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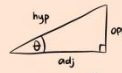
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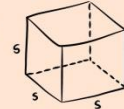
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General Studies I: Indian History & Culture

TIBETAN BUDDHISM

1. Context

The Dalai Lama has named a US-born Mongolian boy as the Tenth Khalkha Jetsun Dhampa, the head of the **Janang tradition of Tibetan Buddhism** and the Buddhist spiritual head of Mongolia.

2. Key Points

- The **reincarnation** of Khalkha Jetsun Dhampa Rinpoche of Mongolia and 600-odd followers at the unveiling ceremony understood to have taken place in Dharmashala
- The ninth Khalkha Jetsun Dhampa died in 2012 at Ulaanbaatar, Mongolia. Since then, there had been a tense wait for his reincarnation.
- In 2016, during the Dalai Lama's latest visit to Mongolia, he announced that the Jetsun Dhampa had been born in the country and the search was on to find him.
- The ninth **Khalkha Jetsun Dhampa** died in 2012 at Ulaanbaatar, Mongolia. Since then, there had been a tense wait for his reincarnation.
- In 2016, during the Dalai Lama's latest visit to Mongolia, he announced that the Jetsun Dhampa had been born in the country and the search was on to find him.
- The boy unveiled, reportedly a scion of one of Ulaanbaatar's most prominent business and political families was deemed to be the said reincarnation.
- He is reportedly one of the twins born to Altannar Chinchuluun and Monkhansan Narmandakh.
- The latest announcement has brought attention back to the larger question of the 14th Dalai Lama's reincarnation.
- The Dalai Lama is the foremost spiritual and temporal authority of Tibet.
- Over the past 70 years of Chinese occupation, he has been Tibet's loudest, most popular and most outspoken voice, while living in exile in Dharmashala, India.

- This makes the issue of his reincarnation one with deep ramifications on international politics.
- The Dalai Lama's reincarnation is a civilizational struggle between China and Tibetans over who controls Tibetan Buddhism.

3. A brief outline of Tibetan Buddhism

- Buddhism became the predominant religion in Tibet by the 9th century AD.
- It evolved from the Mahayana and Vajrayana traditions of Buddhism, incorporating many tantric and shamanic practices of both post-Gupta period Buddhism in India as well as the Bon religion which was spread across Tibet before Buddhism's arrival.

Tibetan Buddhism has four major schools:

1. Nyingma (8th Century)
 2. Kagyu (11th Century)
 3. Sakya (1073)
 4. Gelug (1409)
- The Janang school (12th century) is one of the smaller schools that grew as an offshoot of the Sakya school.
 - Since 1640, the Gelug school has been the predominant school of Tibetan Buddhism. The Dalai Lama belongs to this school.

4. Hierarchy and Reincarnation in the Tibetan Buddhist Tradition

- The cycle of birth, death and rebirth is one of Buddhism's key beliefs. "As long as you are a Buddhist, it is necessary to accept past and future rebirth", the Dalai Lama said in a 2011 sermon on the subject.
- However, early Buddhism did not organise itself based on this belief in reincarnation.
- Early Buddhist "**orders**" were scarcely ordered at all with next to no hierarchy and little organisation.
- "It was merely a brotherhood of monks", LA Waddell wrote in his authoritative *The Buddhism of Tibet or Lamaism* (1895).
- Tibet's hierarchical system seemingly emerged in the 13th century.

- It was also around this time that the first instances of "formally recognizing the reincarnations of lamas" can be found.
- The Dalai Lama traces this tradition to "**the recognition of Karmapa Pagshi as the reincarnation of Karmapa Dusum Khyenpa by his disciples by his prediction**". Since then, this custom slowly spread to all Tibetan traditions.
- Notably, in 1417, Je Tsongkhapa founded the Gelug School, which developed a strong hierarchy and by 1640 it leapt into the temporal government of Tibet with the assistance of Mongol Prince Gusri Khan.
- The fifth grand lama of the school, Ngawang Lobsang Gyatso has been conferred the title of Dalai Lama (Dalai' being the Mongol word for ocean).
- To consolidate his rule, he instituted the tradition of succession through reincarnation in the Gelug school, himself claiming to be the reincarnation of Avalokiteshvara, one of the most important Bodhisattvas in Mahayana Traditions.

5. How reincarnate lamas are chosen?

- Since then, "a series of unmistakable reincarnations has been recognised in the lineage of the Dalai Lama", the Dalai Lama said in 2011.
- According to Tibetan Buddhist tradition, the spirit of a deceased lama is reborn in a child.
- " This secures a continuous line of succession through successive re-embodiments", John Powers wrote in his book Introduction to Tibetan Buddhism (1995).
- Several procedures are followed to recognise Tulkus (recognised reincarnations).
- The predecessor himself leaves guidance regarding his reincarnation.
- The prospective child then has to undergo multiple "tests" in which they "recall" their past lives and recognise objects that their predecessor used, such as spectacles, prayer beads, etc.
- Other oracles and lamas with the power of divination are also consulted before the final proclamation is made.
- There are also procedures to iron out disputes. "When there happens to be more than one prospective candidate for recognition as a Tulku... there is a practice of making the final decision by divination employing the dough-ball

method (zen tak) before a sacred image while calling upon the power of truth".

- This system of succession by reincarnation works at various levels of the Buddhist hierarchy.

6. Chinese interference

- The Chinese occupation of Tibet and the Dalai Lama's exile has raised significant complications in the established traditions of reincarnations in Tibetan Buddhism.
- While China's initial attempts to establish its authority in Tibet employed direct, repressive tactics (especially during Mao's Cultural Revolution when thousands of Tibetan monasteries and cultural sites were destroyed), of late, China's policy has focussed on controlling Tibetan Buddhism itself to "pacify the highly devout Tibetan public".
- Not that China is not repressive anymore. Monasteries are highly surveilled, schools do not teach Tibetan language, culture and history and dissenting voices often just "disappear".
- But China has also "invested" millions of dollars to rebuild and renovate many monasteries and recognised Buddhism as an "**ancient Chinese religion**".
- The succession of the Dalai Lama is of utmost importance in this project. For years, the Chinese government has attempted to discredit the Dalai Lama, calling him a "wolf in monk's robes", claiming that he forfeited his authority over Tibetans 60 years ago when he went into exile.
- However, the Dalai Lama remains venerated in Tibet, even though the Chinese government has systematically attempted to remove him from public consciousness, including by banning his portrait across China.
- By controlling his succession, the Chinese seek to, once and for all, take control over Tibetan Buddhism and Consequently, Tibetan Buddhists.
- According to the "State Religious Affairs Bureau Order No.5', passed by the Chinese government in 2007, "a reincarnation application must be filled by all Buddhist temples in that country before they are allowed to recognise individuals as tulkus".

7. The Dalai Lama's position

- On his part, the Dalai Lama has outrightly rejected any authority the Chinese claim to have regarding his and other lamas' reincarnation.
- The person who reincarnates has sole legitimate authority over where and how he or she takes rebirth and how that reincarnation is to be recognised", declared the Dalai Lama.
- He adds, "It is particularly inappropriate for Chinese communists... to meddle in the systems of reincarnation and especially the reincarnations of the Dalai Lamas and Panchen Lamas".
- But, while the Dalai Lama, currently 87, claims he will live till the ripe age of 113 and have enough time to decide upon his reincarnation, his old age and shaky health concern many Tibetans.
- If His Holiness leaves this world without certainty about what comes next, there will be trouble.
- The Potential for confusion is aggravated by the fact that the Panchen Lama traditionally the second most important figure in the Gelug tradition is responsible for naming and grooming the next Dalai Lama chosen by the 14th Dalai Lama remains "**missing**" since he was kidnapped by Chinese authorities in 1995.
- Gedhun Choekyi Nyima was only 6 at the time of his abduction and has never been seen since.
- Chinese authorities selected their own Panchen Lama, a six-year-old boy named Gyaincain Norbu, in 1995.
- Today, he is the vice president of the Buddhist Association of China and is seen in monasteries across Tibet, spreading pro-China messages.

8. The way forward

- The question of the Dalai Lama's reincarnation is set to linger on for the foreseeable future.
- The Dalai Lama himself has not provided a definitive answer regarding what will happen.
- At different times, he dodged the question with his disarming smile, claimed that there is ample time to make the decision and even suggested that there may be no Dalai Lama after him.
- In 2011, announcing his retirement from worldly affairs, the Dalai Lama handed over his temporal authority to an elected Tibetan government-in-exile, the Central Tibetan Administration.

- The rule by kings and religious figures is outdated. The CTA runs like any modern government with various ministries and a constitution.
- However, given the symbolic authority that the Dalai Lama has due to his importance to millions of Tibetans across the world and through the sheer strength of his charisma, the question of his reincarnation continues to hold great political implications.

NOWRUZ FESTIVAL

1. Context

Nowruz also spelt as Navroz, is celebrated by the ethnic Iranian population every year in various parts of the world.

The Parsi community in India, which follows Zoroastrianism, celebrated Nowruz on March 21, making the beginning of the New Year. The festival symbolises freshness, rebirth and freedom.

2. About Nowruz

- Nowruz begins on the first day of the Farvardin, the first month of the Iranian solar calendar at the spring equinox and continues for 12 days.
- The climax of blossoming, the anxiety of births and a festival filled with the excitement of every beginning are considered a festival of renewal, hope and happiness.
- In India, the Iranian New Year is celebrated with ardour people visit the Fire Temple, the place of worship of the Paris community, decorate their houses, prepare delicacies and perform rituals based on the movements of the sun during the day.

3. Origins of Nowruz

- The origins of the festival are, however, unclear. Newroz from Kurdish and Persian Perspectives A comparative study delves deep into diverse cultural perceptions about the festival among Kurdish and Persian communities and what it stands for them.
- While for the Kurds, Nowruz stands as a symbol of resistance, for Persians, it is purely a cultural festival.

- It is observed as a celebration of Kurdish national identity it is more about the establishment of a state identity.
- According to **Kurdish mythology**, Kawa, the Blacksmith and their ancestor killed Zuhak, the tyrant, marking a new for Kurds.
- Soon after, Deiokes, who was "Chosen by seven Kurdish tribes to build the Median Empire succeeded in building the empire".
- As Kurds did not have an independent state in what is referred to as "**modern history**" their cultures remained influenced by the cultures of four nation-states, namely, **Turkey, Iran, Iraq and Syria**, Nowruz for them, entails a political dimension.
- Kurdish people in these four countries observe distinct rituals on the day of the festival, but one common link between these rituals is that the festival is a mark of Kurdish resistance against oppression. It is a day when they demand freedom, peace and independence.
- Kurdish people in these four countries observe distinct rituals on the day of the festival, but one common link between these rituals is that the festival is a mark of Kurdish resistance against oppression. It is a day when they "Demand freedom, peace and independence".
- Khalid's analysis also deconstructs the Persian myth for the readers. For Persians, even though they narrate the stories of Kawa and Zuhak in their folktales, they trace back the festival to Jamshid, legendary ancient rulers who "fought against winter, above the earth into the heavens and was shining like the sun".
- For Persians, it is a reminder of values that bind all people together with the aim of mutual understanding, unity and peace.
- Interestingly, these days, the festival, in both nations, stands as a "**symbol of national identity**" and as a tourism resource.

4. UNESCO about the Nowruz festival

- The United Nations General Assembly proclaimed the International Day of Nowruz in 2010.
- The festival had also been listed as an **Intangible Cultural Heritage of Humanity** in 2016.
- Terming it a day which marks the "Renewal of nature, UNESCO describes it as a festival which promotes values of peace and solidarity between

generations and within families as well as reconciliation and neighbourliness".

5. History of the Paris Community in India

- Following religious persecution in Iran, Parsis arrived in India in 936 AC and sought refuge under the Hindu King of Gujarat, Jadav Rana, according to a chronicle, Qissa-i-Sanjan, written in the 17th century.
- They continued to preserve their culture and religious identity in India, as they built the first fire temple, Atash Behram, to shelter their holy fire which they had rescued from Iran.
- The sacred fire is now located in a temple in Udvada, Gujarat, which has become the heart of the Paris culture in India.
- Surat had become a major trade centre for the community by the 16th century. A large part of this community included weavers and artisans, the British willingly conducted business in the country through the community.
- In the present times, about 70 per cent of Parsis are concentrated in Mumbai and are intimately connected to the city.

6. Parsis celebration of the festival

- Nowruz, across Central Asia, is celebrated by weaving Toran, an ornated gateway; chalk making (similar to the Hindu tradition of making rangolis), and "taking around the Loban (frankincense) in the act of ritual purity.
- The preparations begin in March with the sprouting of Sabzeh (lentil, wheat or barely) and Khane Tekani (house cleaning), followed by Kharid-i-Nowruz or shopping for Nowruz.
- Navroze necessarily entails a "**Jashan**" of thanksgiving in the morning a core religious ceremony which brings all creations together with the recitation from the Yasna Text.
- The Festival marks a unique site of community cohesion as the Zoroastrian community experiences the diaspora and population decline over the years.

General Studies I: Indian Society

CASTELESS SOCIETY

1. Context

Despite attempts to create an egalitarian and modern society, the caste system remains a prominent feature of Indian society. Historically, castes, which are often associated with certain occupations, were arranged in a hierarchy, with some castes considered superior to others and thus accorded more power and privileges than others. This system of social stratification and power relations has been a major problem in India as it has led to discrimination and inequality for those belonging to lower castes.

2. Background

- The caste system is unique to India. It has been an unfair system of discrimination based on the birth instead of merit or potential that has lasted for more than 3,000 years.
- We need to erode the caste system from our social consciousness.
- After independence in 1947, India introduced laws to make discrimination against underprivileged castes 'illegal' and to improve their socio-economic positions.
- Reservation quotas were introduced for disadvantaged castes in schools, college admissions and government jobs in India.

3. Caste: a disintegrating factor

- The discrimination based on the caste system is opposed to the idea of 'dignity of labour' and the rigidity of the caste system is opposed to the concept that we are all 'free and equal'.
- The caste system was historically designed to exploit the underprivileged castes, who were denied learning, social status, share in administration and the material and cultural benefits of advancements in civilisation.

- And today, while we have retained the caste system, to correct the historical wrongs by allocating reservation quotas this builds up economic discontent and social prejudices.
- The caste system has split society into thousands of hereditary castes and sub-castes and thus encouraged a spirit of exclusiveness and class pride.
- In this way, it has stood in the way of national and collective consciousness and proved to be a disintegrating rather than an integrating factor.
- Caste system also influences how people 'vote'. Politicians have won elections purely on the promise of social justice with no need to deliver on governance.

