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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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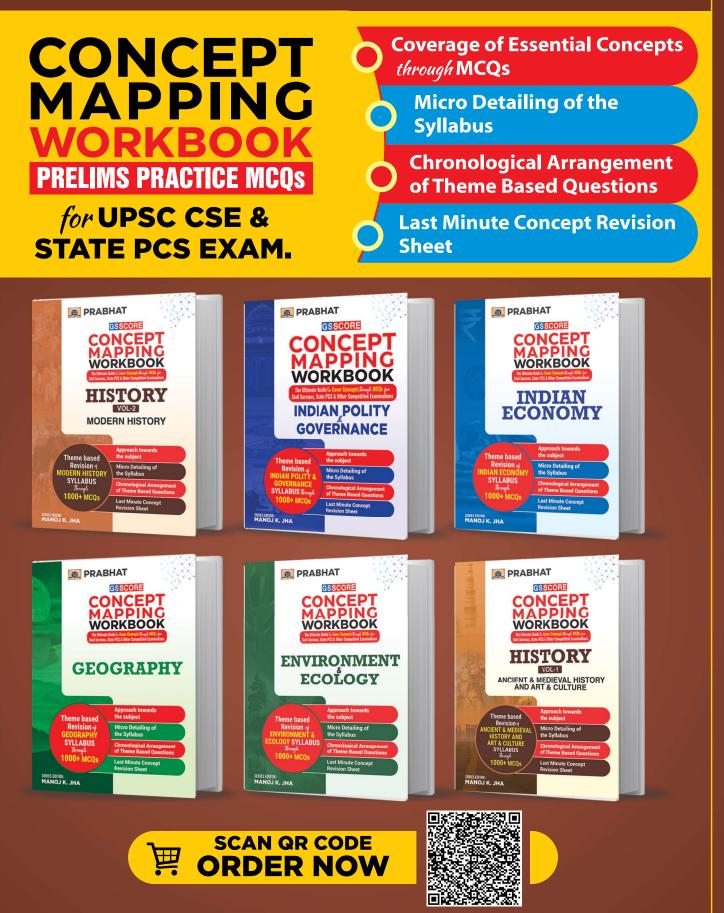
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MENTAL HEALTH ISSUES AMONGST CHILDREN IN INDIA

- Context: As per the National Mental Health Survey (NMHS) conducted in 2015-16, the prevalence of mental disorders among children between ages 13-17 was around 7.3% in both genders, which has been ignored under policies by the government.
- However, the Parliament is yet to develop a framework for a national-level school mental health Programme.

Key Points of consideration from NMHS:

- The survey 2015-16 showed how young children, especially girls, are vulnerable to sexual coercion, unwanted pregnancies, unsafe abortions, physical injuries and digital challenges like cyber-bullying, internet addiction and pornography.
- These risks in turn affect their physical as well as mental well-being.
- 26.8% girls were getting married below the legal age, while 8% of girls between ages 15-19 were already mothers or pregnant.
- The survey also found that 37% of women between ages 15-24 have experienced physical, sexual, or emotional violence by their husbands.

Need to consider mental health of Children:

- As per a report from United Nations International Children's Emergency Fund (UNICEF), any mental health Programme in schools must include five pillars of support —
 - An enabling learning environment,
 - Access to early intervention and mental health services,
 - Teachers' well-being,
 - Targeted mental health programmes using educational workforce in national,
 - State and local levels and meaningful collaboration between school, family and community.
- Under existing educational policies, plans and budgets, UNICEF lays a basic framework

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for how to build a school mental health programmes:

- employ dedicated counsellors
- guarantee access to Tele-health mental health services
- promote government-issued helpline numbers
- maintain sufficient workforce of teaching and non-teaching staff to ensure teacher well-being
- > promote community-based activities
- spread awareness on mental health, its issues as part of school curriculum
- Collaborate with families, communities to better tailor the Programme, monitor children's health
 leading to increased confidence, trust in relationships.
- The UNICEF guidelines are still to be achieved in India.

Issues with mental health Programme in India:

- Severe Shortage of Mental Health Professionals: India faces a critical scarcity of mental health professionals, with inadequate psychiatrists, nurses, and psychologists.
- Lack of Comprehensive School Mental Health Programme (SMHP): Absence of a nationwide SMHP results in limited initiatives, like teacher training and helplines, insufficiently addressing children's mental health.
- Inadequate Government Funding for Mental Health: India allocates only 1.3% of its health expenditure to mental health, a fraction of the total health budget.

Government Initiatives:

♦ In 1982, India launched the National Mental Health





WEEKLY

Programme (NMHP) to ensure access to minimum mental healthcare for all, encourage inclusion of mental health knowledge in general medical services and to promote community participation in mental health service programmes.

- Under the NMHP, the District Mental Health Program (DMHP) was launched in 1996, covering some basic elements — early detection and treatment, training general physicians to diagnose and treat mental illnesses, public awareness and monitoring.
- The National Mental health policy, adopted in 2017, sought to destigmatise mental illnesses, take steps to prevent such illnesses and include those suffering from mental health issues in society.
- In 2018, the government launched the School Health Programme under the aegis of the Ayushman Bharat scheme, launched the same year.

Suggestive Measures:

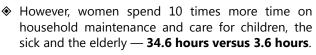
- Focusing on mental health of middle and high school children, the Programme outlines health promotion activities like **meditation and yoga**, bullying prevention, internet safety and media literacy, prevention of substance abuse, violence and mental health awareness.
- Coordination committees at the block, district, State and national levels have been tasked with the implementation of the Programme.
- These committees are to comprise of teachers, district magistrates, education and health officers, state secretaries and Union ministry representatives.

THE MEASURE OF THE WORKING WOMEN

- Context: A report entitled 'Women's Economic Contribution through their Unpaid Work: A Case Study of India' (2009) had estimated the economic value of services by women to be to the tune of a whopping \$612.8 billion annually.
- Women's unpaid work is responsible for 7.5% of GDP. In other words, not only do women shoulder the burden of domestic work, but they also boost the GDP in the process.

Glaring Findings:

The survey found that men spend 42 hours on average on activities within the production boundary, i.e. what is traditionally counted as economic activity, whereas women spend 19 hours.



- Women's unpaid work plays a vital role in the economy:
 - it is responsible for 7.5% of GDP, according to an SBI report. In other words, not only do women shoulder the burden of domestic work, but they also boost the GDP in the process. Yet in the official logs, they are not working.
- A study revealed that approximately 44% of women were part of the labour force when considering a period of four months, but only 2% of women were counted when considering an extended period of four years.
- As per India's first national Time Use Survey released in 2020, it was found that 81.2% of all women are engaged in unpaid domestic services, compared with 26.1% of men.

Implications:

- There are two implications for this: working women face the dreaded "double burden", where working outside the home and contributing to family income does not come with a commensurate reduction in household responsibilities, and the care work that they do spend time on is not counted in the larger economic estimates, leaving us with exhausted women with lower leisure hours in a week than their male counterparts.
- In low-income families, single-income households are often impossibility — both parents work simply because they have to. This means that the model of the breadwinner-caregiver begins to break down. Low-income women are working without support far more often than expected.
- Women's work patterns are seasonal, sporadic and irregular and they often contribute to family businesses from within the home.
- In a broader perspective we can find that Domestic obligations keep them from regular employment. Further there are some social and moral curtains which cover the aspects of working women. A traditional family often discourages women from working. Further there are travelling and security concerns attached with working women.
- It is a truth universally acknowledged that a parent working outside the home must have someone to take care of their child.
- In India, family structures have historically often filled this need, with fathers working outside the home, and mothers providing child care and elder care. However, this model is not conducive to India's growing ambitions. If the country is to grow into a 5 trillion dollars economy, women must be included.



From the socio-economic perspective we can also say that unpaid work often stems from the mentality of families which treat household works as something moral responsibility of women only. The larger implications are that it results in unpaid social work and limiting the financial independence.



What shall be the way ahead?

- Household works or domestic duties shall be given some kind of economic values and financial gains. Further they shall be recognised as larger part of unpaid social work for which government can bring a scheme to compensate them accordingly.
- Giving social and economic recognition will help to develop the financial independence and it will link them with formal economy and thus contribution being more valued. There are two specific ways to get here: women's work, often care work, must be appropriately valued, and women must be adequately supported to participate in economic activity outside the home.
- Governments need to redefine how they assess women's labour. India can champion revising the international System of National Accounts, impacting GDP calculations and Census inquiries. Ignoring women's work hides it, influencing labor and employment policies.
- India, experiencing rapid urbanization, needs new support models for women. Creches are a solution, with around 6,500 operating under the **National Creche Scheme** as of 2020. They empower mothers to pursue stable careers and provide children a safe environment.
- Currently the women's labour force participation rate (FLFPR) in India is 32.8% according to government sources and 24% according to the World Bank, compared to China's 61%, Bangladesh's 38%, Nepal's 29% and Pakistan's 25%. If India wants to raise its FLPR to empower its women, myths around women's work must be dispelled, and women's work must both be counted appropriately and supported fairly.

THEOSOPHICAL SOCIETY

Context: In the history of Modern India, Theosophical society has played a significant role especially in South India. However, still there is less knowledge around its establishment in India and its foreign roots.

So, let us explore a few information regarding the Theosophical society.

Theosophical society:

- The term 'Theosophy,' rooted in Greek, translates to 'Divine Wisdom.' Established in 1875, in New York by Helena Petrovna Blavatsky, Colonel Henry Steel Olcott, the Theosophical Society is a global organization dedicated to fostering spiritual progress, aiming to achieve universal brotherhood transcending all boundaries.
- Its core belief is in the fundamental interconnectedness of all life, encompassing both human and nonhuman beings, recognizing the inherent unity of all existence."
- Based on the ideals of universal brother hood and also Indian philosophical thoughts, the society thought that the spread the movement will be more fruitful if the headquarter is established in India. Thus they established the International Headquarters at Adyar in Madras (currently Chennai) in 1881.

Ideological underpinnings:

- Promoting universal brotherhood of humanity.
- The study of comparative religion and philosophy, especially from the eastern world
- To "investigate unexplained laws of nature and powers latent in man". The society believed that there were powers latent in human beings, which could be brought out through spiritual development.
- It played a key role in reviving the teachings of many ancient Indian texts including Upanishads, Vedas and also occult texts.
- It accepted the Hindu beliefs in reincarnation and karma, and drew inspiration from the philosophy of the Upanishads and samkhya, yoga and Vedanta schools of thought.
- The Theosophical Movement came to be allied with the Hindu renaissance. It opposed child marriage and advocated the abolition of caste discrimination, uplift of outcastes, and improvement in the condition of widows.
- In India, the movement became somewhat popular with the election of Annie Besant (1847-1933) as its president after the death of Olcott in 1907.



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CURRENT AFFAIRS

WEEKLY

Annie Besant- An Irish lady, came to India in 1890's, was made president of theosophical society and also she started Home rule league in India in 1915. The objective of home rule was to have rule by natives under the dominion of British, similarly on the lines of Irish home rule league.

Evaluation of the Movement in India

Religious Revival vs. Western Appreciation

- The Theosophists, although aspiring to revive religious fervor, did not achieve notable success.
- Instead, they found acclaim as Westerners venerating Indian religious and philosophical traditions.

Empowerment and Questionable Pride

- The movement boosted Indian self-esteem amidst the fight against British colonialism.
- However, it sometimes fueled misplaced pride in outdated traditions and philosophies.

A Common Ground

♦ The Theosophical Society acted as a common platform for various sects and met the needs of educated Hindus.

Limitations of Impact

- For the average Indian, Theosophy seemed vague and lacked a clear agenda.
- As a result, its influence was confined to a small, westernized segment of society.

Theosophical Society played a multifaceted role in India. On one hand, it did not achieve significant success as religious revivalists. However, it made a lasting impact by promoting Indian religious and philosophical traditions, thus instilling a sense of self-respect among Indians fighting against British colonial rule. Nevertheless, its role in revitalizing Indian spirituality and heritage remains significant, highlighting the need for the recognition of indigenous traditions. It offered an alternative perspective that encouraged the revaluation of ancient philosophies and traditions in a time when many were inclined to dismiss them as outdated.



Context: Scientists discover a long-lost tectonic plate 'Pontus', an ancient mega-plate that disappeared 20 million years ago.

What is Pontus (Key-Findings)?

Pontus is a tectonic plate that existed around 150 million years ago in the western Pacific.

Size: Called Pontus, the 'mega-plate' was once 15 million square miles, about a quarter the size of the Pacific Ocean today. But over time it was subducted into Earth's mantle and eventually lost.

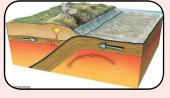
- Name game: Scientists have dubbed it the "Pontus" plate" because at the time of its existence, it sat under an ocean known as the Pontus Ocean.
- **Location:** The plate is known only from a few rock fragments from the mountains of Borneo and the ghostly remnants of its huge slab detected deep in Earth's mantle.
 - In addition to northern Borneo, Pontus plate relics were found in Palawan, an island in the Western Philippines, and the South China Sea.
- The study was published in the journal **Gondwana** Research.

Why did it disappear?

- Pontus has been gradually sub ducted beneath the earth over the last millions of years. Scientists believe this gravitational force came from a neighbouring plate.
- ♦ In the ancient geological past, large plates have since disappeared into Earth's mantle by means of 'subduction'.

Subduction:

Subduction is the geologic process in which one edge of one lithospheric plate is forced below the edge of



another – and over time an entire plate can be lost.

- Crucially, a subducted plate leaves behind traces when it 'sinks' into Earth's mantle namely, fragments of rock hidden in mountain belts.
- It is an on-going process.

What led to the discovery?

- ♦ Background: Scientists predicted the existence of the Pontus about a decade ago. The prediction came after they discovered fragments of old tectonic plates deep in the Earth's mantle.
- In the current study, scientists reconstructed the lost plates by combining field research with extensive investigations of Japan, Borneo, the Philippines, New Guinea, and New Zealand Mountain belts.
 - These areas were believed to be the "most ► complicated plate tectonic region."

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What are Tectonic Plates?

- Plate tectonics is a scientific theory that explains how major landforms are created as a result of Earth's subterranean movements.
- The theory, which solidified in the 1960s, transformed the earth sciences by explaining many phenomena, including mountain building events, volcanoes, and earthquakes.
- In plate tectonics, Earth's outermost layer, or lithosphere—made up of the crust and upper mantle—is broken into large rocky plates.

- These plates lie on top of a partially molten layer of rock called the **asthenosphere**.
- Due to the convection of the asthenosphere and lithosphere, the plates move relative to each other at different rates, from two to 15 centimetres (one to six inches) per year.
- This interaction of tectonic plates is responsible for many different geological formations such as the Himalaya mountain range in Asia, the East African Rift, and the San Andreas Fault in California, United States.

