosus* - 'albosquamosus' for the white woolly scale-like structures on its pileus or cap.
- This mushroom variety grows to a height of just about 58 mm.
- The honey-yellow coloured pileus turns brownish-gray or brownish-beige with age.
- The 'stipe' – the stem or stalk of the mushroom – is white in colour and cylindrical.

In general, mushrooms constitute **secondary saprophytic fungi** of the forest ecosystem.

- Secondary saprophytic fungi play a very important role in the **decomposition of plant litter.**
- This is relevant since the turnover of plant litter in **tropical forests** is huge when compared to **temperate forests.**

Global Declaration for River Dolphins



In a ground-breaking development, **11 Asian and South American countries** recently signed a global declaration, the "**Global Declaration for River Dolphins**," aimed at preserving the world's six remaining river dolphin species.

About:

- This declaration is designed to guide 14 nations where river dolphins inhabit, with a focus on responsible freshwater dolphin conservation.
- It aims to halt the decline of all river dolphin species and increase the most vulnerable populations.
- The declaration will escalate collaborative endeavours to safeguard the surviving river dolphin species.
- Countries that adopted the declaration include Bangladesh, Bolivia, Brazil, Cambodia, Colombia, Ecuador, India, Nepal, Pakistan, Peru, and Venezuela.
- The countries involved agreed to improve water quality in the dolphins' habitat, create protected areas, tackle overfishing, and involve Indigenous communities in the affected regions in protecting the animals.

PERSONALITY IN NEWS

Norman Pritchard



October 30, marks the **death anniversary** of India's **first Olympic medallist**, Norman Peterson Pritchard.

About:

- India's first brush with the Olympics came at the **1900 Paris Olympics** - where **Norman Pritchard** was the country's sole representative.
 - ▶ He won two silver medals - in the **200m sprint and 200m hurdles**.
- He was born in Calcutta (now Kolkata) on January 23, 1875 to parents George Peterson Pritchard and Helen Maynard Pritchard.
- Norman was a **British citizen** who represented India in the 1900 Olympics.
- He took part in the event while holding an **Indian passport and an Indian birth certificate**.
- While there is very written records about Pritchard, **the International Olympic Committee (IOC)** has listed him as an Indian.

LOCATION IN NEWS

Aralam Wildlife Sanctuary

**About:**

- The Aralam Wildlife Sanctuary (AWS) is located in the southeast part of Kannur **District of Kerala** and covers an area of 55 Sq. Km.
- It is located on the **Western Ghats** and it is contiguous with the **Brahmagiri Wildlife Sanctuary of Karnataka**.
- **Nagarhole National Park and Tiger Reserve** lies to the east of Aralam Wildlife Sanctuary.
- **Habitat:** Elephant, wild boar, leopard, mongoose, nilgiri langur, hanuman langur, malabar giant squirrel, etc.

Kra Isthmus



Recently, the initial idea was of a **90-km canal** joining the Andaman Sea and **Gulf of Thailand** has been backed by China.

What is an Isthmus?

- An isthmus is a narrow strip of land that connects two larger landmasses and is bordered by water on two sides.
- It can be a natural formation or an **artificial land bridge**.

About the location:

- The **Kra Isthmus** is a narrow strip **of land in Thailand** that connects the **Malay Peninsula** to the mainland of Asia.
- The Kra Isthmus is located in southern Thailand, separating the Gulf of Thailand to the east from the Andaman Sea to the west.

Kra Canal:

- There have been longstanding discussions and proposals to construct a canal across the Kra Isthmus, known as **the Kra Canal**.
- The idea of constructing a canal across the Kra Isthmus has been discussed for centuries, dating back to the **Ayutthaya Kingdom** in the 17th century.
- This project would involve building an artificial waterway that would link the Gulf of Thailand with the Andaman Sea.
- The canal would potentially revolutionize maritime trade routes in the region.

SPECIES IN NEWS

Amazon Pink river dolphins



The population of pink dolphins in the **Mamirauá Sustainable Development Reserve in Amazon forest** fell by 65 per cent between **1994 and 2016**; dolphins are a good indicator of the degree of conservation of habitat.