4. How did the caste system originate?

- There are different theories about the establishment of the caste system; religious-mythological, biological as well as socio-historical theories. According to the socio-historical theory, the caste (“jati” or “varna”) system originated around 1200-1500 BC.
- skin colour was perhaps an important factor in the caste system. The meaning of the word "varna" is not class or status but skin colour.
- The fair-skinned Aryans (who migrated from Europe), to secure their status, resolved some social and religious rules which, allowed only them to be the priests, warriors and businessmen of the society.
- The society was organised into four groups of caste/Jati/Varna –Brahmins, Kshatriyas, Vaishyas and Shudras.
- On the top of the hierarchy were the Brahmins; they were teachers and priests. Second, on the hierarchy were the Kshatriyas; they were the Aristocrats (warriors and rulers). Then came the Vaishyas; they were Landlords and Businessmen (Traders and Merchants). The bottom of the hierarchy was Shudras; they were the Working Class (Peasants and Labourers).
- Within these caste groups, there are overall 25,000 sub-castes, each related to a specific occupation.
- The Shudra is the largest Varna and it has the largest number of communities.
- While Dalits (Cleaners, Sweepers) were considered outside the caste system as untouchables.

- Each Varna member has to work in a certain occupation which only that Varna member is allowed.
- The Group is determined by birth and it cannot be changed. In the beginning, the caste system was not a strict system and people could move from one Varna to another.
- Indologists give different dates to this period of change (around 500 BC - 500 AD).

5. The idea of a casteless society

- The word ‘casteless’, simply refers to ‘an individual who does not have a caste or is an outcaste’.
- Yet, its implications and manifestations as a social concept run much deeper. The term ‘casteless’ refers to the ‘absence of caste’ in society.
- It advocates for a society free of castebased discrimination and oppression. It aims to create an inclusive society that provides equal opportunity for every individual regardless of inheritance and birth.
- In a ‘casteless’ society, people from different backgrounds would be treated with dignity and respect.
- People would interact and work together freely, without castebased discrimination or prejudices and everyone would have access to quality education, healthcare, and job opportunities irrespective of their caste or social status.
- Here a person’s worth and success would be solely judged based on their abilities, character, and hard work rather than their social position.
- The idea of such a casteless society has been a goal that many, including social reformists, have aspired to achieve.
- However, the reality is that the caste system remains deeply ingrained in our society with roots that extend back thousands of years.

6. Is being casteless a myth?

- The term ‘casteless’, as a sociological concept was popularised by M. N. Srinivas, an Indian sociologist who has written immensely about caste, Sanskritisation and social stratification.
- Srinivas in his book Caste in Modern India argues that caste is a complex social structure that has adapted and changed throughout history but remains a powerful force in modern Indian society.

- One of Srinivas's key arguments is that the notion of being "casteless" is a myth in the Indian context.
- He explains that even though some people may claim to be casteless or advocate for a casteless society, they are often still influenced by caste in various ways.
- For instance, many media houses, universities and corporate organisations are filled with people belonging to upper castes, especially in higher positions.
- Despite many claims to be casteless, employers belonging to upper castes tend to prefer hiring people of their own castes than people from the so-called lower castes.

7. The reality of the caste

- The concept of castelessness is a response to the discriminatory practices of the caste system.
- Indian sociologist Satish Deshpande, in his article "Caste and Castelessness: Towards a Biography of the 'General Category'", argues that only upper castes are enabled to think of themselves as "casteless," while the under-privileged lower castes are often restricted to their caste identities.
- The ideology of castelessness has successfully interpellated uppercaste subjects, enabling them to see their caste identities as incidental or irrelevant to their claims.
- However, it is presumptive because, in actuality, they do not have to give up their caste identities.
- They would automatically be presumed to be casteless if they did not explicitly invoke their caste.
- Therefore, they can retain their power and privilege while appearing to be casteless.
- Glimpses of caste pride among upper castes are witnessed in the caste surnames they carry, in their insistence to marry within their castes as well as through the caste associations and clubs they create.
- Caste identity and pride can be so deeply ingrained in an individual's upbringing and socialisation, that they may not even realize the extent to which it affects their thoughts and actions.

- Uppercaste individuals are often able to attain better education and employment opportunities due to their sociocultural and economic privileges.
- It enables them to be seen as individuals who have achieved success through their hard work and merit while hiding the caste identity that helped them achieve it.
- On the other hand, lower caste individuals often face discrimination and barriers while accessing education and employment opportunities due to their caste identity.
- Claims of castelessness, among the upper castes, thus seem like attempts to resist affirmative action policies that aim to redress historical injustices and promote social and economic equality for lower castes.
- Upper-caste individuals claim the need for a casteless society by superficially arguing against reservation policies on claims that encourage certain castes to identify primarily with their caste identity, rather than as citizens of a unified nation, and that it works against meritocracy.

8. Dr Ambedkar's vision

- Dr Ambedkar acknowledged that caste was deeply entrenched in Indian society and that it would require significant effort to uproot it.
- According to him, Education was key to annihilating caste. Education could empower individuals socially, economically and politically.
- It could help them escape the cycle of poverty and oppression through economic independence.
- It could also help them to be more politically represented, giving them a voice in the democratic process to advocate for their rights.
- Economic and political freedom would help them in challenging the existing social order and breaking down barriers that had been erected to maintain castebased discrimination.
- According to him, another important step towards creating a casteless society was intercaste marriages.
- He argued that marriage was a means of reproducing caste privileges and maintaining the existing social order.
- Intercaste marriage could break down caste barriers, as individuals born through such marriages cannot be associated with a single caste, challenging the traditional notion of caste purity.

- He believed that intercaste marriages would help to create a sense of unity and shared identity, which would be necessary to achieve a casteless society.

General Studies II: Governance

COASTAL AQUACULTURE BILL 2023

1. Context

The Government recently introduced the Coastal Aquaculture Authority (Amendment) Bill, 2023, through its Union Minister of Fisheries, Animal Husbandry, and Dairying, Parshottam Rupala.

2. Key Provisions of the Bill

- The Bill seeks to amend certain provisions of the Coastal Aquaculture Authority Act, 2005, and decriminalize offenses under it for promoting ease of doing business and fine-tuning the operational procedures of the Coastal Aquaculture Authority.
- Besides amending the Coastal Aquaculture Authority Act, 2005, the Bill seeks to clarify that coastal aquaculture and activities connected therewith shall continue to be regulated by the Coastal Aquaculture Authority Act and no other Acts.
- It aims to promote newer forms of environment-friendly coastal aquaculture such as cage culture, seaweed culture, bi-valve culture, marine ornamental fish culture, and pearl oyster culture, which, it adds, has the potential for creating employment opportunities on a large scale for coastal fisher communities and especially fisherwomen.
- It also aims to encourage the establishment of facilities in areas having direct access to seawater to produce genetically improved and disease-free broodstocks and seeds for use in coastal aquaculture.
- Moreover, the Bill seeks to prevent the use of antibiotics and pharmacologically active substances, which are harmful to human health in coastal aquaculture.

3. What is Coastal Aquaculture?

- Under Section 2 (1)(c) of the 2005 Act, “coastal aquaculture” means culturing or cultivating, under controlled conditions in ponds, pens, enclosures, or otherwise, in coastal areas, of shrimp, prawn, fish, or any other aquatic life in saline or brackish water; but does not include freshwater aquaculture.
- The 2023 Bill seeks to broaden the definition of coastal aquaculture or coastal aquaculture activity to mean rearing and cultivation of any life stages of fish, including crustacean, mollusc, finfish, seaweed, or any other aquatic life under controlled conditions, either indoor, outdoor, in cement cisterns, ponds, pens, cages, rafts, enclosures or otherwise in saline or brackish water in coastal areas, including activities such as the production of broodstock, seed, grow out but does not include freshwater aquaculture.

4. Provisions for Biosecurity

- The bill also includes new provisions for biosecurity, which refers to measures and strategies for analyzing, managing, and preventing the risk of introducing or spreading harmful organisms like viruses and bacteria within the coastal aquaculture unit, which could lead to infectious diseases.
- It provides for the introduction of a “Brood Stock Multiplication Centre” which receives “post-larvae or juveniles which are specifically pathogen-free” or tolerant or resistant to such pathogens or other post-larvae or juveniles from a “Nucleus Breeding Centre”, to be reared under strict biosecurity and disease surveillance.
- Many of these biosecurity measures also find a mention in the 2015 Guidelines for Regulating Establishment and Operation of SPF Shrimp Broodstock Multiplication Centers, published by the National Fisheries Development Board, which is part of the Department of Animal Husbandry, Dairying, and Fisheries, which used to be a part of the Ministry of Agriculture and Farmer's Welfare.
- Formed in 1991, the Department of Animal Husbandry, Dairying, and Fisheries (DAHDF) was earlier responsible for overseeing matters related to animal husbandry, dairy, and fisheries. It advised states and UTs on the formulation of policies and programs.
- Department of Animal Husbandry and Dairying was subsumed under the newly created Ministry of Fisheries, Animal Husbandry & Dairying.

5. What is the Coastal Aquaculture Authority Act, of 2005?

The act provides for the establishment of the Coastal Aquaculture Authority for regulating the activities connected with coastal aquaculture in coastal areas and matters connected therewith or incidental thereto.

The Act mandates Central Government

- To take all such measures as it deems necessary or expedient for the regulation of coastal aquaculture by prescribing guidelines.
- To ensure that coastal aquaculture does not cause any detriment to the coastal environment and
- The concept of responsible coastal aquaculture shall be followed in the regulation of coastal aquaculture activities to protect the livelihood of various sections of people living in the coastal areas.

6. Coastal Aquaculture Authority

Section 4 of the 2005 Act allowed the Centre to establish an authority called the Coastal Aquaculture Authority to regulate coastal aquaculture activities in the coastal areas, which would consist of a chairperson who is a current or former HC judge, a coastal aquaculture expert and members nominated by the Central Department of Ocean Development, Ministry of Environment and Forest, Ministry of Agriculture, Ministry of Commerce along with four members representing Coastal states on a rotational basis and one member secretary.

7. What did the Coastal Aquaculture Authority Act Bill 2022 propose?

- The Coastal Aquaculture Authority (Amendment) Bill, 2022, which the government proposed to bring last year, sought to revise the provisions of the principal 2005 Act to reduce the regulatory compliance burden on stakeholders without diluting the core principles of environmental protection in coastal areas.
- It also proposed to decriminalize offenses under the Act and expand the scope of the law to bring all coastal aquaculture activities under its ambit.
- It also proposed to exempt shrimp hatcheries from the application of the 1991 Coastal Regulation Zone notification by amending Section 13(8) of the 2005 Act, which prohibited coastal aquaculture within no-development zones, and Section 27 to exempt the entire coastal aquaculture from the purview of the 1991 notification.

NATIONAL CURRICULUM FRAMEWORK

1. Context

Recently the Ministry of Education released the pre-draft of the National Curriculum Framework (NCF) for school education for public feedback on the recommendations will be finalised after further rounds of discussions involving the national steering committee led by former ISRO chairperson K Kasturirangan developed it.

The school system in India may undergo a major restructuring with an expert committee appointed by the Union government recommending board examinations twice a year, a semester system for class 12 and freedom for students to pursue a mix of science, humanities and commerce subjects among others.

2. About NCF

- The NCF, which was last revised in 2005 is a key document based on which textbooks are prepared.
- So the current set of NCERT textbooks, barring the deletions are all based on the NCF 2005.
- Before 2005, the NCF was revised thrice, including once under the NDA government led by Atal Bihari Vajpayee.

3. Draft Framework

- Under the latest round of revision, a draft framework on early childhood care and education and school education has already been prepared, while work on teacher and adult education is underway.
- Apart from textbooks, the NCF, after its adoption by the CBSE and other state boards will also restructure various other aspects of the classroom, including the choice of subjects, the pattern of teaching and assessment.

4. Proposed Changes

- Among the most significant recommendations in the draft NCF on school education are about the choice of subjects and exams in classes IX-XII.

- Over two years, in classes IX and X, the students will have to study 16 courses categorised under eight curricular areas.
- The suggested curricular areas are Humanities (that includes languages), Mathematics & Computing, Vocational Education, Physical Education, Arts, Social Science, Science and Inter-disciplinary Areas.
- Students will have to clear eight board exams, each of which will assess their hold on courses they learnt in class IX and X, to obtain the final certification which will factor into their performances in exams held over two years.
- Under the current system, there are no such links between class IX and X and students across most boards have to pass at least five subjects to clear class X.
- The committee has recommended more changes at the level of Class XI and XII, including the introduction of a semester system in Class XII.
- In terms of subjects, students will be given a choice to pick 16 courses from eight curricular areas.
- Currently, in Class 12, CBSE Students appear for the board exam in at least five subjects and a maximum of six and there is little scope for them to pursue multidisciplinary education.
- In other words, a student who has picked a combination of Physics, Mathematics and Chemistry cannot simultaneously study History or Political Science.
- But under the proposed system, that will be possible as the NEP envisages "**no hard separation**" among arts, humanities and sciences.

"Modular Board Examinations will be offered as opposed to a single examination at the end of the year. The final certification will be based on the cumulative result of each of the examinations", states the pre-draft NCF.

5. Changes in the teaching-learning for younger students

- At the foundation level, for children aged 3-8 enrolled in grades between preschool and class II, the Pedagogical approach suggested is play based.
- It adds that textbooks are to be used from Grade 1 and most of the content should be concrete materials toys, puzzles and manipulatives.
- Along with these materials, learning experiences organized through physical exploration of the classroom space become the most appropriate content.

- For Grades III, IV and V or the preparatory stage, children are to be introduced to textbooks on languages and mathematics, while also retaining the activity and discovery-based approach.
- And in the middle stage (class VI, VII, VIII), natural as well as social sciences will be introduced.
- The textbooks need to play a central role in mediating the content in the Middle stage.
- Both the expansion of curricular areas and the engagement with abstract ideas and unfamiliar contexts could be challenging and bewildering for students.
- Well-designed textbooks with clear expectations and specific learning goals would support students in entering these forms of understanding in a structured and systematic manner.