Convergent Boundaries	 A convergent plate boundary is formed by tectonic plates crashing into each other. Convergent boundaries are often subduction zones, where the heavier plate slips under the lighter plate, creating a deep trench. This subduction changes the dense mantle material into buoyant magma, which rises through the crust to Earth's surface. Over millions of years, the rising magma creates a series of active volcanoes known as a volcanic arc.
Divergent Boundaries	A divergent boundary is formed by tectonic plates pulling apart from each other.
Transform Boundaries	 A transform boundary is formed as tectonic plates slide horizontally past each other. Parts of these plates get stuck at the places where they touch. Stress builds in those areas as the rest of the plates continue to move. This stress causes the rock to break or slip, suddenly lurching the plates forward and causing earthquakes. These areas of breakage or slippage are called faults.





Context: Recently, an earthquake of magnitude 6.3 struck Western Afghanistan, after the one struck the Herat province.

Multiple earthquakes within a short duration of time have led to the damage of villages and property in Afghanistan.

About Earthquake:

- An earthquake is the shaking of the surface of the Earth, resulting from the sudden release of energy in the Earth's lithosphere that creates seismic waves.
- Earthquake is the form of energy of wave motion transmitted through the surface layer of the earth.
- It may be due to faulting, folding, plate movement, volcanic eruptions and anthropogenic factors like dams and reservoirs.

Vulnerability of the Region:

Afghanistan is a tectonically complex zone developed as a result of the collision between the **Eurasian plate** and the **Indian plate** to the southeast and the **Arabian plate to the south**. The active tectonics of the country is distinguished by a wide zone of crustal deformation. A few of the reasons include;

- Plate Interactions: Afghanistan is situated at the convergence of the Indian and Eurasian tectonic plates, giving rise to heightened tectonic activity.
- Plate Boundaries: Western Afghanistan experiences subduction of the Arabian plate northward under Eurasia, while the eastern part witnesses similar subduction of the Indian plate.
- Geological Complexity: Hindu Kush mountain range and Pamir Knot, where plates meet, exhibit complex folding and faulting due to the collision and convergence of plates.
- Compression and Earthquakes: Northward movement of the Indian Plate towards Eurasia induces compression, leading to the uplift of the Himalayas and transmission of tectonic stress. This causes crustal deformation, generating earthquakes.

Active Fault Systems in Afghanistan:

- **Chaman Fault**: A significant fault system in Afghanistan known for its seismic activity.
- **Main Pamir Thrust**: Another active fault system contributing to seismic events in the region.



The Location:

- Afghanistan is located in Central Asia with Iran to the west and Pakistan to the east.
- It is a landlocked country located in Southern Asia that borders China, Iran, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan.
- Capital: Kabul
- Official Language: Dari (Afghan Persian), Pashtu
- The geography of Afghanistan is arid and mountainous; the **Hindu Kush Mountains** run northeast to southwest and divide the Northern provinces from the rest of the country.

WAR CRIMES LAWS APPLY TO THE ISRAEL-PALESTINIAN CONFLICT

Context: Internationally accepted rules of armed conflict which have been ratified by all UN member states and supplemented by rulings at international war crimes tribunals is again in light amid tensions between Israel and Palestine.

Let us see how those rules are applicable for **Israel and Palestine**.

What are War Crimes?

- War crimes are defined as serious violations of humanitarian laws during a conflict.
- The definition, established by the Rome Statute of the ICC, is derived from the 1949 Geneva Conventions.
- It is based on the idea that individuals can be held liable for the actions of a state or it's military.



War Crimes vs. Crimes against Humanity:

- The **United Nations Office on Genocide Prevention** and the Responsibility to Protect (or Genocide convention) separates war crimes from genocide and crimes against humanity.
- War crimes are defined as occurring in a **domestic conflict or a war** between two states.
- While genocide and crimes against humanity can happen in peacetime or during the unilateral aggression of a military towards a group of unarmed people.
- The taking of hostages, willful killings, torture or inhuman treatment of prisoners of war, and forcing children to fight are some of the more obvious examples.

Applicability of Rules of War Crime:

- A series of treaties governs the treatment of civilians, soldiers and prisoners of war in a system collectively known as the "Law of Armed Conflict" or "International Humanitarian Law".
- It applies to government forces and organised armed groups, including Hamas militants.
- Palestinian perpetrators of atrocities in Israel and all alleged perpetrators of crimes on the occupied Palestinian territories would be brought under the International Criminal Court (ICC) in The Hague, the only international legal organ able to bring charges.
 - The ICC's founding Rome Statute gives it legal authority to investigate alleged crimes on the territory of its members or by their nationals, when domestic authorities are "unwilling or unable" to do so.

Role of International Criminal Court (ICC):

- It is a permanent judicial body created by the 1998 Rome Statute of the ICC (its founding and governing document), and began functioning on 1st July 2002 when the Statute came into force.
- Headquarter: The Hague, Netherlands
- Members:
 - ► 123 nations are States Parties to the Rome Statute and recognise the ICC's authority.
- The USA, China, Russia, and India are not the members.
- The forum was established as a court of last resort to prosecute offences that would otherwise go unpunished, and has jurisdiction over **four main crimes**: genocide, crimes against humanity, war crimes, and the crime of aggression.

The ICC recognises Palestine as a member state, while Israel rejects the court's jurisdiction and does not formally engage with it.

Acts under serious violations of war crimes laws by Israel and Palestine:

- As per the New York-based Human Rights Watch; the possible war crimes can be;
 - > The deliberate targeting of civilians,
 - > Indiscriminate rocket attacks, and
 - ➤ The taking of civilians as hostages by Palestinian armed groups, as well as the Israeli counter-strikes in Gaza that killed hundreds of Palestinians.

Geneva Conventions (1949):

- The **Geneva Conventions (1949)** and their Additional Protocols are international treaties that contain the most important rules limiting the barbarity of war.
- They protect people who do not take part in the fighting (civilians, medics, aid workers) and those who can no longer fight (wounded, sick and shipwrecked troops, prisoners of war).
 - The first Geneva Convention protects wounded and sick soldiers on land during war.
 - The second Geneva Convention protects wounded, sick and shipwrecked military personnel at sea during war.
 - The third Geneva Convention applies to prisoners of war.
 - ➤ The fourth Geneva Convention affords protection to civilians, including in occupied territory.
- India is a party to the Geneva Convention.

BRI: AN OVERVIEW

Context: Recently, the Third and Road Forum for International Co-operation being convened in China.

What is Belt and Road Initiative (BRI)?

- The BRI is an ambitious plan to develop two new trade routes connecting China with the rest of the world. But the initiative is about far more than infrastructure.
- Often termed as China's Marshall Plan, it is an effort to develop an expanded, interdependent market for China, grow China's economic and political power, and create the right conditions for China to build a high technology economy.





Why create the Belt and Road?

- There are three main motivations for the BRI:
 - ➤ The first, and most discussed internationally, is China's rivalry with the US. The vast majority of Chinese international trade passes by sea through the Malacca strait off the coast of Singapore which is a major US ally.

The initiative is integral to China's efforts to create its own more secure trade routes.

 China's intention is also to make participating nations interdependent with the Chinese economy, and thereby build economic and political influence for China.

BRI has similarities with the Marshall Plan that followed the Second World War – but with the essential difference that China dispenses funding to other nations based purely on shared economic interests.

- ➤ The second key reason for the initiative is the legacy of the 2008 financial crisis. China's government responded to the emergency with a stimulus package, issuing contracts to build railways, bridges, and airports, but saturated the Chinese market in the process. The Belt and Road framework provides an alternative market for China's vast state-owned companies beyond the borders of China.
- ➤ Finally, the Belt and Road is seen as a crucial element in the Chinese government's efforts to stimulate economies of the country's central

provinces, which historically lag behind richer coastal areas. The government uses the Belt and Road to encourage and support businesses in these central regions, allocating budget generously, and encouraging businesses to compete for Belt and Road contracts.

Why is it called the 'Belt and Road' initiative?

The Belt and Road Initiative is a relatively new name. Initially it was referred to as two separate projects, then as the 'One Belt, One Road' initiative, then finally as the Belt and Road Initiative.

The BRI comprises two main components:

The Silk Road Economic Belt and the **21st century Maritime Silk Road**: The Silk Road Economic Belt focuses on improving connectivity and cooperation between China and countries in Central Asia, Europe, and West Asia, while the 21st century **Maritime Silk Road** focuses on strengthening maritime cooperation between China and countries in Southeast Asia, South Asia, and Africa

The Belt:

- The Silk Road Economic 'Belt' element refers to plans for a revitalized series of ancient overland trading routes connecting Europe and Asia to be built largely with Chinese expertise.
- The idea was first proposed by Chinese president Xi Jinping during a visit to Kazakhstan in 2013, and central Asia is seen as the most vital region for the 'Belt' element.



The Road:

- ► In 2014 Xi Jinping outlined plans to additionally establish new sea trade infrastructure along the old Marco Polo route - a maritime silk road connecting China, Southeast Asia, Africa, and Europe.
- This would be a longer route avoiding the Malacca Strait, incorporating fuelling stations, ports, bridges, industry, and infrastructure through Southeast Asia and into the Indian Ocean.
- Pakistan is seen as perhaps the most crucial partner country in this effort through the China Pakistan Economic Corridor project.

Who is funding the Belt and Road Initiative?

- The Chinese state is the underwriter for the initiative, via its four state-owned banks lending to state owned enterprises. Other governments have criticized the Belt and Road for the lack of private sector participation.
- There is, though, a little enthusiasm for the initiative from even the Chinese private sector due to the lack of return on investment.

Challenges related to BRI:

Debt-Trap Challenge-

- > One of the most significant criticisms of the BRI is that it is a debt trap, which involves China lending money to developing countries for infrastructure projects that they cannot afford to repay.
- Critics argue that this leads to countries becoming trapped in a cycle of debt and dependence on China, which can undermine their sovereignty and increase their vulnerability to economic and political pressure from China.

Examples of countries that have experienced debt issues as a result of BRI projects:

- Sri Lanka, for example, was unable to repay its debt for the Hambantota Port project and was forced to hand over control of the port to China on a 99-year lease.
- Djibouti's struggle to repay Chinese loans has also generated criticism on the Chinese model of project financing for creating debt traps for developing countries.
- Pakistan's debt to China has also been growing, with concerns raised about the financial sustainability of the projects and their impact on Pakistan's economy with China investing billions of dollars in infrastructure projects under the China-Pakistan Economic Corridor (CPEC), a key component of the BRI.

China has invested heavily in infrastructure projects in Laos, however, the project has been criticised for its high cost and potential impact on the environment, and concerns have been raised about Laos' ability to repay the loans from China. These are just a few of many such cases.

Political Issues:

- ► Geopolitical rivalries and disputes, such as the India-China border dispute, have affected the implementation of BRI projects in certain regions.
- These political tensions can undermine the initiative's progress.

Environmental and Social Challenges:

► Infrastructure development projects under the BRI have faced criticism for their potential environmental and social impacts. Ensuring that BRI projects are environmentally sustainable and consider the well-being of local communities is a challenge.

Geostrategic Concerns:

The BRI has raised geopolitical concerns, particularly regarding China's growing influence and control over critical infrastructure in partner countries. These concerns have led some countries to reevaluate their participation in the initiative.

India's Concerns wrt BRI:

- ♦ India is of the opinion that the inclusion of the socalled CPEC which passes through parts of the Indian state of Jammu & Kashmir under illegal occupation of Pakistan as a flagship project of BRI, reflects lack of appreciation of India's concerns on the issue of sovereignty and territorial integrity.
- The Indian Government firmly believes that connectivity initiatives must be based on the universally recognized international norms, good governance, rule of law, openness, transparency, and equality, and must be pursued in a manner that respects sovereignty and territorial integrity.

Outcomes of the BRI Forum for International Co-operation:

- The Chinese President brushed aside criticisms and reiterated his commitment to the initiative.
- ♦ Xi also proposed an eight-part action plan on the Belt and Road initiative, including the full removal of restrictions on foreign investment in Chinese manufacturing and an initiative on global artificial intelligence governance.
- BRI was spoken of being the engine that will fuel the growth of third world countries in the coming years.





Context: As per the data revealed by the Union Home Ministry, over the past nine years, of the 407 non-governmental organisations (NGOs) that got approval from the Union government to receive foreign funds for religious purposes, failed to showcase their area of work.

About the information:

- There are several NGOs that have not listed religion as at least one of their purposes, but are perceived to be working in that space.
- The Ministry's annual report of 2020-21 showed that nearly 50% registration requests were denied that year.
- From April 1 to December 31, 2020, the Ministry granted registration to 127 but declined registration to 607 NGOs. Similarly, from April 1 to December 31, 2022, while 51 NGOs were granted FCRA registration, 153 were declined the registration.

Why scrutinizing NGOs is important?

- Registration under the Foreign Contribution (Regulation) Act (FCRA), 2010, is mandatory to receive donations from outside India.
- For this, the NGO or association must have a definite cultural, economic, educational, religious, or social programme, and can register under multiple categories.
- There is a need to take a call for funds and their sources in these organizations are to manage the illegal **source of foreign money** to prevent money laundering.
- While the Act aims at regulating both the "acceptance and utilisation of foreign contribution or foreign hospitality", it can also prohibit organisations from taking in these funds for "any activities detrimental to the national interest".

Foreign Contribution (Regulation) Act (FCRA), 2010:

- The "Foreign Contribution (Regulation) Act" (FCRA) regulates foreign donations and ensures that such contributions do not adversely affect internal security.
- First enacted in 1976, it was amended in 2010 in which a slew of new measures were adopted to regulate foreign donations.

- After the coming of FCRA, in 2010, the FCRA, in 1976 has been repealed.
- The FCRA act is implemented by the Ministry of Home Affairs. It is a mandatory requirement to receive foreign funds.
- Under the new rules notified by MHA in 2015, NGOs are required to give an undertaking that the acceptance of foreign funds is not likely to prejudicially affect the sovereignty and integrity of India or impact friendly relations with any foreign state and does not disrupt communal harmony.

Provisions of the Act:

- The FCRA requires every person or NGO wishing to receive foreign donations to be registered under the Act.
- To open a bank account for the receipt of foreign funds in the State Bank of India, Delhi is mandatory.
- These funds can be utilized only for the purpose for which they have been received, and as stipulated in the Act.
- The receivers of foreign funds are also required to file annual returns, and they must not transfer the funds to another NGO.
- Applicability: The FCRA is applicable to all associations, groups, and NGOs which intend to receive foreign donations. It is mandatory for all such NGOs to register themselves under the FCRA.

Registration under FCRA:

- FCRA registrations are granted to individuals or associations that have definite cultural, economic, educational, religious, and social programmes.
- MHA makes inquiries through the Intelligence Bureau into the antecedents of the applicant and accordingly processes the application.
- The MHA is required to approve or reject the application within 90 days, failing which it is expected to inform the NGO of the reasons for the same.
- Once granted, FCRA registration is valid for five years.
- NGOs are expected to apply for renewal within six months of the date of expiry of registration. In case of failure to apply for renewal, the registration is deemed to have expired.

When is a registration suspended or canceled?

The government reserves the right to cancel the FCRA registration of any NGO if it finds it to be in violation of the Act.

Once the registration of an NGO is canceled, it is not eligible for re-registration for three years.