About the species:

- The Amazon pink river dolphin is the **largest and smartest** out of the five freshwater species.
- A full-grown dolphin can grow up to **9 feet (2.7 meters) long**, weigh up to 400 pounds (181 kilograms), and live to **30 years old**.
- Their diet is the most diverse amongst toothed whales (especially during the wet season), consisting of more than **53 species**, including piranhas.
- They also have unusually large brains, with **40 percent more brain** capacity than humans.
- While they are known to be **shy creatures**, they are fascinatingly drawn to people, playing curiously with local children, and without demonstrating aggressive behavior.
- They also communicate using high-frequency sonar clicks to build a three-dimensional echogram of their dark riverine world.

Curcuma kakchingense



Three researchers in Manipur recently discovered a new flowering plant species and have named the new species **Curcuma kakchingense**.

About:

- It is a new flowering plant species discovered in Manipur.
- It is a member of the angiospermic family **Zingiberaceae**, which includes well-known plants like Curcuma (turmeric), gingers, and cardamom.
- It is a robust plant, as tall as eight feet, having large terminal inflorescence.
- It bears a striking resemblance to Curcuma longa, known locally as "Yaingung," and Curcuma phrayawan, a species from Thailand, but is distinguished by having lemon-yellow rhizomes with a very bitter taste.

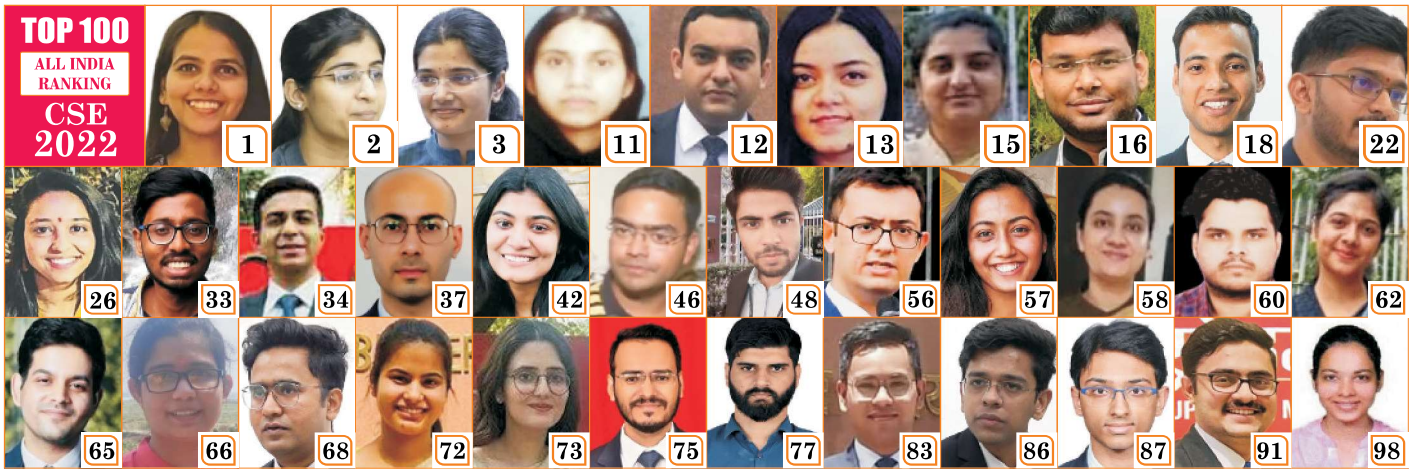
Protection Status:

- It has been classified as "**Data Deficient**" (**DD**) under the IUCN Red List category.

Importance of Curcuma plants:

- Several Curcuma species, including the turmeric (Curcuma longa) are important for their use in cuisines, traditional medicines, spices, dyes, perfumes, cosmetics, and as ornamental plants.
- Curcumin and several curcuminoids found in curcuma species are non-toxic polyphenolic compounds that have biological activities.





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