6. Proposed changes in specific subjects

- The NCF pre-draft on school education is not so much about specific changes in textbooks as those details will be put out in the position papers being developed by the 12-member steering committee and sub-committees of experts under it known as focus groups.
- However, it carries certain observations and suggestions. For instance, it says that stressing a lone piece of evidence, instead of exposing children to multiple contrasting pieces of evidence, throws up a "**lopsided or inadequate picture**" of a topic in social science textbooks.
- In Maths, it says that many students have developed a "**real fear**" of the subject in the current system.
- Methods of assessment in maths have also encouraged rote learning and promoted the perception of maths as "**mechanical computation**" it says.
- The solution, the committee says, is a shift towards play, activity, discovery and discussion-based learning.

7. Changes come into effect

- The government recently announced that textbooks based on the revised NCF will be taught in schools starting from the 2024-25 academic session.
- But a specific timeline for the implementation of the changes on exams, assessments and subject design has not been made available yet.

- In a statement, the Education Ministry said that the pre-draft of the NCF "still requires several rounds of discussion within the National Steering Committee".

INDIAN HISTORY BOOKS

1. Context

During a recent interview while promoting his movie ‘Samrat Prithviraj’, actor Akshay Kumar said the history of rulers like Prithviraj Chauhan “should be written about” in Indian history textbooks. He also appealed to the Union Education Minister to look into the matter.

2. Who decides the content of Indian history textbooks?

- Education as a subject comes under both the state and central governments according to the constitution, meaning both the state and central governments have a role to play here.
- Further, India has multiple education boards across the country that decide crucial matters such as conducting exams and deciding the syllabus in schools.
- State education boards, the central board of secondary education (CBSE), and the Council for the Indian School Certificate Examinations (CISCE) are a few examples. They are autonomous or independent bodies.
- They make decisions based on the guidelines laid down by the National Council of Educational Research and Training (NCERT).
- An autonomous organization, set up in 1961 by the government "to assist and advise the Central and State Governments" for improving the quality of education, NCERT's objectives include the task of preparing and publishing model textbooks.
- Its chairman is appointed by the Central government.
- For deciding the content of the textbooks, the NCERT is currently preparing a document called the National Curriculum Framework (NCF).
- It was last prepared in 2005 under the UPA government, and before that, it was revised in 1975, 1988, and 2000.

- The NCF will have broad guidelines for the revised syllabus that will be followed by the boards for their textbooks.

3. How are these guidelines laid down?

- The NCF is being developed according to the recommendations given in the National Education Policy (NEP) of 2020.
- If NEP is the guiding philosophy, then NCF is the pathway and this mandate is the constitution.
- Calling it a step towards the decolonization of the Indian education system, the focus will be on areas such as the holistic development of children, the vital role of teachers, learning in the mother tongue, and cultural rootedness.
- In September 2021, a committee was set up to draft these guidelines and will draft the final version later.
- The National Steering Committee includes 12 members and is headed by former ISRO Chief K Kasturirangan.
- The Committee also includes National Book Trust Chairman Govind Prasad Sharma, who has been the President of RSS's education wing Vidya Bharati which runs schools across India.

4. Way forward

- All states and UTs will develop their State Curriculum Frameworks (SCFs) after district-level consultations, surveys, and position papers by state-level focus groups in 25 areas such as science, gender education, social studies, etc.
- The State Councils of Educational Research and Training (SCERT) draw up the SCFs.
- Usually, the state drafts are modeled on the central draft, but a new bottom-up approach is being followed this time.
- After analyzing inputs received from the district-level consultations, states, and national-level surveys, the National Focus Group will prepare 25 position papers on the identified areas.
- NCF will be prepared after drawing insights from these papers and the draft SCFs.
- Finally, the draft NCF will be shared with the states/ UTs for their comments, and after possible changes, it will be placed before the Ministry of Education for approval.

- The document will be then sent to states and UTs for implementation.
- The NCF's revisions have a history of causing discontent among groups. After the 2005 NCF's recommendations, the NCERT replaced a book on Gautam Buddha for class 8 with Jawahar Lal Nehru's 'Discovery of India'.

5. Can some changes be made without this process?

- Yes, because these large-scale changes happen once in a decade.
- Even apart from them, NCERT can suggest changes which can include corrections, data updations, etc.
- History books were last changed significantly for Class 9 and Class 10 in 2019.
- In Class 9, deleted chapters included the history of clothing, the history of cricket, and one on capitalism and colonialism.

RAJASTHAN DAY

1. Context

Festivities celebrating Rajasthan Day are undergoing across the state today (March 30).

Rajasthan Day marks the date of the state's creation, unifying a motley group of princely states and chiefships.

2. Key Points

- The story of Rajasthan's foundation is intriguing. At the time of Independence, Rajasthan was almost wholly contained in the Rajputana Agency, a political office of the British Indian Empire.
- It consisted of 22 princely states and estates. Less than 22 months after independence, all 22 had assimilated to form what would become India's largest state. However, the story of the state's foundation did not end there.
- Modifications were made to the boundaries after the **State Reorganisation Act 1956**, giving Rajasthan its present shape.

3. The question of princely states

- Upon attaining independence from British rule, India faced multiple challenges. One of the most pressing ones was regarding princely states.
- The outgoing British administration handed over only 60 per cent of India's land to the Indian government. The rest was in the hands of rulers of 565 princely states.
- The British Empire administered India using two parallel systems direct rule in the provinces and indirect rule in the Princely states.
- Rulers of these states had a degree of autonomy about their domestic administration but accepted the suzerainty of the British Crown.

When the British left, the Crown's suzerainty lapsed. Thus, the ruler of every princely state had three options:

1. Join India,
2. Join Pakistan
3. Remain independent.

- This was a major problem for nascent India as each ruler had to be individually or collectively convinced to join the new Union of India.
- Especially in the aftermath of the Partition, it was of utmost importance to integrate these princely states into the union to maintain India's territorial integrity.
- Thus, the States Ministry, headed by Sardar Vallabhbhai Patel with VP Menon as secretary, was launched with the task of merging princely states into the Indian Union.

4. The Rajputana Agency

- The Rajputana Agency spanned roughly 330,330 sq. km with an agent under the Governor General in charge, residing at Mount Abu.
- All the princely states and estates in the agency (22 in total) were ruled by Hindu rulers except Tonk (which had a Muslim ruler).
- Most rulers were Rajput with the exception being Bharatpur and Dholpur which had Jat rulers.
- Since they largely remained loyal to the British during the revolt of 1857, there were no major administrative changes made in these areas during British rule.
- After independence, these states were slowly integrated into the Indian Union, in stages.

5. The Matsya Union

- The States Ministry believed that four princely states Alwar, Bharatpur, Dholpur and Karauli at the eastern edge of the erstwhile Rajputana Agency had "**natural, racial and economic affinities**" with each other, as per VP Menon's The Story of the Integration of Indian States (1956). Thus, the Matsya Union was inaugurated on March 18, 1948.
- At the time, it was understood that this would be a temporary formation and eventually, the Matsya Union would be merged either with the United Provinces or with the upcoming Rajasthan.

6. The Rajasthan Union in south-east Rajputana

- Almost parallelly, the idea of the state of Rajasthan began to take shape in the southeast of the erstwhile Rajputana Agency.
- Ten princely states, with Udaipur (also known as Mewar) being the largest, wanted to form a union.
- An idea to merge these into Madhya Bharat (roughly today's Madhya Pradesh) was also floated, but that did not go through.
- Another idea to merge these states into the much larger Udaipur was proposed by the Maharana of Udaipur, Bhupal Singh Bahadur.
- However, this was not agreeable to the other princely states. Hence, on March 25, 1948, the nine other states came together to form the Rajasthan Union. Within three days after its formation, Udaipur decided to join this union.
- After renewed discussions, the second Rajasthan Union was inaugurated by PM Jawaharlal Nehru on April 18, 1948.

7. Greater Rajasthan

- However, while the Matsya Union and the Rajasthan Union accounted for much of the east and south-east of the erstwhile Agency, the four largest princely states **Jaipur, Jodhpur, Bikaner and Jaisalmer** remained independent.
- The latter three also shared a border with Pakistan, making their swift integration into the Indian Union even more important.

- VP Menon suggested that these three, in addition to the other border state of Kutch (currently in Northern Gujarat) should be unified and put under the direct rule of the Centre.
- However, this move did not receive many backers. The alternative, backed by Patel was to merge all four states into the newly formed Rajasthan Union.
- Discussions to this effect bore fruit and on January 14, 1949, Sardar Patel announced "the impending reality of Greater Rajasthan".
- Greater Rajasthan was officially inaugurated by Patel on March 30, 1949, the date still celebrated as Rajasthan Day.
- The capital of the new Union was picked as Jaipur with the 36-year-old Maharaja of Jaipur, Sawai Man Singh II, selected as the Rajpramukh.
- On May 15, 1949, the Matsya Union merged with Greater Rajasthan to create a single, unified state of Rajasthan.

8. Modifications made by the State Reorganisation Commission

- After demands for states based on linguistic lines emerged in various parts of India after Independence, the State Reorganisation Commission (SRC) was formed in 1953 to recommend new state boundaries to the government.
- The commission's recommendations, with some modifications, were implemented in the State Reorganisation Act of November 1, 1956. For the state of Rajasthan, this brought some minor changes as well.
- Ajmer had continued to exist as a small, independent "Class C" state (under the direct control of the Centre) within the boundaries of central Rajasthan.
- It was formed in 1950 out of the former province of Ajmer-Merwara which, unlike the rest of Rajasthan, was under British administrative control.
- Given Ajmer's linguistic, cultural and geographical links to Rajasthan, the SRC deemed that "there was no reason for it to continue existing as an independent state". Thus, Ajmer was integrated into Rajasthan as a district.
- Also integrated was the Abu Road Taluk. In 1950, this taluk of the Sirohi district of Southern Rajasthan was sliced and included in the Bombay State.
- This had always been contested by Rajasthan and the SRC returned the taluk to the state.
- Finally, the enclave of Sunel in Rajasthan's southeastern edge was received from Madhya Pradesh in exchange for the enclave of Sironj, due to administrative reasons.

NATURAL JUSTICE AND PROPORTIONALITY

1. Context

The Supreme Court, on Wednesday (April 5), set aside the orders passed by the Ministry of Information & Broadcasting (MIB) on January 31, 2022, and the Kerala High Court on March 2, 2022, **refusing to renew Malayalam news channel Media One's broadcast license**

2. Background

- The Ministry of Information and Broadcasting, on January 31, 2022, refused to renew the broadcast license of the Malayalam channel MediaOne on the ground that the Ministry of Home Affairs had declined to grant it security clearance while considering its request for renewal of license
- The MHA had cited **alleged links between the channel's promoters Madhyamam Broadcasting Limited and Jamaat-e-Islami Hind** for denying the security clearance to Media One. Following this, the channel was taken off the air
- This led to the channel approaching the Kerala High Court against the Centre's action
- During the hearing in the HC, the Centre told HC that the decision to revoke the license was based on grounds of national security
- However, on March 15, last year, the Apex Court stayed the Kerala High Court order and allowed the channel to resume operations
- In the hearing before the SC, the channels' promoters argued that they were not given a chance to defend themselves as the national security reasons cited to deny renewal of their license were submitted to the HC in a sealed cover
- Further, it was contended that the fundamental right to freedom of speech and expression, which includes press freedom, can be restricted only on the grounds enumerated under Article 19(2) and there was no allegation that the channel violated the Programme and Advertising Code prescribed under the Cable Television Networking (Regulation) Act 1995 and the 1994 Rules

3. Principles of Natural Justice

- The bench allowed the challenge to the order of the MIB (Ministry of Info & Broadcasting) and judgment of the High Court on account of the principles of natural justice constitutionalized by its judgment in its 1978 ruling in “Maneka Gandhi vs Union of India”
- The Court observed that “that there is an inherent value in securing compliance with the principles of natural justice independent of the outcome of the case.”
- Actions which violate procedural guarantees can be struck down even if non-compliance does not prejudice the outcome of the case, the court held
- It also stated that “the core of the principles of natural justice breathes reasonableness into procedure”
- Additionally, the court clarified that in the present case, the burden is on the claimant to prove that the procedure followed infringes upon the core of procedural guarantees
- In its judgment, the court also observed that the duty to act fairly that is derived from common law is not exhaustively defined in a set of concrete principles, and courts, in India and abroad, have demonstrated considerable flexibility in the application of the principles of natural justice by fine-tuning them to different situations
- However, the court also added that such a concept of natural justice “cannot be put into a ‘straitjacket formula’” and is “incapable of a ‘precise definition’”
- Finally, the court upheld its judgments in Ex-Army men’s Protection Services and Digi Cable Network to hold that while “principles of natural justice may be excluded when on the facts of the case, national security concerns outweigh the duty of fairness”, “the state has been unable to prove that these considerations arise in the present factual scenario.”
- The Court added that though confidentiality and national security are legitimate aims for the purpose of limiting procedural guarantee, a “blanket immunity from the disclosure of all investigative reports cannot be granted.”

4. Proportionality

- The judgment went on to explain that the validity of the claim of involvement of national security considerations must be assessed on the test of:

- whether there is material to conclude that the non-disclosure of information is in the interest of national security
- whether a reasonable prudent person would draw the same inference from the material on record
- Even assuming that non-disclosure is in the interest of confidentiality and national security, the means adopted by the respondents do not satisfy the other prongs of the proportionality standard
- The top court then reiterated that courts can assess the validity of public interest immunity claims albeit based on the “structured proportionality standard”
- On the practice of sealed covers, the court observed that “the power of courts to secure material in a sealed cover when contradistinguished with the scope of assessment of public interest immunity claims is rather unguided and ad-hoc.”
- Additionally, the Court said that “while public interest immunity claims conceivably impact the principles of natural justice, sealed cover proceedings infringe the principles natural justice and open justice.”
- It also suggested that the court could have taken the course of redacting confidential portions of the document and providing a summary of the document’s contents
- The non-renewal of permission to operate a media channel is a restriction on the freedom of the press which can only be reasonably restricted on the grounds stipulated in Article 19(2) of the Constitution
- The reasons for denying a security clearance to MBL, that is, its alleged antiestablishment stance and the alleged link of the shareholders to JEI-H, are not legitimate purposes for the restriction of the right of freedom of speech protected under Article 19(1)(a) of the Constitution

General Studies II: Polity

LEGISLATIVE COUNCILS IN STATES

1. Context

SP has won 31 of 36 UP Vidhan Parishad seats that went to polls, giving itself a boost and a majority in the House.