Concerns:

- Hindering Right to Speech: The FCRA restrictions have serious consequences on both the rights to free speech and freedom of association under Articles 19(1)(a) and 19(1)(c) of the Constitution.
 - > The **Right to free speech** is affected in two ways:
- Create political Biasness: By allowing only some political groups to receive foreign donations and disallowing some others, can induce biases in favour of the government.
 - NGOs need to tread carefully when they criticize the regime, knowing that too much criticism could cost their survival.
- Sesides, given that the right to freedom of association is part of the Universal Declaration of Human Rights (Article 20), a violation of this right also constitutes a human rights violation.
- ♦ In April 2016, the **UN Special Rapporteur on the** Rights to Freedom of Peaceful Assembly and of Association undertook a legal analysis of the FCRA, 2010.
- ♦ It stated that restrictions in the name of "public interest" and "economic interest" as invoked under the FCRA failed the test of "legitimate restrictions".
- ♦ The terms were too vague and gave the state excessive discretionary powers to apply the provision in an arbitrary manner.
- In this context, though it is necessary to regulate corrupt NGOs, there needs to be clarity on terms like public interest.

INDIAai 2023

The Context: Ministry of Electronics and Information Technology has made seven expert working groups, to brainstorm on the vision, objectives, outcomes, and design for each of IndiaAI's pillars, which has submitted its first edition report.

12 About the Report:

The working groups detailed out the operational aspects of establishing Centers of Excellence (CoEs), and the institutional framework on governing data collection, management, processing and storage by the National Data Management Office (NDMO).

♦ The Working groups gave recommendation advocating the **PPP model** that would be leveraged to build so-called "GPU clusters".

GPU clusters masses of resource-intensive graphics processors that are used by AI applications.

- These clusters would be made available to Indian start-ups and researchers.
- ♦ India AI initiative will be applied to areas like "agriculture, healthcare, education, fintech, security, and governance".
- India Dataset Platform, a planned "collection which" will be among the largest and most diverse collections of anonymised datasets for Indian researchers and startups to train their multi-parameter models" will be required.

Propose a National Strategy on Robotics:

- ► The draft strategy recommends fiscal interventions to facilitate local manufacturing of robotics hardware, building of 'demonstration facilities' to test and show off technologies, and building capacity in the robotics sector.
- Draft National Strategy on Robotics was circulated for public input in September.

IndiaAI 2023: The Mission:

- It is a joint venture between the Ministry of Electronics and Information Technology (MeitY), the National e-Governance Division (NeGD), and NASSCOM.
- It is a knowledge portal, research organization, and ecosystem-building initiative focused on preparing the nation for an **AI-driven future.**

Objectives of IndiaAI mission:

- To establish a framework for cooperation and to make Meta's open-source AI models available for use by the Indian AI ecosystem.
- To advance research and development in AI and Emerging Technologies, seeking breakthroughs in AI technology and its applications.
- Establishing a Centre of Excellence to nurture the startup ecosystem of AI and other Emerging Technologies.
- Building datasets in Indian Languages to enable translation and large language models, prioritizing low-resource languages to foster social inclusion and improve government service delivery.
- Enhance accessibility to AI compute resources for researchers, startups, and organizations with limited resources.



What is Artifical Intelligence?

- Artificial Intelligence (AI) is a branch of computer science that involves developing intelligent machines that can perform tasks that typically require humanlike intelligence, such as visual perception, speech recognition, decision-making, and language translation.
- AI technologies are designed to learn, reason, and self-correct, making them highly useful for automating routine tasks, solving complex problems, and optimizing decision-making processes

Semiconductors and AI:

- The semiconductor market has, for most of the last decade, seen much of its profits tied to the smartphone and mobile device market.
- As the smartphone market begins to plateau, the semiconductor industry must find other growth opportunities.
- AI applications, especially in the big data, autonomous vehicles, and industrial robotics industries, can provide those opportunities.
- By defining and then putting together their AI strategies now, semiconductor manufacturers can position themselves to take full advantage of the spreading AI market.

Recent Interventions:

- INDIAai, a knowledge portal and research organization in India's AI ecosystem, has partnered with Meta India.
- The MoU aims to establish a framework for collaboration and cooperation in the field of AI and emerging technologies.
- Focus on Indian Languages: A major focus of the collaboration is on building datasets in Indian languages to enable translation and large language models.
 - Priority will be given to low-resource languages, which can foster social inclusion and improve government service delivery.

Challenges of Artificial Intelligence (AI)

- Skilled workforce: There is a shortage of skilled professionals in the AI industry in India and the demand for skilled professionals still outstrips the supply.
- Data quality and availability: The lack of standardization and structure in data sets, particularly in sectors like healthcare and education, can limit the effectiveness of AI solutions.

- Infrastructure: The availability of computing infrastructure is essential for the development and deployment of AI solutions and India needs to invest in improving its computing infrastructure to support the growing demand for AI solutions.
- Funding: Despite the potential benefits of AI, funding for AI startups and research in India is relatively low compared to other countries for which more funding is needed to support the development and growth of the AI industry in India.
- Ethical and social implications: AI can have significant ethical and social implications, such as bias, privacy concerns, and job displacement.

Importance of Artificial Intelligence (AI) for India

- Economic Growth: AI is expected to contribute significantly to India's economic growth by creating new job opportunities, increasing productivity, and fostering innovation.
- Healthcare: AI has the potential to revolutionize the healthcare sector by improving patient outcomes, increasing efficiency, and reducing costs through better disease diagnosis, drug development, and personalized treatment.
- Education: AI can enhance the quality of education by providing personalized learning experiences, automating administrative tasks, and improving student outcomes.
- Agriculture: AI can improve agricultural practices by optimizing crop yields, reducing waste, and increasing profitability through accurate weather predictions, soil analysis, and crop monitoring to help farmers make informed decisions.
- Governance: AI can help in improving governance by increasing transparency, reducing corruption, and improving service delivery by better fraud detection, resource allocation, and decision-making.

SHIFTING TO MILLETS INCREASES GROUNDWATER RECHARGE: STUDY

Context: According to a new study, Switching from rice to pearl millet (bajra) and sorghum during the Kharif season and shifting from wheat to sorghum (jowar) in the Rabi season could lower water consumption in the Indo-Gangetic Plains (IGP) by 32 per cent and boost farmers' profits by 140 per cent.



About the Study:

Six researchers from the Indian Institute of Technology Bombay, University of Delaware, Columbia University and Yale School of the Environment analyzed crop shifting's prospect in 124 districts of three states: Uttar Pradesh, Bihar and West Bengal — covering the upper, middle and lower Ganga basin in the agricultural belt of India.

Stretching from Punjab in the west to West Bengal in the east, **Indo Gangetic Plane (IGP)** is the most populated region in the country, with a population of **400 million people**.

- Need: The Ganga basin has seen significant groundwater depletion in recent years, raising questions about the sustainability of present agricultural practices.
 - Among the solutions proposed to address this unsustainable water consumption, crop switching has received growing attention.
- The study discussed that the cereal crops (rice, wheat, maize, bajra, sorghum and barley), which cover 52 per cent of the total crop area accounts for 50 per cent of the total water consumption in the three states of the IGP region.
- They also highlighted that continuing with the same crop with drip irrigation improves net groundwater recharge by 34 per cent, whereas changing crop practices improves net recharge by 41 per cent.

Irrigation and declining groundwater:

- Groundwater depletion in India is a major concern because it is the primary source of drinking water.
- Some of the main causes of groundwater depletion in India include over-extraction of groundwater for irrigation, urbanisation, and climate change.

According to the **Central Ground Water Board** (**CGWB**) of India, approximately 70% of the total water used in India is from groundwater sources. However, the CGWB also estimates that around 25% of the country's total groundwater extraction is unsustainable, meaning that it is being extracted at a faster rate than it can be replenished.

Major Causes of Groundwater Depletion in India:

Over-extraction of Groundwater for Irrigation: Irrigation accounts for around 80% of total water use in India, and much of this water is sourced from groundwater.

- As demand for food continues to grow, more and more groundwater is being extracted for irrigation, leading to depletion.
- Climate change: Rising temperatures and changing precipitation patterns can alter the recharge rates of groundwater aquifers, making them more vulnerable to depletion.
 - Draughts, flash floods, and disrupted monsoon events are recent examples of climate change events that are placing pressure on India's groundwater resources.
- Poor Water Management: Inefficient use of water, leaky pipes, and inadequate infrastructure for capturing and storing rainwater can all contribute to groundwater depletion.
- Decrease in Natural Recharge: The natural recharge of groundwater aquifers can be decreased by factors such as deforestation, which can lead to soil erosion and reduce the amount of water that is able to seep into the ground and replenish the aquifers.

Impacts:

- Water Scarcity: As groundwater levels drop, there may not be enough water available for domestic, agricultural, and industrial use. This can lead to water shortages and conflicts over water resources.
- Land Subsidence: When groundwater is extracted, the soil can become compacted, leading to land subsidence (the sinking or settling of the land). This can cause damage to infrastructure, such as roads and buildings, and can also increase the risk of flooding.
- Environmental Degradation: Depleting groundwater can also have negative impacts on the environment. For example, when groundwater levels drop, it can cause saltwater intrusion in coastal areas, leading to the contamination of freshwater resources.
- Economic Impacts: Groundwater depletion can also have economic impacts, as it can lead to reduced agricultural production and increased costs for water treatment and pumping.
- Lack of Depletion Data: Indian government regulates groundwater exploitation by "notifying" highly overexploited blocks in water-stressed states.



Context: Recently, the Central Board of Direct Taxes (CBDT) has directed its officers to not carry out scrutiny of 'angel tax' provisions for start-ups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT).



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What is Angel Tax for Start-ups?

Angel tax – which is income tax at the rate of 30.6 per cent – is levied when an unlisted company issues shares to an investor at a price higher than its fair market value.

Background:

- Earlier the angle tax was imposed only on investments made by a 'resident investor'.
- However the Finance Act 2023 proposed to extend angel tax even to non-resident investors from April 1, 2023.
- In a directive issued in this accordance, the tax department has asked its field officials to not do verification for the recognized start-ups for cases pertaining to Section 56 (2) (viib) of the Incometax Act, which was amended in the Finance Act, 2023 bringing in non-resident investors also under the angel tax levy.

Section 56(2)(viib) of **Income-tax Act** pertains to taxing **unlisted companies**, including start-ups, for **receiving equity investment exceeding face value**. It aims to curb generation of unaccounted money.

What are the updated provisions regarding Angle-tax for Start-ups?

- DPIIT-Recognized Start-ups Exempt from Angel Tax Scrutiny: CBDT's directive specifies that startup companies recognized by DPIIT (Department for Promotion of Industry and Internal Trade) are exempt from scrutiny related to amended provisions of angel tax.
 - DPIIT-Recognized Start-ups: Being recognized by DPIIT can provide various benefits and exemptions, including relief from certain innovation, scalability, and potential to create employment taxes and compliance requirements.

Procedure for Assessment of Start-ups Outlined:

- ➤ For start-up companies under scrutiny solely for the applicability of section 56(2)(viib) of the Income-tax Act, Assessing Officers will not verify this issue during proceedings under section 143(2) or 147/143(2) of the Act.
- The contention of recognized start-ups on this matter will be summarily accepted.

Exclusion of Section 56(2)(viib) During Multi-Issue Scrutiny: In cases where start-up companies are under scrutiny for multiple issues, including section 56(2)(viib), this specific section will not be pursued during the assessment proceedings for such start-up companies.

Provision related to Angel Tax under Finance Act 2023:

- Amendment of Section 56(2)(viib): Finance Act 2023 modified the 'angel tax' provision to include foreign investors in start-up funding taxation.
- Exemption for Recognized Start-ups: DPIITrecognized start-ups were excluded from angel tax, sparing them from this tax liability.
- Final Valuation Rules for Investors: Finance Ministry established valuation rules, including methods like DCF, for resident and non-resident investors in unlisted companies.
- Exemption for Investors from Certain Countries: Angel tax was waived for investors from 21 countries, but countries like Singapore, Netherlands, and Mauritius were excluded.

Central Board of Direct Taxes (CBDT):

- It is a **statutory authority** functioning under the Central Board of Revenue Act, 1963.
- The CBDT is a part of the Department of Revenue in the Ministry of Finance.
- Functions:
 - Its functions include formulation of policies, dealing with matters relating to levy and collection of direct taxes, and supervision of the functioning of the entire Income Tax Department.
 - CBDT also proposes legislative changes in direct tax enactments and changes in rates and structure of taxation in tune with the policies of the Government.
- Structure: The CBDT is headed by Chairman and also comprises of six members, all of whom are exofficio Special Secretary to the Government of India.
 - Member (Income Tax)
 - Member (Legislation and Computerization)
 - Member (Revenue)
 - Member (Personnel & Vigilance)
 - Member (Investigation)
 - Member (Audit & Judicial)

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GOVERNMENT LAUNCHES 'GREEN CREDIT' PROGRAMME

Context: Recently, the Government has introduced Green Credit Programme, where an individual or entity can earn green credit and trade it on a dedicated exchange.

'Green Credit' refers to a unit of an incentive **provided** for a specified activity; delivering a positive impact on the environment.

About the Programme:

- A Green Credit programme is being launched at the national level to leverage a competitive marketbased approach for green credit for incentivizing environmental actions of various stakeholders.
- This programme is a follow-up action of the 'LiFE'-(Lifestyle for Environment) campaign.

The notification by **Ministry of Environment, Forest** and **Climate change** has clarified that the Green Credit Programme is independent of the **carbon credit** provided under the **Carbon Credit Trading Scheme, 2023** which was made under the **Energy Conservation Act, 2001**.

- However, an environmental activity generating green credit may have climate co-benefits, such as reduction or removal of carbon emissions and an activity generating green credit under Green Credit programme may also get carbon credit from the same activity.
- This programme will cover 8 types of activities:
 - Tree plantation which is meant to promote activities for increasing the green cover across the country.
 - Water management is meant to promote water conservation, water harvesting, and water use efficiency or water savings, including treatment and reuse of wastewater.
 - Sustainable agriculture is meant to promote natural and regenerative agricultural practices and land restoration to improve productivity, soil health, and nutritional value of food produced.
 - Waste management is meant to promote circularity, sustainable and improved

practices for waste management, including collection, segregation, and environmentally sound management.

- ➤ Air pollution reduction is meant to promote measures for reducing air pollution and other pollution abatement activities.
- And mangrove conservation and restoration, which is meant to promote measures for conservation and restoration of mangroves.

Process of registration:

- One needs to register the activity with the Administrator electronically through a website to avail green credit.
- The activity will then be verified by a designated agency and based on its report the Administrator shall grant the applicant a certificate of green credit.
- The calculation of green credit in respect of any activity undertaken shall be based on equivalence of resource requirement, parity of scale, scope, size, and other relevant parameters required to achieve the desired environmental outcome.

♦ Significance:

- The Programme will incentivise environmentallypositive actions through a market-based mechanism and generate green credit, which shall be tradable and made available for trading on a domestic market platform.
- ➤ The initiative aims to encourage industries, companies, and other entities to meet their existing or other obligations, under any law that is in force for the time being and encourage other persons and entities, to undertake voluntary environmental measures by generating or buying green credit.
- However, the green credit generated or procured to fulfill any obligation, in compliance with any law, that is in force for the time being shall not be tradeable.