2. What are the Legislative Councils, and why are they important?

- India has a bicameral system i.e., two Houses of Parliament. At the state level, the equivalent of the Lok Sabha is the Vidhan Sabha or Legislative Assembly; that of the Rajya Sabha is the Vidhan Parishad or Legislative Council.
- A second house of the legislature is considered important for two reasons: one, to act as a check on hasty actions by the popularly elected House and, two, to ensure that individuals who might not be cut out for the rough-and-tumble of direct elections too are able to contribute to the legislative process.
- Opposition to the idea of Legislative Councils is centered on three broad arguments.
- One, they can be used to park leaders who have not been able to win an election.
- Two, they can be used to delay progressive legislation.
- Three, they would strain state finances.
- Opinion in the Constituent Assembly was divided on the question of having a Legislative Council.
- The idea was backed on the above grounds: it was also suggested that having a second chamber would allow for more debate and sharing of work between the Houses.

3. Do all states have Legislative Councils?

- No. Our constitution does not force a bicameral legislature on states.
- It gives states the option of having a second House.
- As of today, seven states have Legislative Councils. These are Jammu and Kashmir, Bihar, Uttar Pradesh, Maharashtra, Karnataka, Andhra Pradesh, and Telangana.

4. Importance of state legislative councils

Check against Hasty Legislation: A second House of the legislature is considered important to act as a check on hasty actions by the popularly elected House. If there are two chambers, the measures passed by one would be scrutinized by the other minutely. Hence the laws enacted finally would be carefully analyzed and thoroughly discussed.

Prevent autocracy: It is argued that the second house checks the lower chambers' autocratic tendencies. To vest the legislative powers with a popularly elected House alone may prove harmful to the people of the state as legislation may be arbitrary.

Accommodation of Talent: Elderly, experienced, and sober individuals, cannot-bear the ordeal of electioneering neither campaign nor are they keen to indulge in vicious party politics. The legislative councils accommodate such personalities not only through the nominated quota but also through the quota reserved for teachers and graduates.

Reduce the workload of legislative assembly: Since the legislative assemblies are generally flooded with work, due to the rapid growth in the functions of a modern welfare state, a unicameral legislature cannot cope with the work and devote fully to the bills brought before it for enactment. The legislative council lessens the burden of the lower House and enables an assembly to fully concentrate on measures of greater importance.

5. How much money is needed to set up a Legislative Council?

- Requirements would differ from state to state.
- Rajasthan told the standing Committee that approximately Rs. 100 crores would be required.
- Assam quoted a one-time expenditure of Rs. 68.33 crore, and a recurring annual expenditure of Rs 19.28 crore.

6. How many members of the council were elected?

- Membership may vary, but the Legislative Council must not have more than a third of the total membership of the Assembly of that state and in no case fewer than 40 members. (The exception is J&K, where the Legislative Council has 36 members vide Section 50 of the constitution of the state.)
- About 1/3rd of the members are elected by members of the Assembly, another 1/3rd by electorates consisting of members of municipalities, district

boards, and other local authorities in the state, 1/12th by an election consisting of teachers, and 1/12th by registered graduates.

- The remaining members are nominated by the Governor from among those who have distinguished themselves in literature, science, art, the Cooperative movement, and social service.
- Legislative Councils are permanent houses, and like Rajya Sabha, one-third of their members retire every two years.

7. Difference between the state legislative councils and Rajya Sabha

- The council's position compared to the legislative assembly is much weaker than the position of the Rajya Sabha as compared to the Lok Sabha. The Rajya Sabha has equal powers with the Lok Sabha in all spheres except financial matters and with regard to the control over the Government.
- The councils consist of people from diverse backgrounds like graduates, teachers, and outstanding persons in the fields of art, literature, science, and social service and thus do not reflect the federal element of the polity. The Rajya Sabha consists of the representatives of the states and thus reflects the federal element of the polity.
- The council is heterogeneously constituted. It represents different interests and consists of differently elected members and also includes some nominated members. The Rajya Sabha is homogeneously constituted. It represented only the states and consists of mainly elected members (only 12 out of 250 are nominated).
- Further councils are not permanent and their constitution depends upon the states. Many states don't have legislative councils. Rajya Sabha is a permanent and continuous chamber where representatives are elected for the house.

IDU MISHI, TIGER BROTHERS

1. Context

National Tiger Conservation Authority (NTCA) said that the **Dibang Wildlife Sanctuary in Arunachal Pradesh** would soon be notified as a tiger reserve. The announcement has caused disquiet among the area's **Idu Mishmi** people, who feel that a tiger reserve would “hinder their access” to the forest



2. About Idu Mishmi tribe

- The **Idu Mishmi is a sub-tribe** of the larger Mishmi group (the other two Mishmi groups are Digaru and Miju) in Arunachal Pradesh and neighbouring Tibet
- Known for their weaving and craftsmanship skills, the Idu Mishmis primarily live in Mishmi Hills, bordering Tibet
- Their ancestral homelands are spread over the districts of Dibang Valley and Lower Dibang Valley as well as parts of Upper Siang and Lohit
- The tribe is estimated to comprise around 12,000 people (as per census 2011), and their language (also called Idu Mishmi) is considered endangered by UNESCO
- Traditionally animists, the tribe has strong ties with the region's rich flora and fauna
- Animals such as the hoolock gibbons and tigers have deep cultural relations with the Idu Mishmi
- Tigers are especially important to the Idu Mishmis according to Idu mythology, they were born to the same mother, and thus, tigers are their “elder brothers”

- While hunting has traditionally been a way of life, the Idu Mishmis also follow a strict belief system of myths and taboos ‘iyu-ena’ that restrict them from hunting many animals, including a complete prohibition on killing tigers
- Anthropologists and other researchers who have studied the area say that this belief system has led to a unique model of wildlife conservation
- Idu beliefs concerning tigers prevent their widespread and immediate retaliatory killing...it is because of these cultural beliefs that tigers thrive in these areas

3. Dibang Wildlife Sanctuary as a tiger Reserve

- While the Dibang Wildlife Sanctuary a biodiversity hotspot home to rare Mishmi takin, musk deer, goral as well as clouded leopards, snow leopards and tigers was notified in 1998, plans to declare it as a tiger reserve have been afoot for a while now
- In 2012, two tiger cubs were rescued from the Angrim Valley village in Dibang Valley. “Since the rescue, the Dibang Valley district has been witnessing a series of conservation interventions by state and non-state actors,”
- In 2014, the Wildlife Institute of India (WII) in collaboration with NTCA had carried out a survey to determine the presence of tiger population in the area
- Their study based on photographic evidence via camera trapping recorded the presence of tigers in the highest reaches of the Mishmi Hills
- It is primarily based on these findings that a case is being made to declare the sanctuary as a tiger reserve

4. Resistance from the Idu Mishi

- The tribe has been vociferously opposing any move to convert the wildlife sanctuary into a tiger reserve, fearing that the move will “cut off access to their lands”
- Following the announcement, the tribe’s apex body, the Idu Mishmi Cultural and Literary Society (IMCLS), put out a statement saying that while their cultural ethos emphasised on the protection of wildlife, it should not be done at the cost of “lives and livelihoods of local communities”

- In its current form as a wildlife sanctuary, the community's access to the Dibang forests has not been impacted. But many say a tiger reserve would increasingly restrict access
- An upgrade to a tiger reserve would feature stricter security measures like a 'Special Tiger Protection Force', which would be guarding the area at all times. This, the community believes, would cut off access to their forest lands
- More recently, the community has declared part of its forest land as a 'Community Conserved Area', or a CCA
- It is a model governed entirely by local populations, where villagers are demarcate a part of their ancestral land as a "biocultural conserved area", where they ban hunting, felling trees, and implement other conservation measures
- Moreover, members of the community claim that Dibang Wildlife Sanctuary was created without people's consent or knowledge. "It was unilateral, arbitrary and illegal
- They did not follow the due procedure as mentioned in the provisions of the Wildlife Protection Act, 1972 and the Land Acquisition Act, 1894...many residents whose areas were made part of the sanctuary were not consulted
- In 2015, the community had approached the Gauhati High Court seeking legal re-demarcation of the wildlife sanctuary
- The community also alleges that the WII study about the presence of tigers in the upper reaches of the Mishmi hills, the findings of which were released in 2018, is "misleading"
- Back then, the IMCLS had written to the NTCA saying that the study failed to mention that "photo-captures of tigers at higher altitudes of 3,246 and 3,630 m. occurred outside the sanctuary and in community-owned forests."

General Studies II: international relations

WHO

1.Context

In April 1945, politicians from around the world gathered in San Francisco to establish the United Nations

At the meeting, leaders from Brazil and China suggested the creation of another global organization: one specifically devoted to global health rather than global politics



2. About WHO

- The World Health Organization (WHO) was born three years later, when its constitution came into effect on April 7, 1948
- It states that health is a human right that every human being is entitled to, “without distinction of race, religion, political belief, economic or social condition” and that “the health of all peoples is fundamental to the attainment of peace and security.”
- The organization’s headquarters are based in Geneva, Switzerland, with six regional and 150 country offices across the world
- WHO leads global efforts to expand universal health coverage
- They direct and coordinate the world’s response to health emergencies and promote healthier lives from pregnancy care through old age

- WHO's work remains firmly rooted in the basic human right to health and well-being principles, as outlined in their 1948 Constitution.
- The World Health Assembly is the decision-making body of WHO and is attended by delegations from all Member States
- The Global Health Histories project was established within the WHO headquarters in late 2004 and expanded into the regional offices from 2009 onwards
- An official WHO activity, its mission is based on the principle that understanding the history of health, especially during the last 60 years, helps the global public health community to respond to the challenges of today and help shape a healthier future for everyone, especially those most in need

3. Challenges faced by WHO

3.1. Small Pox

- One of the biggest successes in the WHO's quest to ensure the global population's well-being came in 1980, when the organization officially announced it had wiped out a common but deadly centuries-old infectious disease
- Smallpox eradication was a perfect example of when the WHO works best
- During the Cold War, there was wide-reaching agreement across the two blocs that the eradication of smallpox was a goal to be tackled. That's when the WHO has seen its biggest successes: When members agree on which projects are worthy to be undertaken and how

3.2. Ebola Outbreak

- 2014 **Ebola outbreak** in Guinea, Liberia and Sierra Leone offers an example of a WHO job less well done
- The organization was criticized, among other things, for not reacting swiftly enough to address the epidemic
- There were unrealistic expectations for WHO, with many expecting, to go in force to the affected countries to confront the outbreak
- This is not within the WHO's mandate. Its role is to guide the response, develop guidance, but not to go into a country to help address a specific health threat
- In fact, the WHO has no authority to take action in a member state unless that member state asks for help

- After the Ebola epidemic from 2014 to 2016, the organization made significant changes to its structure
- Example: It now relies to a lesser degree on national governments for crucial health information, thus lowering the chances of missing the start of another serious disease outbreak

3.3. Malaria Eradication attempt

- The organization's agreement to give up on trying to eradicate **malaria** in the 1960s represents another example of what some consider a botched job
- The WHO launched the Global Malaria Eradication Programme (GMEP) in 1955.
- It looked promising, with 15 countries and one territory managing to eradicate the disease
- But there was little to no progress in sub-Saharan Africa under the program, and in many places, failure to sustain GMEP actually led to a resurgence of malaria. In 1969, the program was discontinued
- One reason that the eradication didn't work, is that malaria isn't solely a human disease, but has reservoirs in nature. This differentiates it from smallpox

3.4. Covid-19

- Some critics, then-US-President Donald Trump among them, complained at the beginning of the **COVID-19 pandemic** that the WHO was not doing enough to support member states in their fight against the disease
- But experts like El-Sadr and Gradmann say that it wasn't the WHO's job to take action and introduce initiatives at the height of the coronavirus pandemic
- During COVID, the WHO provided data and did administrative work, But initiatives to fight The disease had to come from the individual member states. I don't think the WHO played a large role in the COVID pandemic
- Members' national governments were in charge of making decisions on how to best contain the pandemic in their country

WHY AL AQSA MOSQUE IS IMPORTANT TO ISLAM

1. Context

A Israeli police **raid** on Jerusalem's Al-Aqsa mosque has triggered a furious reaction from Palestinians across the occupied West Bank and the wider Arab and Muslim world



2. What is Al Aqsa Mosque

- The **Al-Aqsa** lies at the heart of Jerusalem's Old City on a hill known to Jews as Har ha-Bayit, or Temple Mount, and to Muslims internationally as al-Haram al-Sharif, or The Noble Sanctuary
- Muslims regard the site as the third holiest in Islam, after Mecca and Medina
- Al-Aqsa is the name given to the whole compound and is home to two Muslim holy places: the Dome of the Rock and the Al-Aqsa Mosque, also known as the Qibli Mosque, which was built in the 8th century AD
- The compound overlooks the Western Wall, a sacred place of prayer for Jews, for whom the Temple Mount is their most sacred site
- Jews believe biblical King Solomon built the first temple there 3,000 years ago. A second temple was razed by the Romans in AD 70

- Israel captured the site in the 1967 Middle East war and annexed it with the rest of East Jerusalem and adjoining parts of the West Bank in a move not recognized internationally
- Jordan, whose ruling Hashemite family has custodianship of the Muslim and Christian sites, appoints members of the Waqf institution which oversees the site

3. Al aqsa in the flashpoint of Israel-Palestinian Conflict

- The Al-Aqsa compound has long been a flashpoint for deadly violence over matters of sovereignty and religion in Jerusalem
- Under the longstanding “status quo” arrangement governing the area, which Israel says it maintains, non-Muslims can visit but only Muslims are allowed to worship in the mosque compound
- Jewish visitors have increasingly prayed more or less openly at the site in defiance of the rules, and Israeli restrictions on Muslim worshippers’ access to the site have led to protests and outbreaks of violence
- Clashes at the site in 2021 contributed to setting off a 10-day war with Gaza
- In 2000, the Israeli politician Ariel Sharon, then opposition leader, led a group of Israeli lawmakers onto the Temple Mount/al-Haram al-Sharif complex
- Palestinians protested, and there were violent clashes that quickly escalated into the second Palestinian uprising, also known as the Al-Aqsa Intifada

INDIA'S ROLE IN KOREAN WAR

1. Context

In its G20 year, India has declared it will represent the **voice of the “Global South” for peace**. Prime Minister Narendra Modi’s message to Russian President Vladimir Putin that **“This is not the era of war”** has won him plaudits from the Western alliance that is backing Ukraine.

It has given rise to expectations in some quarters that India, which often casts itself in the role of “Vishwaguru”, could use its good offices with both Kyiv and Moscow to help bring the war to an end.

It has also rekindled interest in the only other diplomatic intervention by India in a distant war seven decades ago, one that revealed both its international heft as well as exposed its limitations

2. Outbreak

- As the 1950 Korean War pitted Cold War opponents against each other, Prime Minister Jawaharlal Nehru made a huge diplomatic push to prevent an escalation into another world war, and for the parties to arrive at a quick ceasefire
- The efforts were only partially successful. Even so, India is counted among the countries that contributed to bringing the war to a close.
- New Delhi also discharged an important role in the months after the truce, as chair of a committee to repatriate prisoners of war
- A couple of attempts by India to bring about a ceasefire ended in failure. However, its 1952 proposals for the exchange of prisoners enabled the July 1953 armistice agreement, which marks 70 years this year
- On June 25, 1950, North Korean forces invaded South Korea. The peninsula had been divided at the end of World War II along the 38th Parallel, with Soviet and US forces occupying the North and South respectively
- In 1948, after the two Koreas declared themselves separate countries, and held their own elections, the occupying forces departed
- However, neither the North nor the South accepted the other and to this day, both claim the entire Korean peninsula and the islands on either side

3. India at the UN

- At the time of the invasion, India was among the six non-permanent members of the Security Council, and held its rotating presidency that month. Three resolutions on the war came up in quick succession
- The USSR was boycotting due to the UN’s refusal to replace Taiwan with the People’s Republic of China in the Security Council and with no threat of

- a Soviet veto, the US moved the first resolution on the same day as the invasion, calling for a withdrawal of North troops from South territory
- New Delhi voted in favour, pleasantly surprising the US. Barnes wrote that India's UN representative Benegal Rau and the UK representative persuaded the US to tone down the language of the resolution calling the North's action a "breach of peace" rather than an "act of aggression"
 - A second US-sponsored resolution on June 27 asked UN members to offer "such assistance as may be necessary" to South Korea to repel the invasion. President Harry S Truman announced he would deploy the Seventh Fleet to the Taiwan strait, and step up assistance to the French in Indo-China
 - Rau initially refused to vote, but Nehru eventually accepted the resolution after the British High Commissioner in India conveyed there was "no room for neutrality when it came to aggression"
 - India abstained on the third resolution on July 7, which gave US forces command over combined international forces under UN auspices. Not wanting to be seen as shirking an international call to duty by the UN, India sent the 60th Parachute Field Ambulance, which did outstanding work treating wounded soldiers
 - Nehru's view at this time was that giving the People's Republic of China admission into the Security Council could provide resolution in Korea
 - The USSR returned to the Security Council at the end of August, and blocked further US resolutions, including one on sanctioning China
 - Due to the Soviet vetoes, the US shifted the action to the UN General Assembly. Here India failed in an effort to block a US-British resolution for UN forces to cross into North Korea. As international troops crossed the 38th Parallel, Chinese forces entered the fray, and it seemed the crisis might spiral out of control
 - Nehru's proposal for a truce, and talks with the communist side on Korea and Taiwan after cessation of hostilities found traction at the UN. Rau was appointed to a three-member committee to come up with ceasefire proposals that were overwhelmingly approved by the General Assembly
 - But Beijing rejected the proposals, and in February 1951, a US resolution in the General Assembly for sanctioning China was adopted with a decisive majority. Stung by repeated failure, Nehru cooled off

4. India and Prisoners War

- In 1952, when the Panmunjom talks for an armistice between the UN and the communist side (comprising Chinese and North Korean officials) unravelled over the fate of the PoWs, India got into the act again
- The UN negotiators insisted that no PoW would be repatriated against his will by their count, only 70,000 of 170,000 prisoners in their custody wanted to be sent back. The communists wanted a full exchange
- Nehru put the forceful V K Krishna Menon on the job of finding a way to break the impasse
- Backed by Britain and Canada, Menon proposed a commission of four representatives, two from each bloc Sweden, Switzerland, Czechoslovakia, and Poland plus a fifth country as “umpire”, that would take charge of all PoWs at war’s end
- Those willing to be repatriated would be sent home immediately; the fate of the unwilling would be decided over the next six months
- The UNGA adopted the proposal, but with the Soviet bloc opposing and China rejecting, it had to be shelved
- But when armistice negotiations resumed in April 1953, the proposal became the basis for the eventual solution on the PoWs
- A Neutral Nations Repatriation Committee was set up with the same four member countries. India was selected to chair the committee; Nehru sent Lt Gen K S Thimayya for the job, and P N Haksar as his political adviser
- The committee would hold the PoWs for 90 days; the Korean conference would discuss the fate of the unrepatriated for 30 days; after this the prisoners would be either released or handed over to the UN General Assembly
- Maj Gen S S P Thorat was appointed Commander of the Custodian Force India, which would take custody of over 22,000 PoWs who were unwilling to go back
- The Armistice Agreement was signed on July 27, 1953

5. Relevance

As the world grapples to find an end to the war in Ukraine, President Vlodymyr Zelenskyy’s invitation to President Xi Jinping to visit his country has led to speculation that Beijing, after stitching up the Saudi-Iran peace deal, might be readying for a more high-profile peacemaking role

Brazil's President Luiz Inácio Lula da Silva has said he wants to launch a “peace club” of countries, including China and India, that can work together to find a way out in Ukraine

Any role India might want to play is likely to be informed by its experience in trying to end another war, 70 years ago

FOREIGN TRADE POLICY 2023

1. Context

Recently, the Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles launched the Foreign Trade Policy (FTP) 2023 which comes into effect from April 1, 2023.

2. Key Points

- The Previous Foreign Trade Policy for 2015-2020 had targeted exports of USD 900 billion by 2020
- This target was extended along with the policy for three years till March 2023.
- India is, however, likely to end 2022-23 with total exports of USD 760-770 billion as against USD 676 billion in 2021-22.

3. About FTP 2023

The policy is based on the Principles of trust and partnership with exporters and aims at process re-engineering and automation to facilitate ease of doing business for exporters.

The Key Approach to the policy is based on these 4 pillars:

1. Incentive to Remission
2. Export promotion through collaboration-Exporters, States, Districts and Indian Missions
3. Ease of doing business, reduction in transaction cost and e-initiatives and
4. Emerging Areas-E-Commerce Developing Districts as Export Hubs and Streamlining SCOMET Policy.

4. Goals and Targets

- The Government aims to increase India's overall exports to USD 2 trillion by 2030, with equal contributions from the merchandise and services sectors.
- It also intends to encourage the use of Indian Currency in cross-border trade, aided by a new payment settlement framework introduced by the RBI in July 2022.
- This could be particularly advantageous in the case of countries with which India enjoys a trade surplus.

5. Salient features

- Targets \$ 2 trillion in exports by 2030
- Continuous and responsive framework with no end date
- Making the rupee a global currency
- Making India a trade hub
- Digitisation and faster processing of applications
- Amnesty scheme for the shortfall in export obligations
- Restructuring of the Department of Commerce
- Over 50 per cent reduction threshold for recognition of star trade houses

6. Process Re-Engineering and Automation

- The policy emphasizes export promotion and development, moving away from an incentive regime to a regime which is facilitating, based on technology interface and principles of collaboration.
- FTP 2023 codifies implementation mechanisms in a paperless, online environment, building on earlier ease-of-doing-business initiatives.
- Reduction in fee structures and IT-based schemes will make accessing export benefits easier for MSMEs and others.
- Duty exemption schemes for export production will now be implemented through Regional Offices in a rule-based IT system environment, eliminating the need for a manual interface.

7. Towns of Export Excellence

- Four new towns, namely Faridabad, Mirzapur, Moradabad and Varanasi have been designated as Towns of Export Excellence (TEE) in addition to the existing 39 towns.
- The TEEs will have priority access to export promotion funds under the MAI scheme and will be able to avail of Common Service Provider (CSP) benefits for export fulfilment under the EPCG Scheme. It is expected to boost the exports of handlooms, handicrafts and Carpets.

8. Recognition of Exporters

- Exporter firms recognized with "status" based on export performance will now be partners in capacity-building initiatives on a best-endeavour basis.
- Similar to the "each one teaches one" initiative, 2-star and above status holders would be encouraged to provide trade-related training based on a model curriculum to interested individuals.
- Status recognition norms have been re-calibrated to enable more exporting firms to achieve 4 and 5-star ratings, leading to better branding opportunities in export markets.

9. Promoting export from the districts

- The FTP aims at building partnerships with State governments and taking forward the Districts as Export Hubs (DEH) initiative to promote exports at the district level and accelerate the development of the grassroots trade ecosystem.
- Efforts to identify export-worthy products & services and resolve concerns at the district level will be made through an institutional mechanism State Export Promotion Committee and District Export Promotion Committee at the State and District level, respectively.
- District-specific export action plans to be prepared for each district outlining the district-specific strategy to promote the export of identified products and services.

10. Streamlining SCOMET Policy

- India is placing more emphasis on the "export control" regime as its integration with export control regime countries strengthens.

- There is a wider outreach and understanding of SCOMET (Special Chemicals, Organisms, Materials, Equipment and Technologies) among stakeholders and the policy regime is being made more robust to implement international treaties and agreements entered into by India.
- A robust export control system in India would provide access to dual-use High-end goods and technologies to Indian exporters while facilitating exports of controlled items/technologies under SCOMET for India.

11. Facilitating E-Commerce Exports

- Various estimates suggest e-commerce export potential in the range of \$200 to \$300 billion by 2030.
- FTP 2023 outlines the intent and roadmap for establishing e-commerce hubs and related elements such as payment reconciliation, bookkeeping, returns policy and export entitlements.
- As a starting point, the consignment-wise cap on E-Commerce exports through courier has been raised from ₹ 5 Lakh to ₹ 10 Lakh in the FTP 2023.
- Depending on the feedback of exporters, this cap will be further revised or eventually removed.

12. Facilitation under the Export Promotion of Capital Goods (EPCG) Scheme

The EPCG Scheme allows the import of capital goods at zero Customs duty for export production, which is being further rationalised. Some key changes being added are:

- **Prime Minister Mega Integrated Textile Region and Apparel Parks (PM MITRA)** scheme has been added as an additional scheme eligible to claim benefits under the CSP (Common Service Provider) Scheme of Export Promotion Capital Goods Scheme (EPCG),
- Dairy Sector to be exempted from maintaining Average Export Obligations to support the dairy sector to upgrade the technology.
- **Battery Electric Vehicles (BEV)** of all types, Vertical Farming equipment, Wastewater Treatment and Recycling, Rainwater harvesting system and Rainwater Filters and Green Hydrogen are added to Green Technology products and will now be eligible for reduced Export Obligation requirements under EPCG Scheme.

13. Facilitation under the Advance Authorization Scheme

- The advance authorisation Scheme accessed by DTA units provides duty-free import of raw materials for manufacturing export items and is placed at a similar footing to EOU and SEZ schemes.
- Special Advance Authorisation Scheme extended to the export of the Apparel and clothing sector under a self-declaration basis to facilitate prompt execution of export orders.
- Benefits of Self-Ratification Scheme for fixation of Input-Output Norms extended to 2 stars and above status holders in addition to Authorised Economic Operators at present.

14. Merchanting trade

- Merchanting trade of restricted and prohibited items under the export policy would now be possible.
- Merchanting trade involves the shipment of goods from one foreign country to another foreign country without touching Indian ports, involving an Indian intermediary.
- This will be subject to compliance with RBI guidelines and won't be applicable for goods/ items classified in the CITES and SCOMET lists.
- This will allow Indian entrepreneurs to convert certain places like GIFT City etc. into major merchanting hubs as seen in places like Dubai, Singapore and Hong Kong.

15. Amnesty Scheme

- Under the amnesty Scheme, an online portal will be launched for registration and a six-month window will be available to exporters to avail of the scheme.
- It will cover all pending cases of default in the export obligation of authorisations, these can be regularised on payment of all customs duties exempted in proportion to unfulfilled export obligations.

WORLD BANK REPORT

1. Context

New research published by the World Bank, titled “Falling Long-Term Growth Prospects”, argues that the current decade (2020-2030) could be a lost decade in the making not just for some countries or regions as has occurred in the past but for the whole world.

2. Key Highlights of the Report

- The report " Falling Long Term Growth Prospects: Trends, Expectations, and Policies is published by the World Bank.
- The report uses a comprehensive database of multiple measures of potential growth.
- It examines trends in potential growth and its drivers, global and regional prospects for potential growth and investment over the 2020s, and a range of policy options to lift potential growth.
- It documents three major findings, First, there has been a protracted, broad-based decline in potential growth and its underlying drivers. Major adverse shocks also reduce potential growth by leaving a lasting impact on these drivers.
- Second, the slowdown in potential growth is expected to persist for the rest of this decade.
- Third, while they are significant challenges confronting emerging markets and developing economies (EMDEs), they are not insurmountable.
- It is possible to reverse the slowdown in potential growth and chart a sustained, sustainable, and inclusive growth path by implementing ambitious, broad-based, and forceful policies at the national and global levels.

3. What are the reasons for the slowdown?

- The biggest reason for the slowdown is that the EMDEs are in the midst of a prolonged period of weakness.
- Look at the data for actual GDP growth and per capita GDP growth in the two tables (A.1 and A.3) below.

It shows a broad-based decline over the past two decades whether a country belongs to EMDEs or middle-income countries (MICs) or low-income countries (LICs).

- The World Bank has looked at a whole set of fundamental drivers that determine economic growth and found that all of them have been losing power.
- These fundamental drivers include things like capital accumulation (through investment growth), labor force growth, and the growth of the total factor productivity (which is the part of economic growth that results from more efficient use of inputs and which is often the result of technological changes), etc.
- Not surprisingly then, the potential growth rate is expected to decelerate further.

4. What about India?

- Even though India has also lost its growth momentum over the past two decades, it will likely remain a global leader when it comes to growth rates.
- India falls under the South Asia Region (SAR), which is expected to be the fastest-growing among emerging market and developing economies (EMDEs) for the remainder of this decade.
- To be sure, India accounts for three-fourths of the SAR output.
- SAR includes countries like Afghanistan, Pakistan, Sri Lanka, Nepal, Bangladesh, etc.
- Economic activity in the South Asia region (SAR) rebounded strongly from the recession caused by the COVID-19 pandemic, expanding by 7.9 percent in 2021 after a drop of 4.5 percent in 2020.
- Output in the region is on track to grow by about 6.0 percent a year between 2022 and 2030, faster than the 2010s annual average of 5.5 percent and only moderately slower than growth in the 2000s, states World Bank.