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LARGE OZONE HOLE DETECTED OVER ANTARCTICA

Context: As per a latest update, the Satellite measurements over Antarctica have detected a giant hole in the Ozone layer.

About the information:

- The hole also called as "ozone-depleted area" was identified of around 26 million square kilometers (10 million square miles) in size, roughly three times the size of Brazil.
- The European Space Agency Copernicus Sentinel-5P satellite made the recordings, as part of the EU's environmental monitoring program.

The Ozone Layer:

- Ozone is a special form of oxygen, made up of three oxygen atoms rather than the usual two oxygen atoms.
- ♦ It usually forms when some type of radiation or electrical discharge separates the two atoms in an oxygen molecule (O2), which can then individually recombine with other oxygen molecules to form ozone (O3).
- The ozone layer is a trace gas in the stratosphere, one of the four layers of the Earth's atmosphere.
- It functions as a protective gas shield that absorbs ultraviolet radiation, protecting humans and ecosystems from dangerous amounts of UV.

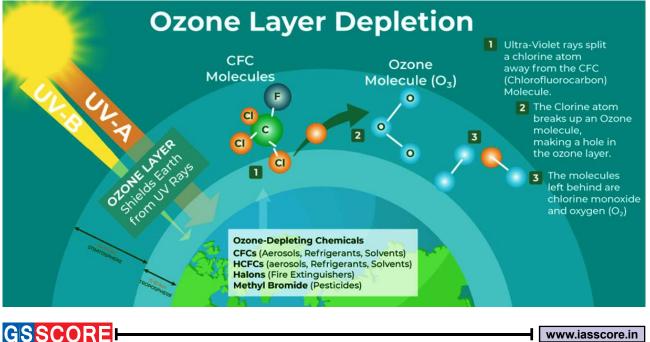
Most skin cancers are caused by exposure to high amounts of UV radiation, so anything that shields us from UV rays helps reduce cancer rates.

What is Ozone hole?

- ♦ An ozone hole is the thinning of the ozone layer boosted in size by colder temperatures.
- ♦ As the temperature high up in the stratosphere starts to rise, ozone depletion slows; the polar vortex weakens and breaks down.
- ♦ By the end of December, ozone levels return to normal. This time around, however, the process took longer.
- ♦ The formation of ozone hole in the Antarctic has been an annual occurrence and has been recorded for the last 40 years.
- Human-made chemicals migrate into the stratosphere and accumulate inside the polar vortex.
- ♦ It begins to shrink in size as warmer temperatures dominate.

The science behind Human induced ozone depletion:

- ♦ Ozone depletion occurs when chlorofluorocarbons (CFCs) and halons (gases formerly found in aerosol spray cans and refrigerants) are released into the atmosphere.
- ♦ Ozone sits in the upper atmosphere and absorbs ultraviolet radiaton, another type of solar energy that's harmful to humans, animals and plants.
- CFCs and halons cause chemical reactions that break down ozone molecules, reducing ozone's ultraviolet radiation-absorbing capacity.



Factors contributing to natural Ozone depletion:

- Volcanic eruptions
- Increase in Ocean temperature
- Antarctica's atmospheric action
- Planetary Winds over Antarctica

Does always Ozone layer depletion is Human caused?

- According to scientists, the size of the ozone hole over Antarctica fluctuates each year, opening each year in August and closing again in November or December.
- Ozone hole opens up because of the rotation of the Earth causing specials winds over the closed landmass of Antarctica.
- The winds create a mini climate, creating a shield over Antarctica preventing it from mixing with surrounding air. When the winds die down, the hole closes.

GLOBAL HYDROGEN REVIEW 2023

- Context: According to release of the Global Hydrogen Review 2023 by the International Energy Agency (IEA), despite increasing global political support, green hydrogen (Biohydrogen) constitutes less than 1 per cent of the world's hydrogen production and usage.
- As per the report, to align with the IEA's Net Zero Emissions (NZE) Scenario, green hydrogen capacity must grow more than **100 times by 2030**.

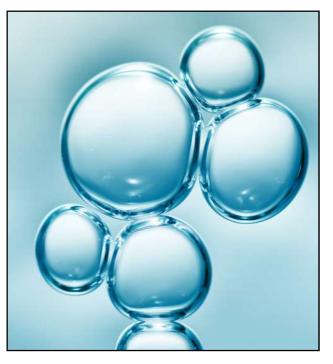
What is Green hydrogen?

- Green Hydrogen is colourless, odourless, tasteless, non-toxic and highly combustible gas.
- Hydrogen is the lightest, simplest and most abundant member of the family of chemical elements in the universe.
- Green hydrogen is produced through electrolysis using renewable sources of energy such as solar, wind or hydel power.

Ways to extract Hydrogen:

In the natural environment, hydrogen is not readily available in its pure form as it forms compounds with other elements like oxygen and carbon.

- It exists within various compounds, including water, biomass and hydrocarbons.
- Different pathways have been developed to extract hydrogen from these compounds, and these methods are categorised into conventional and renewable technologies based on the raw materials used.



Green hydrogen is India:

- Under the Paris Agreement (a legally binding international treaty on climate change with the goal of limiting global warming to below 2°C compared to pre-industrial levels) of 2015, India is committed to reducing its greenhouse gas emissions by 33-35% from the 2005 levels.
- At the 2021 Conference of Parties in Glasgow, India reiterated its commitment to move from a fossil and import-dependent economy to a net-zero economy by 2070.
- In order to become energy independent by 2047, the government stressed the need to introduce green hydrogen as an alternative fuel that can make India the global hub and a major exporter of hydrogen.
- India has just begun to generate green hydrogen with the objective of raising non-fossil energy capacity to 500 gigawatts by 2030.
- In April 2022, the public sector OIL, which is headquartered in eastern Assam's Duliajan, set up India's first 99.99% pure green hydrogen pilot plant in keeping with the goal of "making the country ready for the pilot-scale production of hydrogen and its use in various applications".



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- The plant was set up at the petroleum exploration major's Jorhat pump station, also in eastern Assam.
- Powered by a 500 KW solar plant, the green hydrogen unit has an installed capacity to produce 10 kg of hydrogen per day and scale it up to **30 kg per day**.

International Energy Agency (IEA):

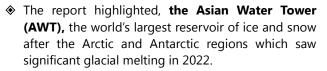
- The International Energy Agency is an autonomous Intergovernmental Organisation.
- The IEA was established in 1974 by developed countries under the auspices of the Organization for Economic Co-operation and Development (OECD) in response to the oil embargo.
- IEA is made up of **30 member countries** and eight associate nations.
 - Four countries are seeking accession to full membership - Chile, Colombia, Israel and Lithuania.
- India became an Associate member of IEA in March 2017 but it was in engagement with IEA long before its association with the organization.
- The **World Energy Outlook report** is released by the IEA annually.
- Its purpose is guided by **four main areas** of focus:
 - Energy security
 - ► Economic development
 - Environmental awareness
 - ► Global engagement

WORLD'S WATER CYCLE SEVERELY IMPACTED BY CLIMATE CHANGE: WMO

Context: As per World Meteorological Organization (WMO's) State of Global Water Resources 2022 report, the ongoing melting of snow, ice and glaciers compounded the threat, exacerbating the risk of extreme weather events such as floods.

Findings of the Report:

- According to WMO, the circulation of water in the Earth-Atmosphere system has been significantly impacted by climate change and human activities.
- The effect on the hydrological cycle is leading to droughts and extreme rainfall events and the erratic water cycles unleashed widespread disruption, burdening livelihoods and economies.



These alterations impacts the natural downward flow of major rivers — the Indus, Amu Darya, Yangtze and Yellow River in the region.

AWT covers the **Third Pole**, which includes the **Tibetan Plateau**, the Himalayas, the Karakorum, the Hindu Kush, the Pamirs and the Tien Shan Mountains.

- The increasing pace of glacial melting in AWT, which provides a reliable water supply to almost two billion people, highlighted the deepening influence of climate change on regional water resources.
- Report emphasized SDG 13 (climate adaptation) by focusing on climate-related impacts on water systems and calling for mitigation actions.

What is Hydrological cycle?

- Hydrological cycle is also known as the "water cycle" is the normal water recycling system on Earth.
- The hydrologic cycle involves the continuous circulation of water in the Earth-Atmosphere system.
- At its core, the water cycle is the motion of the water from the ground to the atmosphere and back again.
- Of the many processes involved in the hydrologic cycle, the most important are: Evaporation, Transpiration, condensation, precipitation and runoff.
- Process:
 - Due to solar radiation, water evaporates, generally from the sea, lakes, etc. Water also evaporates from plant leaves through the mechanism of transpiration.
 - As the steam rises in the atmosphere, it is being cooled, condensed, and returned to the land and the sea as precipitation.
 - Precipitation falls on the earth as surface water and shapes the surface, creating thus streams of water that result in **lakes and rivers**.
 - ➤ A part of the water precipitating penetrates the ground and moves downward through the incisions, forming aquifers.
 - Finally, a part of the surface and underground water leads to sea.
 - During this trip, water is converted in all phases: gas, liquid, and solid.



WEEK - 3 (OCTOBER., 2023)

Factors affecting Hydrological cycle:

Physical factors:

- Relief the steeper the slope, the more quickly water will reach the river.
- Vegetation (Type and density) the more vegetation there is, the more will be absorbed/ intercepted and then transpired back into the atmosphere.
- Size of basin- water comes from a bigger area so more water is in the cycle compared to other areas.
- Rock type: Some rocks are more permeable than others (allow water to pass through them). Some rocks are better at storing water.

Human factors:

► Forestry, Urbanisation, Mining, Deforestation, Reservoir/dam building and Irrigation.

Impacts:

Ecological Disruption:

- Altered Habitats: Changes in the water cycle can lead to alterations in natural habitats. For instance, droughts can lead to the drying up of wetlands and rivers, affecting the flora and fauna that depend on these ecosystems.
- ➤ Loss of Biodiversity: Disruptions can result in habitat loss and degradation, reducing biodiversity. Some species may struggle to adapt or find new suitable habitats, leading to a decline in population numbers.
- Invasive Species: Altered water flow patterns can facilitate the spread of invasive species. These species, which are not native to an ecosystem, can outcompete native species and disrupt local food chains.

Human Socioeconomic Impacts:

- Water Shortages and Conflicts: Disruptions in the water cycle can lead to water shortages, sparking conflicts over access to this vital resource. This is particularly pronounced in regions with limited water resources.
- Economic Losses: Industries dependent on water, such as tourism, fishing, and manufacturing, can face economic losses due to disruptions in water availability and quality.
- Health Risks: Changes in water availability can impact public health, as inadequate water supply can lead to sanitation issues and the spread of waterborne diseases.
- Infrastructure Vulnerability: Infrastructure designed based on historical water patterns may become vulnerable to extreme events, such as flooding, if those patterns change.

SINKING ISLANDS OF INDIA

Context: The National Green Tribunal (NGT) has decided to issue notices to the Coastal Management **Authorities** Zone (CZMAs) in the coastal States and Union Territories asking it to consider recommendations including the made by an expert panel on the issue of dangers of sea level rise and submergence of low-lying lands into the Integrated Island Management Plans (IIMPs).

About:

- NGT asks coastal zone authorities to integrate expert panel recommendations into island management plans.
- The Principal Bench of the tribunal issued an order stating that the suggestions incorporated in the panel report need to be looked into for preparation/ amendment of the IIMPs.
- The committee had recommended island-specific sustainable development and tourism policy keeping the climate risks in mind.

Why are some islands in India sinking?

- India has a fragile network of over 1,382 islands.
- However, several of these islands are under threat due to unseasonal cyclonic storms, sea erosion and new development projects.
- One such island in Lakshadweep has entirely disappeared from the map.
- So, let us take a look at islands across the country that are under threat:

Lakshadweep

- Lakshadweep has a land area of just 32 sq.km. And a population of 70,000.
- Lakshadweep lagoons cover an area of 4,200 sq.kms.
- A group of scientists in 2021 urged the Central govt. to rethink the water villa project steered by NITI Aayog. They feared it would destroy the lagoons.
- Coastal constructions and unseasonal cyclones are causing soil erosion.

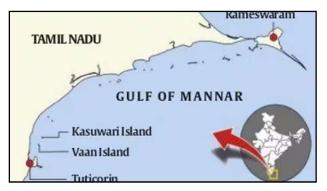
According to a study, waters surrounding **the archipelago** are expected to rise **by 0.78 mm each year** in the 2080-2100 period. Smaller islands may therefore experience loss of land along the coast.



ARABIAN INDIA CHETLAT CANNANORE KILTA BANGARAM KADMAT AMINE S ANDROTT AGATT CALICUT KAVARATTI KALPEN 398 Km MINICOY

Vaan island

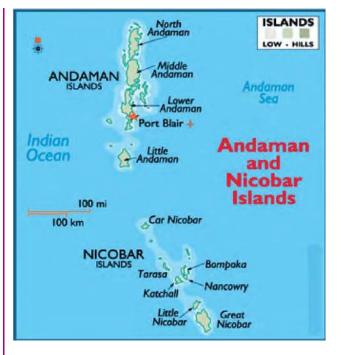
Vaan Island is located 6 kms from Thoothukudi coast, Tamil Nadu.



- This island in the **Gulf of Mannar** almost vanished from the map, about a decade ago.
- A team of underwater researchers have been working in the Gulf of Mannar for 25 years to reverse the damage caused by large scale coral mining till the 1990s.
- In 2013, Vaan Island split into two. The northern part submerged as the waves hit the islet directly in the absence of corals, causing rapid erosion.

Andaman and Nicobar islands

- The light house at Indira Point in the Andaman and Nicobar islands sank about four metres during the tsunami of 2004.
- In the Nicobar Islands, 97% of the mangrove cover was lost.
- The region witnessed over 450 earthquakes in the last 10 years.
- The sea level rise here is estimated to be 5mm per year, way higher than the global average.



WEEK - 3 (OCTOBER., 2023)

Ghoramara

- Ghoramara is located at the southernmost part of West Bengal.
- The tall palm trees on the edge of the island struggle to hold on to the depleting soil.
- One of the sources of income in this island was betel leaf cultivation.
- Before cyclone Yaas in 2021, there were about 550 units of betel leaf plantations.

Majuli island

- Majuli is in Assam, India's first island district.
- Its current geographical area is 483 sq. kms. But Majuli used to be 1,250 sq. km. before 1950.
- Reasons for this reduction: riverine erosion and embankments on the southern bank of the Brahmaputra.
 - Paddy and mustard cultivation has suffered and so has fishing that was once a major source of income for many in Majuli.

Munroe Thuruthu

- Munroe Thuruthu Island in Kerala is witnessing steady deterioration.
- The island is ravaged by constant tidal flooding and ground subsidence. The once-fertile island now resembles a saline swamp and agriculture is nearly impossible.
- The researchers say that the lack of freshwater, sediment from the Kallada River, and the presence

of several saline pools have been affecting both soil fertility and groundwater quality.