5. What can be done to boost potential global growth?

According to the World Bank, if all countries make a strong push, potential global GDP growth can be boosted by 0.7 percentage points to an annual average rate of 2.9%; this would be faster than the preceding decade (when the global economy grew by 2.6%) but still slower than the first decade of the 2000s (when the growth clocked 3.5% per annum).

There are six priority interventions suggested by the report:

- Incentivize investments in the economy,
- Boost labour force participation rates (especially for women),
- Cut trade costs,
- Capitalize on service exports,
- Improve global cooperation, and ensure that fiscal policies and monetary policies don't run against each other
- For instance, Government expenditures raise deficits at a time when central banks are trying to contain inflation.

SCOTTISH INDEPENDENCE

1. Context

British Prime Minister Rishi Sunak was quick to reject a call from the new First Minister of Scotland and leader of the governing Scottish National Party (SNP), Humza Yousaf, to hold a second referendum for Scotland's independence from the U.K.

2. Scotland demanding independence

- The independent Kingdom of Scotland was formed in the 19th century and went on to fight wars to remain independent from the Kingdom of England.
- In 1603, the two kingdoms entered a personal union and were then ruled by the same monarchs.
- In 1707, due to economic and political vulnerabilities prevailing on both sides, the British and Scottish Parliaments passed the Acts of Union, entering into a political union under the name of Great Britain.

- While Scotland could retain some of its decision-making powers it did not get equal representation in the united Parliament and longstanding cultural and political differences remained.
- Demands for self-governance soon began to sprout, eventually leading to two referendums in 1979 and 1997, resulting in the formation of a new devolved Parliament of Scotland in 1999.
- This Parliament was given the mandate to form legislation on devolved issues such as health, transport, education and so on, while the power to legislate on defence, foreign policy, trade, immigration and currency was reserved.
- The last referendum for independence took place in 2014, where 55 per cent of Scots voted to stay in the three centuries-old unions while 45 per cent voted to walk out.
- A large proportion of Scots see independence from the U.K. as a question of self-determination and identity.
- Scotland accounts for 8 per cent of Britain's population and economy and one-third of its landmass.

3. Reasons for demand for Independence

- The SNP government says that people who live in Scotland should have the right to decide if they want to be an independent country.
- To relinquish doubts over the future of Scotland after independence, the SNP has been coming out with White papers on its vision for "Building a new Scotland".
- It currently gets a bloc grant from the British government for a large part of its annual expenditure which it plans to substitute with oil revenues from the North Sea once its gets independence.
- It says that instead of using the North Sea oil revenues to invest in future generations, the U.K. is using them to fund its current expenses, which undermines the interests of Scots.
- It also plans to rejoin the EU, expand its trade in the bloc and receive other associated benefits.
- The SNP also plans to keep using the British pound Sterling as its currency after independence.

- It also argues that Scotland is different from the U.K. in that its electoral system is already fairer and more proportionally represented than the U.K....
- It says it stands for different things more open immigration policies, a faster push for green transition free university education and geriatric care, taxation on higher earners and inclusion of the LGBTQ community.
- It also believes that the U.K. could make other decisions like Brexit in the future that would undermine Scottish interests.

4. U.K.'s Stand

- The British government believes that the SNP has failed to give a clearer picture of how issues of pensions and healthcare would work in an independent Scotland.
- It has also warned Scotland that if it rejoins the EU, it would lead to the creation of a hard border between Scotland and Britain.
- Before the 2014 referendum, the Economic Affairs Committee of Westminster had highlighted that retaining the sterling as Scottish currency would be problematic as the Monetary Policy Committee of the Bank of England, which forms policy for the U.K., could not entertain the interests of a separate country.
- It also said that Scotland would find it difficult to assume its share of the U.K.'s public debt, which runs into billions.
- Besides, the decommissioning of North Sea Oil would also have economic and trade implications for Britain.
- The biggest impact of Scotland's leaving the centuries-old Union in the current geopolitical environment would be on "Perceptions of Englishness among the English themselves, who make up 85 per cent of the U.K.'s population and the projection of Englishness as a national identity in the world.

5. The way forward

- The Scotland government has planned to hold 2023, a consultative plebiscite a nonbinding referendum in Scotland without a green light from Westminster.
- In November 2022, however, the U.K. top court ruled that such a referendum could not take place.

- Refusing to give up the SNP party's push for independence, it declared a new strategy that the next British general election or the Scottish Parliament election as a "de facto referendum" for independence, where the SNP would stand on the sole issue of Independence.
- Recent polls show that the support for a "yes" vote on independence has dropped to 39 per cent in the country, less than it was during the 2014 referendum.

COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS PACIFIC PARTNERSHIP (CPTPP)

1. Context

Britain on Friday agreed to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), a trade pact based around the Pacific rim, as it seeks to build ties around the world **after leaving the European Union**

2. What is CPTPP

- CPTPP is a free trade agreement (FTA) that was agreed in 2018 between 11 countries: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam
- Britain will become the 12th member, and the first to join since the partnership since its inception
- According to UK "CPTPP countries will have a combined GDP of 11 trillion pounds (\$13.6 trillion) once Britain joins, or 15% of global GDP"
- It does not have a single market for goods or services, and so regulatory harmonisation is not required, unlike the European Union, whose trading orbit Britain left at the end of 2020

3. Key Takeaways

- Britain says that exports to CPTPP countries were worth 60.5 billion pounds in the twelve months to end-Sept. 2022
- Membership of the grouping will add another 1.8 billion pounds each year in the long run, and possibly more if other countries join
- In an impact assessment of the deal when negotiations started in 2021, Britain said the agreement is estimated to deliver an increase of just 0.08% to GDP over the long term
- Only Malaysia and Brunei weren't covered by existing FTAs, and they only account for 0.33% of UK trade

4. Sectoral Impact

- Britain has agreed on a quota on beef imports but did not agree to lower food standards, under which hormone-treated beef is banned
- Tariffs on palm oil from Malaysia will be liberalised, and Britain also agreed on tariff reductions on bananas, rice and crab sticks following requests from Peru, Vietnam and Singapore respectively
- Britain highlighted that 99% of exports to CPTPP would be eligible for zero tariffs, including cheese, cars, chocolate, machinery, gin and whisky

5. Geopolitical factors

- While the long-term benefit for Britain's economy is set to be modest, Britain has other reasons for joining the bloc
- China has applied to join CPTPP, and Morita-Jaeger cited Britain's pivot towards the Indo-Pacific, where it has highlight China as an “epoch-defining challenge.”
- The CPTPP could enable the UK to enhance strategic ties with like-minded countries to protect a free and open Indo-Pacific region

NATURAL GAS

1. Context

The government announced that domestically produced natural gas would be priced at \$3.82 per million British thermal units (mmBtu) on a gross calorific value (GCV) basis for the second half of the fiscal year 2015-16 that is from October 2015 to March 2016 end.

This is a reduction of 18 per cent of prevailing prices, which came into effect on April 1, 2023.

2. Key Points

- Prices of locally produced natural gas are revised every six months as part of a new system of gas pricing initiated in October 2014.
- As such, this is a scheduled price revision and is in line with the fall in market prices of natural gas across the world.
- According to the new formula, domestic prices are a function of the prices of locally produced gas in four key markets of the world: National Balancing Point (UK), Henry Hub (US), Alberta Hub (US), Alberta Hub (Canada) and Federal Tariff of the Russian government.

3. Prices in India

- Indian prices are a weighted average of the four main markets.
- The volume of gas consumed in the corresponding markets weighs the prices.
- As such, Indian prices are not the same as those in any one market.

- However, the bi-annual revision ensures that Indian prices move in sync with global benchmarks.

4. Lowest prices

- Consumers of natural gas, including common people, will gain from the cheaper availability of compressed natural gas (CNG) and piped natural gas (PNG).
- According to India Ratings and Research, the benefit from reduced prices will be partly offset by the nearly 6 per cent depreciation of the rupee over April-September 2015.
- Even so, the net impact of reduced domestic gas prices, in rupee terms, would range between 11 per cent and 16 per cent.
- The move is likely to result in a cut of Rs 2.1-2.3/scm (Standard cubic metre) in PNG prices and a Rs 2.8-3.0/kg reduction in CNG prices. Retail prices of both CNG and PNG were cut.
- Companies in the business of gas distribution will benefit too.
- Shares of these companies rose on Wednesday Indraprastha Gas was up 3.7 per cent, Gujarat Gas gained 2.76 per cent, Gujarat State Petronet 1.42 per cent and Petronet LNG 1.16 per cent on the BSE.

5. Impact of lower prices

- The impact on government finances is likely to be mixed. The government will gain due to a reduction in the subsidy burden on account of urea but will lose out on income from state-owned producers of gas.
- Producers of domestic gas like ONGC Ltd, Oil India Ltd and Reliance Industries Ltd will be impacted adversely.
- India Ratings and Research estimate that ONGC will see its revenues decline by Rs 10.8 billion-11.5 billion and Oil by Rs 1.2 billion-1.3 billion.

General Studies III: Economy

PREPAID PAYMENT INSTRUMENTS

1. Context

For the past few years, many payment modes have been introduced and approved by RBI, which has facilitated the purchase of goods and services. One such technological development is the Prepaid Payment Instruments (PPIs).

One of the biggest features of this form of instrument is that value is already stored in these instruments including paper vouchers, prepaid smart cards, online wallets etc.

2. Prepaid payment instrument

- Prepaid Payment Instruments or commonly known as PPIs are instruments that facilitate the purchase of goods and services, enable remittance facilities, the conduct of financial services etc., against the value that is stored in them.
- These PPIs are generally issued by banks or non-banks where banks need to take approval and non-banks need authorisation before issuing such PPIs.
- PPIs come in various forms such as mobile wallets, smart cards, vouchers, magnetic chips, payment wallets etc.

3. Types of PPIs in India

Under the earlier Master Direction on Issuance and Operation of Prepaid Payment Instruments of 2017, the Reserve Bank of India (RBI) had classified prepaid payment instruments into three types viz.

3.1. Closed System PPIs

These PPIs were issued by an entity to facilitate the purchase of goods and services from the same entity only. There was no provision for cash withdrawal from the same

3.2. Semi-Closed PPIs

Such PPIs were issued by the RBI approved Banks and also RBI approved Non-Banks for the purchase of goods and services, remittance facilities, financial services etc, for use at a group of identified merchant locations which have a special contract with the issuer or through a payment aggregator/payment gateway to accept PPIs as payment instruments.

3.3. Open System PPIs

- These PPIs were issued by RBI-approved banks to be used by any merchant for the purchase of goods and services, remittance facilities, financial services etc.
- The above system of PPIs was found to be hampering interoperability and harmonisation amongst various PPIs.
- As a result, RBI came out with a new set of Master Directions on Prepaid Payment Instruments of 2021, laying down fresh eligibility criteria and conditions of use for payment system operators that are involved in the issuance and operation of Prepaid Payment Instruments.

4. Latest Categorisation of Prepaid Payment Instruments

4.1. Small PPIs

- These are issued by both banks and non-banks after obtaining minimum information about the PPI holder.
- These PPIs can only be used for the purchase of goods and services and that too at a group of identified merchant establishments/locations having a special contract with the issuer to accept the PPIs as Payment instruments.
- The facility of funds transfer or cash withdrawal from such PPIs has not been permitted.
- Under the category of Small PPIs, there are two types of Prepaid payment instruments. They are:

4.2. Small PPIs with cash loading facility

The total cash in these PPIs cannot exceed Rupees 10, 000 a month and the total amount during the year cannot exceed the amount of Rupees 1, 20, 000 in financial year. They have the facility to load cash.

4.3. Small PPIs with no cash-loading facility

This type of PPI has the same limit as mentioned above, but the cash loading facility is absent in these PPIs.

4.4. Full KYC PPIs

These PPIs are issued by Banks and non-banks after completing the Know Your Customer (KYC) process of the PPI holder.

These PPIs, however, can be used to purchase goods and services, cash withdrawals and fund transfers.

5. Specific categories of PPIs

5.1. Gift PPIs

- In these PPIs, the Maximum value of a prepaid gift instrument cannot exceed a sum of Rupees 10, 000.
- These PPIs are not reloadable and the facility of fund transfer and cash withdrawal is also not permitted.
- The PPI issuer is supposed to maintain the KYC details of the purchaser of such instrument and separate KYC will not be required for the customer who is issued such instruments through Debit Cards to their bank accounts and Credit Cards in India.
- A risk-based approach, which is duly approved by its Board, will be adopted by the PPI issuer to decide the number of such instruments which can be issued to a customer, transaction limits etc.
- At the request of the PPI holder, these PPIs will be revalidated, including through the issuance of a new instrument.
- Before the first loading of funds takes place or at the time of issuance of the PPI, the features of such PPIs have to be communicated to the PPI holder via SMS/email/any other means.

5.2. PPIs for Mass Transit Systems (PPI-MTS)

- The MTS operators issue these PPIs after the authorisation to issue such PPIs under the Payment and Settlement Systems Act, 2007.
- These PPIs are reloadable and they are used at only merchant outlets whose operations are within premises.
- The PPI issuer decides about the customer details required for the issuance of such PPIs.
- In these kinds of PPIs, the maximum outstanding value shall not exceed the limit of Rupees 3000 at any point in time
- Further, cash withdrawals and funds transfers are prohibited for such instruments.

6. Conclusion

- From the above discussion, it can be concluded that there are primarily two types of Prepaid Payment Instruments.
- However, RBI has created special categories where two more types of Prepaid Payment Instruments have been added viz. Gift PPIs and PPIs for Mass Transit Systems.
- To protect the holders and acceptors of PPIs from potential fraud and exploitation, RBI has made it necessary for the PPI issuer to state all the T&Cs for the usage of PPIs in clear and simple language.

MONETARY POLICY ON INEQUALITY

1. Context

The Monetary Policy Committee (MPC) of India's central's bank, the RBI will deliberate whether interest rates should be hiked further or not.

2. Key Points

- Since May last year, the existing EMIs for home loans, car loans or loans for business have been going up quite rapidly.
- This has been happening because the RBI has been repeatedly raising something called the repo rate.
- The repo rate is the rate at which the RBI lends money to the banking system.
- A hike in repo implies that banks and other financial institutions charge higher interest rates.

3. Reasons for raising interest rates

- The RBI has been doing this in its bid to contain inflation.
- RBI hopes that a higher EMI on an existing loan or a costlier new loan would dissuade enough people from borrowing money to fund future economic activity.