Impacts of Sinking Islands:

- Making Tribal Population living in the regions and Islands homeless, as some of them were living there for centuries.
- Species loss: The sinking islands can drain a few indigenous species native to the region/island by habitat destruction.
- Mangrove Loss: The islands in West Bengal and Odisha are already facing mangrove loss in the sinking island.

Way Forward:

- Shifting to safer places: Indonesia recently changed its capital from Jakarta to Borneo due to the fear of submergence of the world's fastest sinking city, i.e, Jakarta.
- Mitigation of effects: The native government must take steps to curb the impacts and prepare resources availability such as for agriculture and water management.
- Community awareness: People also not living in that place must understand the need of urgency and steps to be taken as soon as possible.

MICROALGAE AND CLIMATE CHANGE

Context: According to research findings of Nature Microbiology, microalgae are firing up a light-responsive protein to use sunlight for growth, which is enhancing in the contemporary times of climate change.

About Microalgae:

- Microalgae, which form the base of the food chain in the ocean and capture carbon dioxide from the atmosphere, appear to rely on a unique strategy to cope with global warming.
- As climate change reduces the availability of nutrients in the sea, marine microalgae or eukaryotic phytoplankton fire up a protein called rhodopsin.
- ♦ It is related to the protein in the human eye responsible for vision in dim light.
- This light-responsive protein is helping the microalgae flourish with the help of sunlight in place of traditional chlorophyll.

Impact of Climate Change on Microalgae:

- As climate change reduces the availability of nutrients in the sea, marine microalgae or eukaryotic phytoplankton fire up a protein called **rhodopsin**.
- ✤ It is related to the protein in the human eye responsible for vision in dim light.
- This light-responsive protein is helping the microalgae flourish with the help of sunlight in place of traditional chlorophyll.

Microbial Rhodopsins:

- They are proposed to be major light capturers in the ocean.
- Estimates suggested they may absorb as much light as chlorophyll-based photosynthesis in the sea, which also captures light to generate energy and food.
 - However, their biological role in these organisms was unclear before the study.
- Global warming is increasing drought on land and the same thing happens in the ocean, the warmer the surface water gets, the lower are the nutrients in these surface water layers.
- There is less mixing between the surface waters and nutrient-rich deeper waters as the oceans warm.
 - ➤ So nutrients become scarce at the surface, impacting the primary producers such as microalgae that are present in the top layer.
- Algae starve and, therefore, produce less food and capture less carbon dioxide from the atmosphere.
- In these areas, the capacity of algae to make food and take up carbon dioxide should be much more reduced similar to reduced crop yield on land if ironand nitrogen-rich fertilisers are scarce.

The Role of Rhodopsins:

• For algae to produce food and to remove carbon dioxide from the atmosphere, they need sunlight. To harness sunlight, the microalgae require a lot of iron. However, **35 per cent** of the surface of the ocean does not have enough iron to support the growth of algae.

The Location of phenomena:

- This phenomenon is particularly relevant for the Southern Ocean, which is the largest iron-limited aquatic ecosystem.
- But they are home to the largest populations of consumers such as krill, fish, penguins and whales, which depend on primary producers such as microalgae.



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CURRENT AFFAIRS

Way Forward:

- According to the researchers, these phenomena have the potential to reduce the negative effects of changing environmental conditions, such as ocean warming and even the reduction in the productivity of crops.
- The same mechanism could be deployed to enhance the activity of microbes that cannot use light, such as yeast.
- It can be modified so that they can use light for growth, which is desirable in biotechnology, such as the production of insulin, antibiotics, enzymes, antivirals and even biofuel.



INDIA'S CAR-T CELL THERAPY GETS MARKET AUTHORISATION

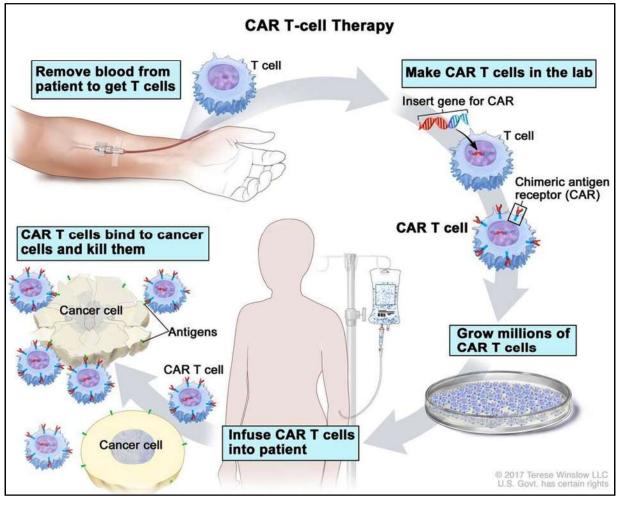
Context: The Immunoadoptive Cell Therapy Private Limited (ImmunoACT) has announced the approval of India's first chimeric antigen receptor (CAR) T-cell therapy by the Central Drugs Standard Control Organization (CDSCO) for treating leukaemias (cancers arising from the cells that produce white blood cells) and lymphomas (arising from the lymphatic system).

What is Chimeric Antigen Receptor (CAR) T-cell Therapy?

- ♦ It is a type of cancer immunotherapy treatment.
- Unlike chemotherapy or immunotherapy which involve taking drugs, CAR T-cell therapies use a patient's own cells.
- They are modified in the laboratory to activate T-cells and target tumor cells.

Procedure:

- T cells are taken from a patient's blood and then the gene for a special receptor that binds to a certain protein on the patient's cancer cells is added to the T cells in the laboratory.
- The special receptor is called a chimeric antigen receptor (CAR). Large numbers of the CAR T cells are grown in the laboratory and given to the patient by infusion.



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Monocyte

What are T Cells?

- T cells, also known as **T lymphocytes**, are a type of white blood cell that plays a central role in the immune response.
- T cells are involved in **cell-mediated immunity**, which means they help the body recognize and respond to foreign substances, such as **viruses**, **bacteria**, and abnormal cells, such as cancer cells.
- There are two major types of T cells: the helper T cell and the cytotoxic T cell.
- As the names suggest, helper T cells 'help' other cells of the immune system, whilst cytotoxic T cells kill virally infected cells and tumors.

 TYPES OF BLOOD CELLS

 1. Red Blood Cells

 (Erythrocytes)

 Image: Delta Color

 Helps in O2 and CO2 exchange

 C. White Blood Cells

 (Leukocytes)

 Image: Delta Color

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Need for such T-cell Therapy:

- Systemic therapy such as chemotherapy, which attacks cancer cells due to their fast growth.
 - Chemotherapy drugs have limited success and significant side effects because they affect many types of cells in the body.
- Other treatments also known as immunotherapy, which work by binding to specific targets on the cancer or immune cells supporting its growth.
 - This approach is less toxic as it affects fewer nontumor cells, but only works on tumours that have these targets.
- Thus, using own living cell becomes an idea.

Role of Central Drugs Standard Control Organization (CDSCO):

- Under the Drug and Cosmetics Act, the regulation of manufacture, sale and distribution of Drugs is primarily the concern of the State authorities while the Central Authorities are responsible for approval of New Drugs, Clinical Trials in the country, laying down the standards for Drugs, control over the quality of imported Drugs, coordination of the activities of State Drug Control Organisations and providing expert advice with a view of bring about the uniformity in the enforcement of the Drugs and Cosmetics Act.
- Drug Controller General of India is responsible for approval of licenses of specified categories of Drugs such as blood and blood products, **I. V. Fluids**, **Vaccine and Sera.**
- Central Drugs Standard Control Organization functions under the **Directorate General of Health Services**.



Basophil

Fights against infections

Context: Recently, the Scientists have proposed a new evolutionary law that can explain the evolution of living and nonliving entities, from minerals to stars.

Lymphocyte

Highlights of the study:

Eosinophil

Neutrophil

- The study aims to establish a relationship between evolution of living beings, minerals and stars.
- As life evolved from single-celled to multi-celled organisms, Earth's minerals, also became more complex, creating diversity. This, in turn, drove biological evolution.
- The researchers proposed that evolution occurs when a new configuration or a new arrangement of atoms and molecules works well and functions improve.
- In contrast to Darwin's theory of evolution, it defined function as primarily with survival but the new study highlights at least three kinds of functions that occur in nature.
 - ➤ The first function is stability, which means systems made up of stable arrangements of atoms or molecules will continue to survive.
 - The second one includes dynamic systems with energy supply.
 - ➤ The third is "novelty" the tendency of evolving systems to explore new configurations or arrangements that can give rise to new behaviours or characteristics.

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An example of novelty is when **single-celled organisms** evolved to use light to make food.

Other examples include new behaviours among multi-cellular species such as swimming, walking, flying and thinking.

- Similarly, early minerals on Earth possessed a stable arrangement of atoms, which acted as foundations for the evolution of the next generations of minerals.
- These minerals were then incorporated into life. For example, minerals are present in living organisms' shells, teeth and bones.
- As for stars, the first ones that formed after the Big Bang had two main ingredients: Hydrogen and helium.
 - Those earliest stars used these ingredients to make about 20 heavier chemical elements.
 - The next generation of stars consequently produced almost 100 more elements.
- The universe generates novel combinations of atoms, molecules, cells, etc.
- Those combinations that are stable and can go on to engender even more novelty will continue to evolve.

What does the Evolution mean?

Evolution is a process of gradual development in a particular situation or thing over some time and also a gradual change in the characteristics of a population of animals or plants over successive generations.

What are the evidences of evolution present?

- The evidences supporting organic evolution are derived from a number of fields of Biology. Those discussed here are:
 - Morphological evidences
 - Embryological evidences
 - Palaeontological evidences
 - Molecular evidences

Mechanism of Evolution:

- Various theories about the mechanism of evolution have been proposed; some of them such as Lamarck's theory of "Inheritance of acquired characters" and De Vries' theory of 'mutation' are now of historical importance only.
- Darwin's theory of Natural selection: It still holds ground but was modified with progress in genetics and developed into the Modern synthetic theory

which is regarded as the most valid theory of evolution.

According to Darwin "when the environment changes, new adaptations get selected in nature and after many generations sufficient characteristics will have been changed so as to alter the species into a new one (origin of species)."

Modern Synthetic Theory:

- The unit of evolution is 'population' which has its own gene pool.
 - Gene pool is the group of all different genes of a population.
- Heritable genetic changes appear in the individuals of a population. These heritable changes or variations occur due to small mutations in the genes or in the chromosomes and their recombination.
- Natural selection selects the variations which help in adapting to the environment.
- A change in the genetic constitution of a population selected by natural selection is responsible for evolution of a new species, since through interaction of variation and Natural Selection more offspring's with favourable genetic changes are born. This is called 'differential reproduction'.
- Once evolved, Reproductive Isolation helps in keeping species distinct.

Sources of organic variation:

- Variation arises in an individual member of a population, and if favourable, spreads into the population through "differential reproduction" by the action of natural selection.
- Variations may occur by;
 - Mutation, which is a sudden genetic change. It may be a change in a single gene (genic mutation or point mutation) or may affect many genes (chromosomal mutation).
 - Genetic recombination, which occurs in sexually reproducing organisms at every reproduction. The chromosomes and thus genes of the parents mix at random during zygote formation.
 - Gene flow is when there is chance mixing of genes of closely related species through sexual reproduction.
 - Genetic drift occurs in small populations when a part breaks off from a large population. Only representative genes of the large population are present which undergo change at a right time and the small population may evolve into a new subspecies or species.



THE EXPLOSION OF DIGITAL UNCERTAINTY

Context: Recent advances in Generative Artificial Intelligence (AI) have captured the imagination of the public, businesses and governments alike. It is a new threat that the world is contemplating now; but this is only the beginning

It is almost certain that this wave of AI will lead to fundamental changes in the skills landscape, and implicitly, in terms of underlying threats and dangers.

Why it's a threat?

- Digital infrastructure is built on layers upon layers of omniscient machine intelligence, human coded software abstractions, and undependable hardware components. Each of the layers interconnects through complex and deeply embedded protocols. The narrow aperture of understanding of such aspects means that the vast majority of people are ignorant of the implications. Even less understood is that complexity of this kind begets vulnerabilities.
- There is an exponential explosion of digital uncertainty. Few are able to fully comprehend the nature of the new threat, the likes of which have not been witnessed in past decades, if not centuries. Few also realise the grave implications of what it means to have our lives and our economies run on what may be described as fertile digital topsoil. Even fewer realise the kind of intrinsic problems that result from this.
- Manipulation is a threat which hampers with decision making abilities, among other aspects, this manipulation by news media by powerful non-state actors poses huge risks. It entails the art of using technological tools to alter the cognition of human targets, which are often unaware of such attempts.

Disrupting Decision-Making

Manipulation of Information: One significant challenge lies in the deliberate manipulation of information by powerful nonstate actors through news media. This involves using advanced technological tools to influence the perception and decisions of unsuspecting individuals.

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- Erosion of Trust: The consequences of such manipulation can be profound, including the erosion of trust among individuals and institutions. Breaches of confidentiality and the undermining of governance capabilities further compound the issue.
- Behavioral Control: More alarmingly, this manipulation has the potential to alter the behavior of entire populations through sophisticated psychological techniques. Such control over public behavior poses ethical and democratic dilemmas.
- Resource Drain: Governments and their agencies are dedicating substantial resources to combat the effects of misinformation and disinformation. However, there's a growing realization that this might not be sufficient. The full extent of how AI-driven technologies are contributing to this information manipulation is not yet entirely understood.
- Truth Decay: These concerns contribute to what can aptly be termed "truth decay." The reliability and integrity of information are being systematically compromised, raising significant ethical concerns in a world increasingly dependent on data and information.
- Ethical Considerations: In addressing these issues, ethical considerations play a vital role. Safeguarding the integrity of information, ensuring transparency in data manipulation, and respecting individual autonomy are ethical imperatives. Striking a balance between maintaining a free flow of information and preventing malicious manipulation is a complex ethical challenge that governments, tech companies, and society as a whole must confront.

The unimaginative aspect of Artificial General Intelligence (AGI)

♦ If AI is the grave threat that the world is currently contemplating, we are only witnessing the tip of the iceberg. As growing numbers of people — cognitively and psychologically — become dependent on

digital networks, AI is able to influence many critical aspects of their thinking and functioning. What is simultaneously exhilarating and terrorising is the fact that many advances in AI are now being birthed by the machine itself.

- Sooner rather than later, we will witness the emergence of Artificial General Intelligence (AGI) — Artificial Intelligence that is equal and or superior to human intelligence, which will penetrate whole new sectors and replace human judgement, intuition and creativity.
- There is real fear that it could alter the very fabric of nation-states, and tear apart real and imagined communities across the globe. Social and economic inequalities will rise exponentially. Social anarchy will rule the streets as we see happening in some of the cities closest to the epicentre of technological innovation. It has an inherent capacity to flood a country with fake content masquerading as truth, and for imitating known voices with false ones that sound eerily familiar. This could lead to a breakdown of the concept of trust.
- AGI will enable highly autonomous systems that outperform humans in many areas, including economically (valuable) work, education, social welfare and the like. AGI systems will have the potential to be able to make decisions that are unpredictable and uncontrollable which could have unintended consequences, often with harmful outcomes.

- It would enhance inequalities and exacerbate social disparities, and worsen economic disparities. Reining in, or even halting, the development of the most advanced forms of AGI, or disallowing unfettered experimentation with the technology may not be easy, but the alternative is that it has the potential to shape the nature of the world in a manner well beyond what can be anticipated. Today, AGI seems to imitate forms of reasoning with a power to approximate the way humans think.
- The lesson to be learnt is that an over-dependence on AI and a belief in its invincibility could prove to be as catastrophic as 'locking the gates after the horse have bolted'. Further with AI and its advancements the victim is ones right to privacy and biasedness which can be given to AI. AI algorithms can inherit biases present in their training data. This can result in discriminatory outcomes.
- The impending advent of Artificial General Intelligence (AGI) represents a turning point, where AI becomes equal to or even surpasses human intelligence. While this promises great advancements, it also harbors the potential to disrupt the fabric of society. AGI's unpredictability and autonomy in decision-making could lead to unintended and harmful consequences, aggravating inequalities and social disparities.
- As we journey into an AI-driven future, balancing innovation with ethical responsibility is paramount to ensure a harmonious and equitable coexistence with this transformative technology.

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Section B [SPECIALS]

Торіс

CVS Supreme Court's decision on Same-sex marriages

SUPREME COURT'S DECISION ON SAME-SEX MARRIAGES

Context: A majority view on a five-judge Constitution Bench of the Supreme Court refuses to legalise 'same-sex marriages' or 'civil unions' in India mentioning that non-heterosexual couples cannot claim an unqualified right to marry.

Law

Global Scenario:

- Today, at least 12 nations allow civil unions or registered partnerships for homosexual couples.
- Croatia, the Czech Republic, Greece, Hungary, Italy, Slovenia, and Estonia have such laws.
- Austria, Sweden, Norway, Brazil and Chile are among the nations that **first** recognised the right of same-sex couples to enter into civil unions before recognizing their **legal right to marriage**.

Timeline of the LGBTQIA+ Movement in India:

- During British rule in 1860, homosexual intercourse was considered unnatural and was declared a criminal offence under Chapter 16, Section 377 of the Indian Penal Code (IPC).
- After independence, on November 26, 1949, the **Right to Equality** was implemented under Article 14 but homosexuality still remained a criminal offence.
- Decades later, on August 11, 1992, the first known protest for gay rights was held.
- In 1999, Kolkata hosted India's first Gay Pride Parade. The parade, with only 15 attendees, was named Calcutta Rainbow Pride.
- In 2009, a landmark Delhi High Court decision in the Naz Foundation v. Govt. of NCT of Delhi case held that treating consensual homosexual consummation between adults as a crime is a violation of fundamental rights protected by India's Constitution.

In the Suresh Kumar Koushal and another v. NAZ Foundation and others case in 2013, the Supreme Court overturned the Delhi High Court Naz Foundation v. Govt. of NCT of Delhi case and reinstated Section 377 of the Indian Penal Code.

30 In late 2015, MP Shashi Tharoor introduced a bill to decriminalise homosexuality but it was rejected by the Lok Sabha. In August 2017, the Supreme Court upheld the right to privacy as a fundamental right under the Constitution in the landmark Puttuswamy judgement. This gave renewed hope to LGBT activists.

- On September 6, 2018, the Supreme Court ruled unanimously that Section 377 was unconstitutional "in so far as it criminalises consensual sexual conduct between adults of the same sex".
- The battle against Section 377 has ended but the bigger battle for equal rights for the LGBT community is still ongoing.

Recent views of the Supreme Court (SC):

- Two judges including the CJI gave their views in favour of same-sex marriage, mentioning that "Discrimination on the basis of sexual orientation is violative of Article 15 of the Constitution".
- The minority views of the two judges held that the 'Right to enter into a union' cannot be restricted on the basis of sexual orientation.
- The majority views of Justices S.R. Bhat, Hima Kohli and P.S. Narasimha disagreed on the point, holding that it was for the legislature, and not the Court, to formally recognise and grant legal status to nonheterosexual relationships.
- Justice Bhat disagreed with the Chief Justice's interpretation that the right to form a civil union by same sex couples flowed from their right to choose a partner, right to life and free expression.

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But all the five judges on the Bench agreed that the Special Marriage Act of 1954 was not unconstitutional for excluding same-sex marriages.

Court's final Verdict:

- The court highlighted that; it cannot initiate the construction of a "parallel framework" of the institution of marriage. Such recognition was not based on law.
- The court has broadly ordered that it was for the Parliament and State legislature to enact laws on such marriage.
- The court urged the government to form a highpowered committee chaired by the Union Cabinet Committee to expeditiously look into genuine human concerns faced by same-sex partners.
- Also they suggested that the committee should look into whether queer couples could be treated as members of the same family for the purpose of ration card; succession; maintenance; opening of a joint bank account; arrangement of last rites of partners; access benefits of rights and benefits of employment, etc.
- It also clearly mentioned that **Right to marry** is not a Fundamental Right under Article 21 or Article 15.

The right to marriage was a **statutory right** or flowing from a custom.

How union of Couple is defined in Indian Laws?

- A "civil union" is a legal status that bestows upon same-sex couples some rights and responsibilities which are allowed to heterosexual married men and women.
- Civil union gives couples employment, inheritance, property and parental rights. However, there are some differences between a marriage and a civil union.

Central Government's say:

- During hearings in the case, the Centre had submitted that it would set up a committee headed by the Cabinet secretary to look into practical difficulties faced by same-sex couples.
- These include getting rights to Provident Fund, and pension benefits among others.

Earlier Views of Supreme Court on Same-Sex Marriages:

Marriage as a Fundamental Right (Shafin Jahan v. Asokan K.M. and others 2018):

- ➤ While referring to Article 16 of the Universal Declaration of Human Right and the Puttaswamy case, the SC held that the right to marry a person of one's choice is integral to Article 21 of the Constitution.
- Article 16 (2) in the Indian constitution provides that there cannot be any discrimination on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them.
- The right to marry is intrinsic to the liberty which the Constitution guarantees as a fundamental right, as the ability of each individual to take decisions on matters central to the pursuit of happiness. Matters of belief and faith, including whether to believe are at the core of constitutional liberty.
- LGBTQ Community Entitled to all Constitutional Rights (Navjet Singh Johar and others v. Union of India 2018):
 - ➤ The SC held that members of the LGBTQ community "are entitled, as all other citizens, to the full range of constitutional rights including the liberties protected by the Constitution" and are entitled to equal citizenship and "equal protection of law".

What is the Special Marriage Act?

- The Special Marriage Act (SMA), 1954 is an Indian law that provides a legal framework for the marriage of people belonging to different religions or castes.
- It governs a civil marriage where the state sanctions the marriage rather than the religion.
- The Indian system, where both civil and religious marriages are recognized.
- Applicability: The applicability of the Act extends to the people of all faiths, including Hindus, Muslims, Sikhs, Christians, Sikhs, Jains, and Buddhists, across India.
- Recognition of Marriage: The Act provides for the registration of marriages, which gives legal recognition to the marriage and provides a number of legal benefits and protections to the couple, such as inheritance rights, succession rights, and social security benefits.
 - It forbids polygamy and declares a marriage null and void if either party had a spouse living at the time of the marriage or if either of them is incapable of giving valid consent to the marriage due to unsoundness of mind.
- Written Notice: Section 5 of the Act specifies that the parties must give written notice to the Marriage Officer of the District and that at least one of the

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parties must have lived in the district for at least 30 days immediately before the date of such notification.

- Section 7 of the Act allows "any person to object to the marriage before the expiration of 30 days from the date of the notice's publication."
- Age Limit: The minimum age to get married under the SMA is 21 years for males and 18 years for females.

LGBTQAI+ Community:

- The LGBTQAI+ acronym stands for Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and Asexual and others.
- They are the people who don't identify with cisgender heterosexual "ideals".
- In India, the LGBTQIA+ community also includes a specific social group, a distinct community: the Hijras.
- They are culturally defined either as "**neither men**, **nor women**", or as men who behave like a woman.
- At present they are referred to as **the Third Gender**.

Issues related to 'Third Gender' in India

- Discrimination in the educational setup and workplace: The majority of the people in this community is either illiterates or has less education, because of which they are not able to get involved much in the educated section of the society.
 - According to a census which was conducted in 2011 the population of transgender people was 4.9 lakhs and in which only 46% of people were literate which is extremely less compared to the normal population which has a **literacy rate of** 74%.
- Social exclusion: Since the transgender communities lack education and employment opportunities they are looked upon as a lower class by society resulting in exclusion.
 - Their self-esteem and self-confidence hit really hard because of this exclusion and they end up taking undesirable jobs.
- Lack of legal protection and victims to hate crimes: The Transgender community is not legally protected as much as any other community and because of this;

they are easily victimized for the crimes that they didn't even commit. They undergo a **lot of violence and become victims of hate crimes.**

High Unemployment rate: According to the right to education act, they are categorized as a 'disadvantage group' which means they have 25% reservation as an economically weaker section.

Suggestions:

- Raise Awareness: The purpose of awareness campaigns is to promote equality and acceptance of all sexual orientations and expand public opinion about the LGBTQIA+ community.
- Legal Reforms: Amendments in the Special Marriage Act, 1954 to allow same-sex couples to legally marry and enjoy the same rights and benefits as oppositesex couples.
 - Meanwhile bring the contract like agreement so that homosexual people can enjoy similar rights like heterosexuals.
- Dialogue and Engagement: Engaging in a dialogue with religious leaders and communities can help bridge the gap between traditional beliefs and modern attitudes towards same-sex relationships.
- Legal Challenges: The Indian LGBTQIA+ community can challenge the constitutionality of the current laws that prevent same-sex marriage in court. Such legal challenges can help establish a legal precedent that will pave the way for the legalization of same-sex marriage.
- Collaboration: The legalisation of same-sex marriage requires a concerted effort from all stakeholders, including the LGBTQIA+ community, the government, civil society, and religious leaders.
 - By working together, we can create a more inclusive society where everyone has the right to love and marry whomever they choose, regardless of their gender.

Conclusion:

Our country has passed an act (Transgender protection act) that aims at protecting their rights and they are not subjected to any kind of discrimination in **healthcare**, **education**, **and employment**. Our responsibility as civilians is to treat them equally and give them equal respect as any other gender.

Section C [PRELIMS]

To Attempt _

Weekly Current Affairs Test, Visit

- cs Centre objects priority to 'Money Bill' hearing
- cos Armed Forces Tribunal (AFT)
- cs Energy Efficiency Services Limited (EESL) e-commerce portal
- Global Hunger Index (GHI) 2023
- Cos World Food Day 2023
- Cos India's bid to host 2036 Olympics
- CS Periodic Labour Force Survey for 2022-23
- **CS** Radiation Detection Equipment (RDE)
- cs Lao PDR becomes second country in 2023 to eliminate 'lymphatic filariasis'

CENTRE OBJECTS PRIORITY TO 'MONEY BILL' HEARING

Context: The Central Government took objection to the seven-judge bench of the Supreme Court (SC) giving priority to the Rojer Mathew vs. South Indian Bank Ltd and Others case, which deals with the question of Money Bill.

Background:

- The matter of the Money Bill courted controversy after the Centre passed the Aadhaar Act in 2016.
- The Centre had introduced the Aadhaar Bill in the Parliament as a Money Bill.
- It was alleged that since the government lacked majority in the **Rajya Sabha**, it introduced the Bill as a Money Bill to circumvent the Upper House.
- Similar allegations were leveled for amendments made to the Prevention of Money Laundering Act (PMLA).
- In 2019, while looking into the validity of the Finance Act, 2017 as a Money Bill, a five-judge bench of the Supreme Court went through the Aadhaar judgement and observed that it did not discuss the significance of the word "only" in Article 110(1).
- The five-judge bench then referred the batch of matters to a larger constitutional bench.

What is a Money Bill?

- According to Article 110, a "Money Bill" is a bill comprising laws governing taxes, the government's borrowing policies, and the use of funds from the Consolidated Fund of India.
- A money bill India involves the imposition, abolition, remission, change, or regulation of any tax, according to the Constitution.

Constitutional Provisions:

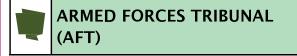
- According to the constitution of India, a bill is referred as Money bill if the below given situation arises;
 - Imposition, abolition, remission, alteration or regulation of any tax;
 - Regulation of the borrowing of money or the giving of any guarantee by the Government of India, or the amendment of the law with respect to any financial obligations undertaken or to be undertaken by the Government of India;
 - Custody of the Consolidated Fund or the Contingency Fund of India, the payment of

moneys into or the withdrawal of moneys from any such Fund;

- Appropriation of moneys out of the Consolidated Fund of India;
- Declaring of any expenditure to be expenditure charged on the Consolidated Fund of India or the increasing of the amount of any such expenditure;
- Receipt of money on account of the Consolidated Fund of India or the public account of India or the custody or issue of such money or the audit of the accounts of the Union or of a State; or
- ► Any matter incidental to any of the matters specified in sub-clauses (a) to (f).
- A Bill shall not be deemed to be a Money Bill by reason only that;
 - It provides for the imposition of fines or other pecuniary penalties, or
 - > For the demand or payment of fees for licences or
 - Fees for services rendered, or by reason that it provides for the imposition, abolition, remission, alteration or
 - Regulation of any tax by any local authority or body for local purposes.

Note: If any question arises whether a Bill is a '**Money Bill'** or not, the decision of the **Speaker of the House** of the People thereon shall be final.

There shall be endorsed on every Money Bill when it is transmitted to the Council of States under Article 109, and when it is presented to the President for assent under Article 111, the certificate of the Speaker of the House of the People signed by him that it is a Money Bill.



Context: Recently, the Supreme Court (SC) has refused to interfere with the transfer of Justice Dharam Chand Choudhary, who was a judicial member with the Armed Forces Tribunal from Chandigarh to Kolkata.

About the case:

- Justice Choudhary's transfer led to protests and a strike by the AFT Chandigarh Bar Association, asserting it as an infringement on the tribunal's judicial independence.
- The association sought Chief Justice Chandrachud's intervention, terming the transfer a direct challenge to the tribunal's autonomous functioning.

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PRELIMS WEEK - 3 (OCTOBER., 2023)

Armed Forced Tribunal (AFT):

- It is a Statutory Body, made under The Armed Forces Tribunal Act 2007, which was passed by the Parliament.
- The Body provides power for the adjudication or trial by Armed Forces Tribunal of disputes and complaints with respect to commission, appointments, enrolments and conditions of service in respect of persons subject to the Army Act, 1950, The Navy Act, 1957 and the Air Force Act, 1950.
- It can further provide for appeals arising out of orders, findings or sentences of courts- martial held under the armed forces Acts and for matters connected therewith or incidental thereto.
- Besides the Principal Bench in New Delhi, AFT has Regional Benches at Chandigarh, Lucknow, Kolkata, Guwahati, Chennai, Kochi, Mumbai, Jabalpur, Srinagar and Jaipur.
- With the exception of the Chandigarh and Lucknow Regional Benches, which have three benches each, all other locations have a single bench.
- Members of the Tribunal:
 - Each Bench comprises of a Judicial Member and an Administrative Member.
 - The Judicial Members are retired High Court Judges and Administrative Members are retired Members of the Armed Forces who have held rank of Major General/ equivalent or above for a period of three years or more.