- The resultant slowdown in activity and demand for money will likely bring down inflation, which is essentially described as "too much money chasing too few goods".
- Since the RBI, which is the main agency charged with the responsibility of maintaining price stability in the Indian economy, cannot increase the supply of goods and services such as crude oil, cabbage and haircuts, it acts in a manner that reduces the demand for all goods and services.
- This week, too, it is expected that the RBI will end up raising the repo rate by 2 basis points.
- But just like the past two repo rate hikes in February and December, this decision is unlikely to be a unanimous one; More importantly, it will likely be widely debated for soundness.
- That's because both within the MPC and outside, many believe that any further rate hikes will result in crimping India's economic growth and worsening unemployment.

4. Pros and Cons of raising interest rates

- The main problem with hiking interest rates to contain inflation that may be getting caused by costlier crude oil (due to war or some geopolitical tension) or costlier vegetables (due to some unseasonal rains) is that the hike per se cannot improve the supply of those goods and services.
- Raising rates is, in no uncertain terms, a blunt instrument. It achieves the goal of containing prices by killing growth and employment. Many have questioned this approach in the past.
- The standard textbook answer to this criticism is: A central bank does this not so much to address the actual inflation which it can't control if it is driven by supply constraints but to prevent the "**Second-order effects**" of high inflation.
- The second-order effects refer to a spike in people's expectations of future inflation.
- This matters because if people do not see inflation as a minor blip and instead view inflation as here to stay and likely to worsen, they will do what any normal person should be expected to do: Ask their boss for a salary increment.
- But, this can quickly turn into a self-fulfilling prophecy. If workers are allowed to demand higher wages in anticipation of higher inflation, then

businesses will start charging higher prices in anticipation of higher input costs (real wages).

- Lo and behold, the economy will find itself in the middle of persistently high inflation.
- It has been shown that once inflation expectations become "**unanchored**" in this manner, policymakers find it quite tough to bring down inflation.

5. The problem with breaking this cycle of inflation expectations

- The trouble is, and this is one of the relatively ignored aspects of monetary policy, that inflation control by this method relies heavily on denying the common people, who are most affected by high prices, the chance to raise their wages in line with the already high prices of the first round.
- Worse still, higher interest rates make it difficult for the relatively worse off to get cheap credit to buy a home and create wealth.
- In essence, a contractionary monetary policy the kind being practised the world over at present essentially increases inequality in an economy.
- To be sure, inequality is the distance between the haves and the have-nots in any economy.
- In an academic paper published in January by the Federal Reserve, the board shows that "equality of access of the most important asset class for most households are also dependent on monetary policy.
- The tighter policy leads to greater inequality in ownership, in contrast to the literature that finds reduced wealth inequality based on asset prices.
- The effects of homeownership on wealth take time to accumulate, so the influence of this access channel on wealth inequality would accrue only with a considerable lag.
- When the US Central Bank raises interest rates, it places something as basic as home ownership out of the reach of common people.
- This reduces the people's ability to have access to an asset that creates wealth and this "**wealth inequality**" (relative to the wealthy) hits the poorer people with a lag.

6. Raising interest rates creates inequality

- From the **2008 Global Financial Crisis** until the war between Russia and Ukraine, most central banks, most notably the US Fed, practised an expansionary or loose monetary policy.

- Essentially, this meant interest rates were kept low (almost near zero in the case of the US Fed) while flooding the economy with additional money in a bid to spur economic activity.
- But during this period, there was growing criticism that low-interest rates were leading to higher wealth inequalities.
- When interest rates are low, savers barely get any rewards even as cheap credit-fuelled spending, profiting companies of different kinds.
- Under the circumstances, most of the capital appreciation happens in the stock markets. Most of the stocks in the economy are owned by rich
- The view that low-interest rates widen inequalities is quite widely held even among experts associated with the IMF and the US Fed.

7. Central bank's action

- Given the pernicious effects on inequality of both a contractionary as well as an expansionary monetary policy.
- The widening inequalities are a very long-term trend, one that has been decades in the making and depends on deep structural changes in any economy such as globalisation, technological progress, demographic trends etc.
- By comparison to the influence of these long-term factors, the effects of monetary policy on inequality are almost certainly modest and transient.
- Monetary policy, if properly managed, promotes greater economic stability and prosperity for the economy as a whole, by mitigating the effects of recessions on the labour market and keeping inflation low and stable.
- Even if it were true that the aggregate economic gains from effective monetary policies are unequally distributed, that would not be a reason to forego such policies.
- Rather, the right response is to rely on other types of policies to address distributional concerns directly such as fiscal policy taxes and government spending programmes and policies aimed at improving workers' skills.
- Policies designed to affect the distribution of wealth and income are appropriate, for the province of elected officials, not the Fed.

8. The Way Forward

- More research is needed to untangle the issue and the role of monetary policy and the job of central bankers.
- The uncertain distributional impact of monetary policy should not prevent the Fed from pursuing its mandate to achieve maximum employment and price stability, thereby providing broad benefits to the economy.
- Other types of policies are better suited to address legitimate concerns about inequality.

SALES TAX

1. Context

Actor Anushka Sharma had moved the Bombay High Court challenging the Mazgaon sales tax deputy commissioner's orders raising dues for 2012-13 and 2013-14 under the **Maharashtra Value Added Tax (MVAT) Act**.

2. Key Points

- Sales tax is always a percentage of a product's value which is charged at the point of exchange or buy and is indirect.
- The different kinds of sales tax are retail, manufacturers, wholesale, use and value-added tax (VAT).
- Sales Tax has been replaced by the **Goods and Services Tax (GST)** starting 1 July 2017.

3. About Sales Tax

- Sales tax is a form of tax paid to a governing body for the sale of goods and services.
- Sales tax is an indirect tax and is generally charged at the point of buy or exchange of certain taxable goods, charged as a percentage of the value of the product.
- The sales tax depends on the government in power and the individual policies enforced by it, generally being simple to calculate and collect.
- In simple terms, the sales tax is an extra amount of money paid while purchasing goods or services.

3.1. Types of Sales Tax

The concept of sales tax depends on the governing principles followed by governments, but there are some universal sales taxes applicable in most countries.

1. **Retail Sales Tax** This is a tax charged on the sale of retail goods and is directly paid by the final consumer.
2. **Manufacturers' Sales Tax** This tax is levied on the manufacturers of certain goods.
3. **Wholesale Sales Tax** This tax is levied on individuals who deal with the wholesale distribution/sale of manufactured goods.
4. **Use Tax** This is a tax levied on the consumer for goods which are purchased without sales tax (generally from vendors who are not under the tax jurisdiction).
5. **Value Added Tax (VAT)** is an additional tax levied on all sales by certain governments.

4. Sales Tax in India

- A major reason for the growth and development of the country can be attributed to the taxes collected by the Government of India.
- India follows the system of a central union government at the Centre and state governments in each state.
- Each government chooses a taxation policy suited to its requirements.

4.1. Central Sale Tax Act, 1956

- This act governs the taxation laws in the country, extending to the entire country and contains the rules and regulations related to sales tax.
- This act allows the central government to collect sales tax on various products.
- The central sales tax is payable in the state where the particular goods are sold.

4.1.2. Objectives of the Central Sales Tax Act

The Central Sales Tax Act was formulated to make tax collection simpler and streamlined.

1. Provide provision for levying, collection and distribution of taxes collected from the sale of goods through interstate trade.
2. Frame principles to determine when the sale and purchase of goods occurs.
3. Classify certain goods as being of special importance for trade and commerce.
4. Be the competent authority to settle interstate trade disputes.

4.1.3. Sale Price

- Sale price refers to the amount payable to the dealer/trader instead of the goods sold.
- It includes the cost of packing, insurance charges (if any), incentives to attract buyers and the sales tax paid by the dealer.
- It does not include cash discounts, installation costs, delivery costs, or goods the buyer exchanges or returns.

5. Inter-State Sales

Interstate sales refer to sales which lead to the movement or transfer of goods from one state to another, achieved by transferring the title documents while the goods are being moved.

Example 1: If an individual in Karnataka sells goods to a person in Maharashtra.

Example 2: If Anil from Telangana delivers goods to Harish in Gujarat, who in turn sells them to Krishna in Bihar by transferring the documents of title during the transfer of goods from Telangana to Bihar.

6. State Government Taxes

- Individual State Governments have the power to levy a sales tax to meet their financial requirements.
- The Sales tax in different states varies for different products, with Value Added Taxes forming a big chunk of state income.
- It is for this reason that certain goods are cheaper in a particular state compared to another state.

- States categorize individuals associated with the sale of goods into manufacturers, sellers and dealers, with each one needing certificates to work under the ambit of the law.

7. Sales Tax Exemptions

- States offer tax emptions in certain cases, which can be humanitarian or to avoid double taxation.
- Sellers with genuine state resale certificates are exempted from tax when they resale products.
- Products sold to charities or schools are provided tax exemptions.
- There is a list of essential and local commodities which are exempted from sales tax.

8. Calculation of Sales Tax

Sales Tax might seem like a complicated term to many people, and many of us think that calculating is extremely hard, if not impossible.

It is however far from the truth, as calculating sales tax is no Herculean task if one gets the basics right.

Total Sales Tax = Cost of item X sales tax rate

For Example: If Mr Kumar purchases a box of chocolates which cost Rs. 100 and have a sales tax component of 10 per cent then the total sales tax paid by him becomes $(100 \times 0.10) = 10$. Thus, he pays a sales tax of Rs 10 on the product.

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Points need to remember while calculating sales tax

1. Sales tax might vary from state to state and it pays to be informed of the rate in your particular state and city.
2. Sales tax is calculated as a percentage.
3. Add the prices for multiple items before calculating the sales tax.

9. Violation of Sales Tax Rules

Taxes can sometimes be complicated and an individual might not necessarily realise when he/she violates any provisions of the laws.

1. Providing false and misleading information in the forms.
2. Failing to obtain registration according to the CST Act.
3. Not following the security provisions mentioned in the CST Act.
4. Misappropriation of goods purchased at discounted rates.
5. Falsely impersonating a dealer or projection oneself as a dealer.
6. Unregistered dealers collecting sales tax from consumers is a violation.
7. Providing incorrect statements about purchased goods.

10. Central Board of Direct Taxes

- The Central Board of Direct Taxes is an apex body which is in charge of the administration of taxes in the country.
- It is a statutory authority and functions under the purview of the Central Board Revenue Act of 1963.
- It is a division of the Ministry of Finance, working under the ambit of the Department of Revenue.

10.1. Composition

The Central Board of Direct Taxes is composed of the following members.

- Chairman
- Member (Income Tax)
- Member (Legislation and Computerisation)
- Member (Revenue)
- Member (Personnel and Vigilance)
- Member (Investigation)
- Member (Audit and Judicial)

10.2. Functions

- The Central Board of Direct Taxes looks after all issues and matters relating to the country's levy and collection of direct taxes.

- It provides necessary inputs to frame policies for direct taxes
- It is in charge of the administration of direct tax laws in collaboration with the Income Tax Department
- Processes and investigates complaints related to tax evasion.

General Studies III: Science & Technology

6G VISION

1. Context

On March 22 2023, Prime Minister Narendra Modi unveiled the Bharat 6G Vision Document, a starting point for policymakers and the industry to gear up for the next generation of telecommunication. This is happening even as over 45,000 villages lack 4G connectivity, and 5G networks are still being built out

2. 6G Vision Document

- The government has indicated that it wants to accelerate India's wireless data consumption and assume leadership in setting the standards for 6G in the coming years
- This may involve everything from encouraging local manufacturing of telecom gear to supporting Indian companies and engineers in international discussions around standardisation
- Another key motivation is the delay in previous generations of telecommunication technology rolling out in India 5G started rolling out in India years after countries like South Korea and the U.S. had already blanketed their major urban areas with high-speed wireless connectivity
- Frequencies generally increase in newer generations of networks, but the lower the frequency, the longer a cell signal can travel
- With increasing data usage, lower frequencies in 4G networks may not physically be able to keep up with the demand for traffic
- Right now, the spectrum is congested, particularly in the low and mid-bands where the propagation characteristics are favourable
- More data can travel in higher frequencies, which is the basis for 5G architectures where base stations with low coverage took the place of a single larger cell tower

- Beyond encouraging greater participation in standardisation discussions, the vision document says the government will financially support “research pathways” where breakthroughs are most likely to advance connectivity goals, leveraging talent in academia and companies
- Some indicative goals are to guarantee every citizen a minimum bandwidth of 100Mbps; ensure every gram panchayat has half a terabit per second of connectivity and blanket the country with over 50 million internet hotspots, with thirteen per square kilometre

3. How 6G is different from 5G

- For consumers, websites will load faster, videos will look better, and files will download faster, as has been the case with every new generation of technology
- But we may be hitting the ceiling on how noticeable these improvements can get
- Latency, which is the time taken for a data packet to move from one place to another (**as opposed to speed, which is the number of such packets that can travel on a connection each second**)
- is not far off from the speed of light itself on existing networks
- Businesses and governments are still on the verge of how best to leverage 5G to reap the benefits of high-precision low-latency applications with these new connections
- According to the vision document, satellite constellations will join telecom towers and base stations, integrating networks and extending them to rural areas
- Some of the innovations that the government envisions as 6G-powered connectivity boosters are solutions that already exist in other forms
- Satellite internet in remote areas is a solution that the government can instantly approve by granting firms like Elon Musk’s SpaceX and Bharti Airtel-backed OneWeb the administrative clearance to begin offering their services
- Like DTH satellite dishes, setup is minimal as the satellites are already in the sky. However, administrative clearances lag behind
- At least two parts of India have already relied on satellite internet for decades. The Andaman & Nicobar Islands relied on a 1Gbps link to connect

to the outside world, which is comparable to a single expensive home connection in many Indian cities today

- The situation improved vastly after the islands were connected to Chennai by an undersea cable in 2020
- While satellite internet speeds have improved, thanks to innovations like constellations, connectivity goals have as much to do with satellites hundreds of kilometres overhead as they do with the cables beneath the ground and on the seabed

4. Other Nations on 6G

- As early as July 2021, South Korea planned 220 billion KRW (almost Rs 1,400 crore) in investments into “super performance, hyperspace, and super precision standards,” according to the country’s Ministry of Science and Information Technology
- Countries have already started working together, with Japan and Germany planning a workshop in April to work on everything from “fundamental technologies to demonstrations”
- The Indian 6G Vision paper cites Europe’s equivalent of the document, saying that “The overarching Vision is to ensure leadership in strategic areas and establish secure and trusted access to key technologies making Europe a sovereign, independent, and reliable source for 6G public and private network solutions and services.”