Judge Advocate General (JAG), who has held the appointment for **at least one year** are also entitled to be appointed as the Administrative Member.

- The Tribunal shall transact their proceedings as per the Armed Forces Tribunal (Procedure) rules, 2008.
- All proceedings in the Tribunal will be in **English**.
- The Tribunal will normally follow the procedure as is practiced in the High Courts of India.
- The dress as mandated for the officials of the Tribunal including bar will be white shirt, collar band and a black coat/ jacket.

ENERGY EFFICIENCY SERVICES LIMITED (EESL) E-COMMERCE PORTAL

Context: The Energy Efficiency Services Limited (EESL), a joint venture of public sector undertakings (PSU) under the Ministry of Power, will set up an e-commerce portal that will exclusively feature electric appliances with the highest efficiency ratings.

About the initiative:

- Aim: The objective of the exercise would be to "create demand" and encourage consumers to opt for electric cookers, fans, refrigerators and other devices that were rated "five star and above".
- The portal would initially be for businesses to trade among themselves and later be expanded to wider, retail sales.
- The EESL is affiliated to the Bureau of Energy Efficiency (BEE) that has for years run a 'star-rating' system for electric appliances with the highest-rated appliances having '5 stars'.
- The BEE has made this rating mandatory for 15 appliances and voluntary for 20 appliances for 2023.
- Ratings are usually only valid for a fixed period.

The agency **includes or excludes** appliances from the list as it deems necessary from time to time.

Need of such an initiative: India has committed to double its energy efficiency by 2030 from 2.2% to 4%.

Significance:

 As the BEE claims that its rating system, over the years, has prevented 300 million tonnes of CO2.

Bureau of Energy Efficiency (BEE):

- The Government of India has set up Bureau of Energy Efficiency (BEE) on 1st March 2002 under the provision of the **Energy Conservation Act, 2001**.
- The mission of Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market principles with the primary objective of reducing energy intensity of the Indian economy within the overall framework of the **Energy Conservation Act, 2001**.
- This will be achieved with active participation of all stakeholders, resulting into accelerated and sustained adoption of energy efficiency in all sectors.



Context: India has been ranked at 111 out of 125 countries in the Global Hunger Index (GHI) 2023, further lowering its position to 107 (out of 121 countries) in 2022.

Highlights of the Index:

About: The Global Hunger Index is a tool for comprehensively measuring and tracking hunger at global, regional, and national levels.





The Global Hunger Index (GHI) is a tool for comprehensively measuring and tracking hunger at global, regional, and national levels. GHI scores are based on the values of four component indicators:¹



Undernourishment: the share of the population with insufficient caloric intake.



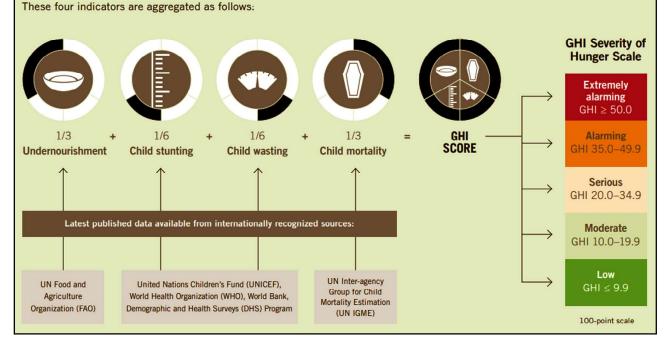
Child stunting: the share of children under age five who have low height for their age, reflecting *chronic* undernutrition.

Child mortality: the share of children who die before their fifth birthday, partly reflecting the fatal mix of inadequate nutrition and unhealthy environments.

Child wasting: the share of children under age five

who have low weight for their height, reflecting

acute undernutrition.



- Indicators: The scores are based on the values of four component indicators:
 - > Undernourishment based on caloric intake,
 - > Child (under age five) stunting based on height,
 - Child (under age five) wasting based on weight, and
 - Child mortality (before age five).
- Based on the values of the four indicators, a GHI score is calculated on a 100-point scale reflecting the severity of hunger, where 0 is the best possible score (no hunger) and 100 is the worst.
- ♦ Key points:
 - Performance of India: The index has put India's child wasting rate at 18.7 per cent highest in the world during 2018–22 reflecting acute under nutrition.
 - The rate of undernourishment in India stood at 16.6 per cent and under-five mortality at 3.1 per cent.

- The report also mentioned that the prevalence of anemia in women aged between 15 and 24 years stood at 58.1 per cent.
- The overall score for India has been put at 28.7 in the ranking, which is categorized as serious.
- ➤ India's neighboring countries: Pakistan (102), Bangladesh (81), Nepal (69th), and Sri Lanka (60), have fared better than them in the index.
- Global scenario:
 - The 2023 GHI score for the world is **18.3**, considered moderate and less than one point below the world's 2015 GHI score of 19.1.
 - Since 2017, the prevalence of undernourishment, one of the indicators used in the calculation of GHI scores, has been on the rise, and the number of undernourished people has climbed from 572 million to about 735 million.
- Concerns: The compounding impacts of climate change, conflicts, economic shocks, the global pandemic, and the Russia-Ukraine war have



exacerbated social and economic inequalities and slowed or reversed previous progress in reducing hunger in many countries.

WORLD FOOD DAY 2023

Context: As per the report, titled 'The High Cost of Cheap Water' which was released on the occasion of World Food Day by the World Wide Fund for Nature (WWF) has highlighted that mounting global water crisis threatens 58 trillion dollars in economic value, food security and sustainability.

World Food Day is celebrated on October 16.

Highlights of the Report:

- Economic losses amid Global water crisis: The amount as estimated around 58 trillion dollars — is the first ever annual estimate of economic value of water and freshwater ecosystems. It is equivalent to 60 per cent of global gross domestic product.
- The report mentions that, Degradation of rivers, lakes, wetlands and aquifers threatens their economic value and their irreplaceable role in sustaining not only our food security, but also human and planetary health.
- At the same time, unseen benefits purifying water, enhancing soil health, storing carbon, and protecting communities from extreme floods and droughts — are seven times higher at around \$50 trillion annually.
- The report noted that unsustainable agricultural practices were among the primary threats to rivers and floodplains.
 - Agriculture currently accounts for over 70 per cent of the freshwater used by humanity, according to data from the World Bank.
 - Over-extraction of water for crop irrigation also reduces its availability for other uses, such as natural flows that support fisheries.
 - Agricultural fields now occupy floodplains. This has reduced the purification, flood and drought risk capacities of river systems.

Recommendations:

- The world must also apply sustainable land use practices to facilitate natural water retention and adopt diets that reduce demand for products that strain freshwater.
- ► Healthy water ecosystems play a key role in climate adaptation by mitigating extreme

floods, building resilience to droughts, protecting against storms and erosion, regulating temperatures and micro-climates, and sustaining deltas.

About World Food Day 2023:

- Historical Background: The United Nations Food and Agriculture Organisation were founded back in 1945.
 - Thirty-four years after that, in 1979, at the FAO Conference, World Food Day was officially accepted as a world holiday.
 - Post that, more than 150 countries came together to accept World Food Day as a significant day for celebrations.
- Theme: The theme for World Food Day 2023 is: "Water is life, water is food. Leave no one behind."

INDIA'S BID TO HOST 2036 OLYMPICS

Context: Prime Minister has recently articulated regarding India's aspiration to host the 2036 Summer Olympics and become the only fourth Asian country to host the Games.

How is bidding done for hosting the Olympics?

- As per the procedure followed by International Olympic Committee (IOC), the process to elect the host city for the Olympics generally begins at least 7-9 years prior to that Olympic year and the final decision is generally made by all the member nations of the IOC along with the executive board of IOC after a detailed analysis of all the bids received, over the period of 2 years.
- The stages involved in bidding are;
 - Initiation: The bidding process generally starts with IOC sending invitational letters to all the National Olympic Committees (NOCs) to submit the bids for the Olympic Games.
 - After getting confirmatory letters of compliance to World Anti-Doping Agency (WADA) Code from all the NOCs, a time of approximately one month is given to the NOCs to submit the names of the cities interested in hosting the Olympics.

Approval from the country's **NOC is mandatory** for the city to submit its bid.



- Submission of application files and guarantee letters:
 - In case there are several potential candidatures in the same country for the same edition of the Olympic Games, NOC reserves the right to decide upon the one city that will represent that country during the bidding process.
 - Cities interested in bidding for the games are then asked to submit the application file/docket to the executive board of IOC along with financial guarantees and letters of guarantees from various stakeholders.
 - These guarantees include many assurances like no other event will take place during the Olympic Games or one week before or after it, along with a guarantee that all the Olympic-related goods will be imported without any customs duty.
- Submission of the candidature files & IOC Visit:
 - IOC scores all the applicants based on different parameters to assess the quality and feasibility of the applicant cities.
 - The parameters include the basic concept of the game, Accommodation facilities, Transport facilities, safety & security, telecommunication, government and public support, Finance & marketing, etc.
 - The overall concept of the games, legal, political, financial and marketing aspects of the game are a few of the other facets that are covered in this candidature files.



- The files are normally presented in English as well as the French language in a specifically drafted format as specified by the IOC.
- The Final Vote: The selection process culminates with a voting stage wherein all the IOC members vote for the candidate cities to elect the host in a democratic way.
 - ➤ The voting is a part of the IOC session celebrating the international meet of all the IOC members.

International Olympic Committee (IOC):

- The International Olympic Committee is the guardian of the **Olympic Games** and the leader of the Olympic Movement.
- It acts as a catalyst for collaboration between all Olympic stakeholders, including the athletes, the National Olympic Committees, the International Federations, Organising Committees for the Olympic Games, the Worldwide Olympic Partners and Olympic broadcast partners.
- It also collaborates with **public and private authorities** including the United Nations and other International organisations.
- The vision of the International Olympic Committee is to **build a Better World through Sport.**



Context: As per the latest Periodic Labour Force Survey for 2022-23, the unemployment rate for the youth in the age group 15-29 years eased to 10 per cent in 2022-23 from 12.4 per cent in 2021-22, around 24 states/UTs.

Highlights of the survey:

Youth unemployment rate, especially for females, went up as high as over 40 per cent in 2022-23 (July-June) for Kerala, Goa, Lakshadweep, and Andaman & Nicobar Island.



- For Chhattisgarh and Madhya Pradesh, the youth unemployment rate for females stood at 6.1 per cent and 3.9 per cent, respectively in 2022-23.
- With around 22 states/UTs including Goa, Haryana, Punjab, Andhra Pradesh, Arunachal Pradesh, Himachal Pradesh and Ladakh recording a higher unemployment rate than the national average of 3.2 per cent in 2022-23 (July-June).



www.iasscore.in

- In the urban areas, unemployment rate for youth stood at 17.6 per cent as against 18.9 per cent in the year-ago period.
- Employment of both males and females, however, increased in self-employed categories such as own account worker, helper in household enterprise

RADIATION DETECTION EQUIPMENT (RDE)

Context: According to the latest update, Radiation Detection Equipment (RDE) will be installed at eight land crossing points along India's borders with Pakistan, Bangladesh, Myanmar and Nepal to check the trafficking of radioactive materials for its possible use in making nuclear devices.

What is Radiation Detection Equipment (RDE)?

- Radiation detectors, also known as particle detectors, are instruments designed for the detection and measurement of subatomic particles.
- Radioactive materials emit subatomic particles (i.e., electrons, protons, neutrons, alpha particles, gamma rays, and numerous mesons and baryons) as they decay.

What is Dosimetry?

Science or technique of determining **radiation dose**; can be done in real time or retrospectively.

About the update:

The RDE will be installed at the Integrated Check Posts and land ports of Attari (Pakistan border), Petrapole, Agartala, Dawki and Sutarkandi (all on the Bangladesh border), Raxaul and Jogbani (Nepal) and Moreh (Myanmar).

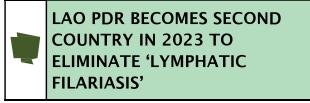
Radionuclides (or radioactive materials) are a **class of chemicals** where the nucleus of the atom is unstable. They achieve stability through changes in the nucleus (spontaneous fission, emission of alpha particles, or conversion of neutrons to protons or the reverse).

- Objective: The Union government has taken the initiative to install the RDE so that the trafficking of radioactive materials across international borders can be checked.
- The eight ICPs are known to have a sizeable number of cross-border movements of people and goods.

- The RDE will be installed in a drive-through monitoring station that monitors trucks and their cargo.
- The RDE is equipped with raising separate gamma and neutron radiation alarms and generating video frames of suspected objects.
- It will also have the ability to differentiate between special nuclear material and naturally occurring radiation in fertiliser or ceramics as well as highenergy gamma isotopes which are an attribute of recycled uranium.

Applications of Radioactive Materials:

- Today, to benefit humankind, radiation is used in medicine, academics, and industry, as well as for generating electricity.
- In addition, radiation has useful applications in such areas as agriculture, archaeology (carbon dating), space exploration, law enforcement, geology (including mining), and many others.



Context: As per the information by World Health Organization (WHO), the Lao People's Democratic Republic has eliminated lymphatic filariasis (LF).

This year, Lao is the second country after Bangladesh for such an announcement.

About the Disease:

- It is commonly known as elephantiasis and is a neglected tropical disease.
- Infection occurs when filarial parasites are transmitted to humans through mosquitoes.
- Infection is usually acquired in childhood causing hidden damage to the lymphatic system.
- The painful and profoundly disfiguring visible manifestations of the disease, lymphoedema, elephantiasis and scrotal swelling occur later in life and can lead to permanent disability.
- These patients are not only physically disabled, but suffer mental, social and financial losses contributing to stigma and poverty.

Currently, **856 million** people in **52 countries** are living in areas that require preventive chemotherapy.



Causes and transmission:

Lymphatic filariasis is caused by infection with parasites classified as **nematodes (roundworms**) of the family Filariodidea.

There are 3 types of these thread-like filarial worms:

- Wuchereria bancrofti, which is responsible for 90% of the cases
- Brugia malayi, which causes most of the remainder of the cases
- Brugia timori, which also causes the disease.
- Adult worms lodge in the lymphatic vessels and disrupt the normal function of the lymphatic system.
- The worms can live for approximately 6–8 years and, during their life time, produce millions of microfilariae (immature larvae) that circulate in the blood.

- Mosquitoes are infected with microfilariae by ingesting blood when biting an infected host. Microfilariae mature into infective larvae within the mosquito.
- When infected mosquitoes bite people, mature parasite larvae are deposited on the skin from where they can enter the body.
- The larvae then migrate to the lymphatic vessels where they develop into adult worms, thus continuing a cycle of transmission.
- It is transmitted by different types of mosquitoes for example by the **Culex mosquito**, widespread across urban and semi-urban areas, Anopheles, mainly found in rural areas, and Aedes, mainly in endemic islands in the Pacific.

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Section D [QUIK BYTES]

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CS	Xenophobia	
CS	Mission Shakti 4.0	
CS	World Organisation for Animal Health (WOAH)	
C3	Immediate Payment Service (IMPS)	
cg	Carbon & water found in asteroid Bennu samples	
cg	Ing Makhir	
cs	Ayyampalayam Nettai	
cs	High-speed craft 'Cheriyapani'	
୯୫	NASA's Psyche mission	
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[PERSONALITY IN NEWS]		
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୯୫	Haiti Islands	
ଔ	Kanwar Lake	
[SPECIES IN NEWS]		
୯୪	Arabian leopard (Panthera pardus nimr)	
ଔ	New toad species	
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Xenophobia

In a joint declaration adopted at the P20 meet, the Speaker of Lok Sabha has condemned terrorism in all its forms including those on the basis of xenophobia, racism and other forms of intolerance, while also recognising the commitment of all religions to peace.

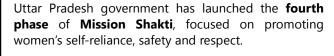
What does Xenophobia means?

- Xenophobia is an extreme, intense fear and dislike of customs, cultures, and people considered strange, unusual, or unknown.
- The term itself comes from Greek, where "phobos" means fear and "xenos" can mean stranger, foreigner, or outsider.

Xenophobia vs. Racism:

While xenophobia and racism often intersect, xenophobia doesn't automatically focus on the physical characteristics, behavior, or abilities of a specific group of people.

Mission Shakti 4.0



About the Mission:

- Mission Shakti has the clear objective of empowering women through gainful activities by providing credit and market linkage.
- Empowerment of women through WSHGs under Mission Shakti is a flagship Programme of the Government.
- It envisages that over a period of time more & more women would be part of a WSHG.
- The fourth phase of the Mission Shakti aims to replicate the success of earlier phases and reach towards broader segment.
- Rallies across 75 districts have been initiated.
- The government will also honour entities and individuals demonstrating exemplary efforts in enhancing women's safety, self-reliance and respect, within their districts.

World Organisation for Animal Health (WOAH)

The World Organisation for Animal Health (WOAH) has approved India's self-declaration of freedom from bird flu in specific poultry compartments in Maharashtra, Tamil Nadu, Uttar Pradesh and Chhattisgarh.

About the Organisation:

• WOAH is an intergovernmental organisation responsible for improving animal health worldwide.

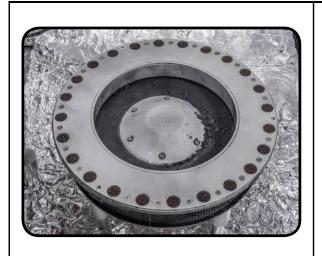




CURRENT AFFAIRS

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	 It was established in 1924 in Paris as Office international des epizooties and currently has 182 member countries. All EU Member States are members of WOAH. WOAH is recognised as a reference organisation by the World Trade Organization (WTO) for international standards relating to animal health and zoonoses. The WTO Agreement on the application of Sanitary and Phytosanitary Measures (SPS Agreement) considers that WTO members applying WOAH Standards meet their obligations under this Agreement. India is one of the member countries. OIE develops normative documents relating to rules that Member Countries can use to protect themselves from the introduction of diseases and pathogens. One of them is the Terrestrial Animal 		
	Health Code.		
Immediate Payment Service (IMPS)			
	In a move to simplify and streamline bank account transfers, the National Payments Corporation of India (NPCI) is going to introduce revised Immediate Payment Service (IMPS) rules.		
	What is Immediate Payment Service (IMPS)?		
	 IMPS of National Payments Corporation of India (NPCI) is an important payment system providing a 24x7 instant domestic funds transfer facility and is accessible through various channels like internet banking, mobile banking apps, bank branches, ATMs, SMS, and IVRS. 		
IMMEDIATE PAYMENT SERVICE	There are various ways in which one can transfer money online including the National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), and Immediate Payment Services (IMPS), among others.		
	Features of IMPS:		
	 IMPS allow users to transfer funds instantly between banks, irrespective of time and location. IMPS transactions are subject to a daily maximum 		
	 limit of Rs.5 Lakh. The charges associated with IMPS transactions may vary between Rs.5 to Rs.15. 		
	 In addition to transaction charges, IMPS transactions may also levy an additional service tax. 		
Carbon & water found in asteroid Bennu samples			
	According to a statement by National Aeronautics and Space Administration (NASA) , initial studies on the samples collected in space and recently brought back on earth have shown evidence of high-carbon content and water-bearing clay minerals .		



Key findings:

- Samples collected from 4.5-billion-year-old **Asteroid Bennu** could indicate the building blocks of life on Earth.
- The material collected from the asteroid acts as a time capsule from the earliest days of our solar system and can help us answer big questions about the origins of life and the nature of asteroids.

Bennu is a **small near-Earth asteroid** that passes close to Earth **every six years.**

- A 4.5 billion-year-old relic of our solar system's early days, asteroid Bennu has seen it all.
- Bennu's current composition, according to scientists, was established within **10 million years** of the formation of our solar system.

Ing Makhir



Trinity Saioo, who won the 2021 **Padma Shri award** for helping more farmers in Meghalaya take up the cultivation of **Lakadong turmeric**, now plans to promote the north-eastern State's unique "**Makhir**" ginger.

About:

- "Sying Makhir" or "Ing Makhir" as it is locally known by the people of Meghalaya is an indigenous ginger variety native to the hilly terrains of Meghalaya.
- It is scientifically known as Zingiber rubens. This ginger is known to be the best ginger variety in India.
- The name Ing Makhir comes from the Khasi words "Sying" which means 'ginger' and "Makhir" which means 'small'. The Pnar people from the Jaintia Hills call it "Ing Traw" which, again, translates to small ginger.
- Meghalaya has two types of ginger that are popular. While "Makhir" is one, the other is "Nadia".
- The ginger is **small in size** but it provides immense health benefits.

Ayyampalayam Nettai



Both the farmers and the agriculture department are striving to get the GI tag for the coconut, locally called as '**Ayyampalayam Nettai**'.

About the variety:

- Ayyampalayam, a town on the way towards Marudhanidhi dam in Dindigul district of Tamil Nadu, is known for this unique variety of coconut.
- This coconut variety is grown in coconut farms just above the dam, bordering the catchment area.
- The trees are **a 100-foot tall** and have more than 60% oil content and an extremely **sweet kernel**.
- On an average, a single tree can give a yield of about 120 nuts per year without application of chemical fertilisers.
- The 'Ayyampalayam Nettai' are not just diseaseresistant but also drought-resistant.



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High-speed craft 'Cheriyapani'

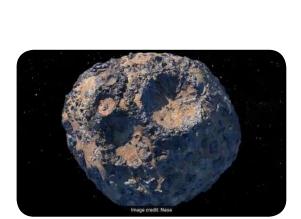


THE HIGH-SPEED CRAFT 'CHERIYAPANI' BETWEEN INDIA-SRI LANKA Recently, the Prime Minister has launched an international, high-speed passenger ferry service between Nagapattinam on the eastern coast of Tamil Nadu and Kankesanthurai in the northern province of Sri Lanka.

About:

- The ferry service will help strengthen **cultural**, **commercial**, **and civilizational** ties between the two nations.
- Connectivity is the central theme of the joint vision of the India Sri Lanka economic partnership.
- The Nagapattinam port is one of the non-major ports under the maintenance of the Tamil Nadu Maritime Board, and is located on the shores of the Bay of Bengal at the estuary of the Kaduvaiyar River that flows south of the town between Akkaraipettai and Keechankuppam villages.
- The Union Ministry of External Affairs had sanctioned **Rs. 8 crore** to upgrade the infrastructure at the port.

NASA's Psyche mission



NASA's Psyche spacecraft is on its voyage to an asteroid which a metal-rich world that could tell us more about the **formation of rocky planets**.

About the mission:

- Psyche is a NASA mission that will explore a 140-milewide (225 kilometers) metallic asteroid called '16 Psyche'.
- The mission will explore a metal-rich asteroid that may shed light on our own planet's formation.
- No spacecraft has ever visited an object like 16 Psyche, which is thought to be the exposed core of a demolished planet.
- The asteroid 16 Psyche, or simply Psyche, was only the 16th asteroid ever discovered, according to Arizona State University (ASU).
- The space rock was spotted in 1852 by Italian astronomer Annibale de Gasparis, who named it for the ancient Greek goddess of the soul.
- Psyche has a mass of about 440 billion billion pounds (220 billion billion kilograms), making it 0.03% the mass of Earth's moon.
- It's the **11th-most-massive known asteroid** in the solar system, though it's only a few hundredths the mass of behemoths such as **Ceres and Vesta**.

Space Rock:

- Meteoroids are **fragments and debris in space** resulting from collisions among **asteroids**, **comets**, **moons**, **and planets**.
- They are among the smallest "space rocks." We can see them when they streak through our atmosphere in the form of **meteors and meteor showers**.



David's Sling Air-Defense System



Israel's Rafael Advanced Defense Systems has built a technology called the Iron Beam, which is a laser weapon system designed to defend the country from incoming missiles.

About the system:

- David's Sling is an Israeli air and missile defense system designed to defeat short-range ballistic missiles, large-caliber rockets, and cruise missiles.
- Co-developed with the United States, David's Sling occupies a middle tier in its missile defense architecture, between the point-defense Iron Dome and uppertier Arrow systems.
- The David's Sling Weapon System (DSWS) incorporates a vertical missile firing unit, an ELM-2084 fire control radar, a battle management/operator station, and the Stunner interceptor.
- The middle tier in Israel's missile defenses, DSWS is designed to intercept ballistic and cruise missiles at ranges of 40 to 300 km.

Tilapia parvovirus



India's first **tilapia parvovirus** was reported in Tamil Nadu.

About:

- Tilapia parvovirus (TiPV) is a single-stranded DNA virus.
- The discovery of TiPV in India is the third known occurrence after China (2019) and Thailand (2021).
- It is affecting **farm-bred tilapia**, a freshwater fish species, and causing a huge mortality rate.
- Mozambique tilapia was introduced to Indian freshwater bodies in the 1950s.
- Capable of surviving in low-oxygen levels in water, the fish has turned invasive across the country.
- Currently no vaccine is available against TiPV.

Large Language models (LLMs)

Large Language Models India is going to set up a high powered committee to explore the development of **large language models or LLMs**, tools that harness artificial intelligence to create applications that can understand and process human language.

What are Large Language Models (LLMs)?

- A large language model (LLM) is a **deep learning algorithm** that can perform a variety of **natural language processing (NLP)** tasks.
- Large language models use transformer models and are trained using massive datasets.
- This enables them to recognize, translate, predict, or generate text or other content.

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CURRENT AFFAIRS

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- Large language models are also referred to **as neural networks (NNs)**, which are computing systems inspired by the human brain.
- These neural networks work using a network of nodes that are layered, much like neurons.

PERSONALITY IN NEWS

Madame H. P. Blavatsky



The Theosophical Society was founded by **Madame H. P. Blavatsky** and **Colonel Olcott** in New York in 1875.

- In 1882, the headquarters of the Society were established in Adyar, near Madras (now Chennai) in India.
- Theosophy was a philosophy combining mysticism and spiritualism (with heavy influences from Buddhist and Hindu thought) with metaphysics.
- Main objectives of the society:
 - > Promoting universal brotherhood of humanity
 - The study of comparative religion and philosophy, especially from the eastern world, and
 - To investigate unexplained laws of nature and powers latent in man.
 - Apart from spirituality, the Society encouraged reforms and framed educational schemes to work them out.
- Madam Blavatsky was believed to have had such psychic powers, including her ability to communicate through letters on an astral plane with the 'Mahatmas', who inspired the founding of the society.

LOCATION IN NEWS



Kenya's Cabinet has approved the deployment of **1,000 police** to lead a multinational peacekeeping **mission to Haiti** to combat gang violence.

• From January 1 until August 15, more than 2,400 people in Haiti were reported killed, more than 950 kidnapped and another 902 injured, according to the most recent U.N. statistics.

About the region:

- Haiti, country in the **Caribbean Sea** that includes the western third of the island of Hispaniola and such smaller islands as **Gonâve**, Tortue (Tortuga), Grande Caye, and Vache.
- The capital is **Port-au-Prince.**
- Geographic Location: Haiti is bordered to the east by the Dominican Republic, which covers the rest of Hispaniola, to the south and west by the Caribbean, and to the north by the Atlantic Ocean.



Haiti Islands

Kanwar Lake

Bihar's only wetland of international importance under the Ramsar Convention lies neglected and is on the brink of drying up.

• It was declared a Ramsar site in August 2020.

About the Site:

- The lake lies in the Indo-Gangetic plains in the Begusarai district of Bihar.
- It acts as a vital flood buffer for the region besides providing livelihood opportunities to local communities.
- It is an important stopover along the Central Asian Flyway, with 58 migratory waterbirds using it to rest and refuel.
- Threats:
 - Major threats to the Site include water management activities such as drainage, water abstraction, damming and canalization.

SPECIES IN NEWS

Arabian leopard (Panthera pardus nimr)

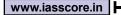


The Holy Land is in flames again after Palestinian group Hamas overran southern Israel from the Gaza Strip. According to the Arabian folklore, the **Arabian leopard** (**Panthera pardus nimr**) is found across the whole of the Arabian Peninsula.

About the Species:

- The Arabian leopard is extinct in its entire northern range, including all historic distribution ranges on the Sinai Peninsula, the Negev, and the Judaean Desert.
- Remnant nuclei of Arabian leopards are today restricted to Oman, Yemen, and possibly some animals in the southern part of Saudi Arabia.
- The Arabian leopard is the smallest leopard subspecies.
- It was tentatively affirmed as a distinct subspecies by genetic analysis of a single wild leopard from South Arabia, which appeared most closely related to the African leopard.





New toad species



A group of scientists from **India and the United Kingdom** have discovered a new species of toads, the third of a genus found only in a very narrow area in northeast India.

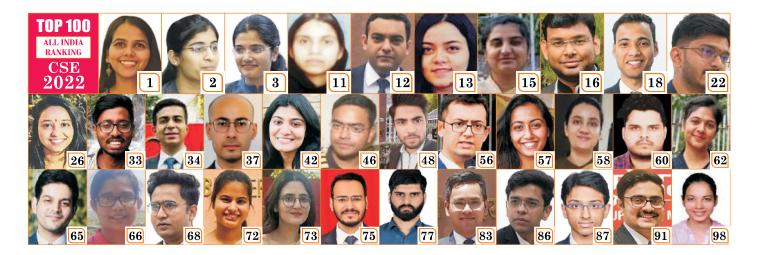
About the Species:

- The discovery of the new species *Bufoides bhupathyi*
 found in the **Dampa tiger reserve** of Mizoram was
 published in the latest issue of **Biodiversitas**, a journal
 published in Indonesia.
- The two earlier known species from;
 - The genus 'bufoides' Bufoides meghalayanus and
 - ► Bufoides kempi were found in Meghalaya.









SUCCESS IS A PRACTICE WE DO!