OPEN SOURCE

1. Context

Elon Musk has partly delivered on his promise of making Twitter's algorithm open source.

On April 1, 2023, the microblogging site's recommendation code was made public. Developers can now modify and make improvements to the code. Musk's long-awaited decision has brought him both boos and cheers from different corners of the developer community.

2. About Twitter's algorithm

- At the heart of Twitter's business model is the recommendation algorithm. It is a set of rules that enables the platform to deliver content on users' interests and preferences.
- It is with the help of this system that advertisers promote their brands.
- Content flows into a user's timeline through two channels.
 1. One pipeline channels content posted by people that the user follows
 2. The other is filled with posts flowing from accounts that could potentially interest the user.
- The latter timeline, called "**For You**", acts as a predictive tool to suggest feeds that a user may be interested in.
- It helps the microblogging site find answers to questions like what is the probability a user will engage with another user in the future, what communities on Twitter might a user be interested in and what tweets are trending within them. Answers to such questions help the platform recommend relevant content.

3. Working on a new Algorithm

- Twitter's recommendation algorithm runs on a three-step process.
 1. First, it fetches tweets from multiple recommendation sources. The platform calls this process candidate sourcing.
 2. After sourcing these tweets, a machine-learning model ranks them.
 3. After ranking, tweets are filtered to remove those that a user may have blocked or has already seen.
- At the sourcing stage, the algorithm mixes tweets that eventually flow into a user's "**For You**" timeline.
- To mix, it picks candidates from people a user follows and from those they do not.
- It calls these two sources "**in-network**" and "**out-network**" and together they make up 50/50 of the mix.
- Twitter says that for each request it attempts to extract the top 1, 500 tweets from a pool of hundreds of millions.

- The network part is quite easy to build as information is picked in real time from people a user follows.
- But out-network sourcing is trickier as the platform must pick content from candidates the user does not follow.
- To do this, Twitter uses what it calls social graphs and embedded spaces.
- The former creates a stream of candidates based on what content followers of a user engage with.
- And the latter matches the profile of a user with a cluster that exhibits similar interests and preferences as the user.
- Once this is done, using a 48M parameter neural network that is continuously trained on tweet engagement, the platform starts ranking feeds.

4. The reaction from the public

- After Twitter open-sourced its recommendation algorithm, many people flocked to **GitHub** to view the code.
- Some see this reveal as "a step in the right direction for the future of humanity".
- Others note that the code does not reveal much about how it is used by the platform.
- They also highlight that important bits of information have been left out.
- For instance, the absence of information on the data it uses to build these pipelines prevents one from having a complete picture of the platform's recommendation system.
- Open-sourcing any algorithm requires its training set to be open-sourced as well and that is impossible for Twitter to do.
- Every effort is open-sourcing the algorithm without the data is completely dishonest.

5. Reasons for Twitter open source code

- Mr Mask is gradually building Twitter as a place for privileged users who can pay for verification tick marks and get additional features, including a higher ranking in the feeds.
- Additionally, he is making these changes at a time when he has fired most of the company's technical staff.
- Social media platforms need experienced developers to keep building new features and deploying them successfully.

- So, perhaps, Musk thinks opening the source code to external developers could potentially solve the human resource bottleneck.
- But it will be a tough road as Mr Musk has damaged Twitter's reputation in the open-source community.
- Opensource communities are built on relationships and trust and now Twitter has neither with these groups.
- They have lost any ability to participate meaningfully in those communities.

PRICE ON CARBON EMISSION

1. Context

In the absence of a price for the use of natural resources such as air and forests, environmental destruction has been part of every country's recipe for boosting GDP growth. But the consequence of this approach has been the relentless emission of carbon, causing runaway climate change. It is time, starting with the biggest economies of the G20, to agree on valuing nature, including by pricing carbon effluents. As president of the G20 this year, India can take the lead in carbon pricing, which will open unexpected avenues of decarbonization.

2. What is Carbon Pricing?

- Carbon pricing is an instrument that captures the external costs of greenhouse gas (GHG) emissions- the costs of emissions that the public pays for, such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise and ties them to their sources through a price, usually in the form of a price on the carbon dioxide (CO₂) emitted.
- A price on carbon helps shift the burden for the damage from GHG emissions back to those who are responsible for it and who can avoid it. Instead of dictating who should reduce emissions where and how, a carbon price provides an economic signal to emitters, and allows them to decide to either transform their activities and lower their emissions, or continue emitting and paying for their emissions.

3. Main types of carbon Pricing

An emissions trading system (ETS) is a system where emitters can trade emission units to meet their emission targets. To comply with their emission targets at the least cost, regulated entities can either implement internal abatement measures or acquire emission units in the carbon market, depending on the relative costs of these options. An ETS establishes a market price for GHG emissions by creating supply and demand for emissions units. The two main types of ETSs are cap-and-trade and baseline-and-credit:

- Cap-and-trade systems, which apply a cap or absolute limit on the emissions within the ETS, and emissions allowances are distributed, usually for free or through auctions, for the number of emissions equivalent to the cap.
- Baseline-and-credit systems, where baseline emissions levels are defined for individual regulated entities, and credits are issued to entities that have reduced their emissions below this level. These credits can be sold to other entities exceeding their baseline emission levels.
- A carbon tax directly sets a price on carbon by defining an explicit tax rate on GHG emissions or more commonly on the carbon content of fossil fuels, i.e. a price per tCO₂e. It is different from an ETS in that the emission reduction outcome of a carbon tax is not pre-defined but the carbon price is.
- A crediting mechanism designates the GHG emission reductions from the project- or program-based activities, which can be sold either domestically or in other countries. Crediting Mechanisms issue carbon credits according to an accounting protocol and have their own registry. These credits can be used to meet compliance under an international agreement, domestic policies, or corporate citizenship objectives related to GHG mitigation.
- RBCF is a funding approach where payments are made after pre-defined outputs or outcomes related to managing climate change, such as emission reductions, are delivered and verified. Many RBCF programs aim to purchase verified reductions in GHG emissions while at the same time reducing poverty, improving access to clean energy, and offering health and community benefits.

4. Ways of carbon pricing

- Three ways of pricing carbon are the establishment of a carbon tax domestically, as in Korea and Singapore; the use of an emissions trading

system (ETS), as in the European Union (EU) and China; and the application of an import tariff on the carbon content, as the EU is proposing.

- Some 46 countries price carbon, although covering only 30% of global greenhouse gas (GHG) emissions, and at an average price of only \$6 a ton of carbon, a fraction of the estimated harm from the pollution.
- The International Monetary Fund has proposed price floors of \$75, \$50, and \$25 a ton of carbon for the United States, China, and India, respectively.
- It believes this could help achieve a 23% reduction in global emissions by 2030.

5. Impact on India

- Among the three ways of pricing, India could find a carbon tax appealing as it can directly discourage fossil fuels while raising revenues which can be invested in cleaner sources of energy or used to protect vulnerable consumers.
- It could replace the more inefficient scheme of petroleum taxes which are not directly aimed at emissions.
- By the way, Saudi Arabia and Russia are at the low end of gasoline prices (including taxes and subsidies), China and India in the midrange, and Germany and France at the high end.
- In most countries, including India, fiscal policy has set in place the basic structures needed to implement a carbon tax.
- For example, they can be woven into roadfuel taxes, which are established in most places, and extended to industry and agriculture.
- India could start with the IMF figure of \$25 a ton.
- The main obstacle is the argument by industrial firms about losing their competitive advantage to exporters from countries with a lower carbon price.
- It would stand to reason, therefore, for all high, middle, and low income countries to set the same rate within each bracket.
- It might also make sense to allow companies to use highquality international carbon credits to offset up to a certain percentage of their taxable emissions.
- The EU excludes transport, where higher costs would have been passed on to consumers directly, Singapore provides vouchers for consumers hit by utility price rises, and California uses proceeds from the sales of carbon permits partly to subsidize purchases of electric cars.

- Some make a case for exempting “emission intensive trade exposed” enterprises from the carbon tax, but outputbased rebates would be superior ways of doing the same.

General Studies III: Science & Technology

EINSTEIN PROBLEM

1. Context

Mathematicians have discovered a single shape that can be used to cover a surface completely without ever creating a repeating pattern

Mathematicians have long wondered if there existed an “einstein tile” – a shape that could be singularly used to create a non-repeating (aperiodic) pattern on an infinitely large plane

Here, “einstein” is a play on German *ein stein* or “one stone” not to be confused with Albert Einstein, the famous German physicist.

2. Aperiodic tiling

- A set of tile-types (or prototiles) is considered to be aperiodic if copies of these tiles can only form patterns without repetition
- In 1961, mathematician Hao Wang conjectured that aperiodic tilings were impossible
- But his student, Robert Berger, disputed this, finding a set 104 tiles, which when arranged together will never form a repeating pattern
- In the 1970s, Nobel prize-winning physicist Roger Penrose found a set of only two tiles that could be arranged together in a non-repeating pattern ad infinitum
- This is now known as Penrose tiling and has been used in artwork across the world

3. Einstein Problem

- Since Penrose’s discovery, mathematicians have been looking for the “holy grail” of aperiodic tiling a single shape or monotile which can fill a space up to infinity without ever repeating the pattern it creates

- While shapes that can be perfectly fitted on a plane are commonly known just think of rectangular bathroom tiles or hexagonal tiles which pave footpaths finding a single shape which can be both perfectly fitting *and* never repeat the pattern had till now only been theorised about
- Mathematicians call this the einstein problem in geometry
- This problem has stumped mathematicians for decades and many felt that there was simply no answer to this problem

4. The Discovery

- However, the latest discovery, a 13-sided shape which has been named “the hat” by its proponents, has presented a deceptively simple solution
- The hat comprises eight copies of a $60^\circ-90^\circ-120^\circ-90^\circ$ kite, glued edge-to-edge, and can be generalised to an infinite family of tiles with the same aperiodic property
- The shape also retains its aperiodic qualities when varying the lengths of the sides, meaning that the solution is actually a continuum of similar shapes
- The shape was first discovered by David Smith, an amateur mathematician from England
- Smith then worked closely with two computer scientists and another mathematician to develop two proofs showing that “the hat” is indeed an aperiodic monotile

4. Applications and Implications

While such a discovery might seem to be little more than an interesting curiosity for mathematicians, there are potentially many applications for this discovery First, aperiodic tiling will help physicists and chemists understand the structure and behaviour of quasicrystals, structures in which the atoms are ordered but do not have a repeating pattern

Second, the newly discovered tile might be a springboard for innovative art

RARE DISEASES

1. Context

The central government has recently exempted all foods and drugs for rare diseases imported by people for personal use from customs duty. With most therapy for rare diseases priced very high, this will make a significant difference to families of people living with the conditions. Along with medicines for rare diseases, the government also removed customs on the cancer immunotherapy medicine Keytruda.

2. What are Rare Diseases?

- Rare diseases as the name suggests are conditions that affect very few people.
- The World Health Organisation defines it as any debilitating lifelong disease or disorder with a prevalence of ten or fewer per 10,000 population.
- other countries follow standards ranging between 1 and 10 cases per 10,000 to define a condition as a rare disease.
- There are about 7,000 to 8,000 conditions globally that have been defined as rare diseases.
- The landscape of rare diseases keeps changing, with newer conditions being identified and reported constantly.
- With limited experience with these diseases, they are extremely difficult to diagnose and more difficult to test for.
- A report quoted by the country's National Rare Disease Policy 2021 says that in the United States, a person with rare disease gets diagnosed on average after 7.6 years and in the United Kingdom after 5.6 years.
- The patients have to visit as many as eight physicians, including four specialists, to get a diagnosis.
- Two to three misdiagnoses are also typical before getting the final diagnosis, as per the study.
- Even after one gets a diagnosis, most rare diseases do not have a specific treatment and, the ones that do can be prohibitively expensive.

3. What are the drugs that have been exempted from customs duty?

Medicines and foods needed for the management of 51 rare diseases have been exempt from customs duty, with the government notification stating, drugs, medicines, or food for special medical purposes are used for the treatment of rare diseases specified.

The specified conditions include

- Lysosomal storage disorder (a group of metabolic disorders that lead to a buildup of toxic materials in the cells).
- Maple syrup urine disease (a hereditary condition where the body cannot process the building blocks of proteins resulting in the buildup of harmful substances in blood and urine).
- Severe food protein allergy, Wilson's disease (a disorder that results in the body accumulating copper) among others.
- These medicines usually attract a basic customs duty of 10 percent, with some vaccines or medicines attracting a lower 5 percent or nil as previously notified.
- Medicines for the treatment of spinal muscular atrophy and duchenne muscular dystrophy were already exempt from customs.
- This will be a huge relief for people living with rare diseases because many of the medicines and food products are not available in India and have to be imported.
- The cost of medicines is also usually very high, going up with the increasing age and weight of the person. And, the medicines for many of the conditions have to be taken for life.

4. How can one avail of the exemption?

- To avail of the benefits, people importing it have to get a certificate from the central director general, deputy director general, or assistant director general of health services, director general of state health services, or district medical officer or civil surgeon.
- The certificate has to be provided to the deputy commissioner of customs or assistant commissioner of customs at the time of clearance. (or)
- The person will have to give the undertaking to furnish the certificate in a specified period, failing which the customs duty will have to be paid.

5. Why are drugs for rare diseases so expensive?

- Even though there have been developments in the treatment of rare diseases in recent years, almost 95 percent of the conditions do not have specific treatment.
- With a very small number of people suffering from each of the 7,000- 8,000 rare conditions, they do not make a good market for drugs.

- This is the reason most pharmaceutical companies are reluctant to spend on research for treatments of the disease.
- This is the reason the medicine for rare conditions that do exist are known as “orphan drugs” and are prohibitively priced to recoup the cost of research and development.
- As per the National Rare Disease Policy, treatment for some rare diseases can vary from Rs 10 lakh to 1 crore per year for a child weighing 10 kg.
- The treatment has to be continued lifelong, with the costs going up along with the age and weight of the person.
- At present, very few pharmaceutical companies are manufacturing drugs for rare diseases globally and there are no domestic manufacturers in India.

6. Situation in India

- Data on how many people suffer from conditions that are considered to be rare diseases globally is not available in India.
- There is no epidemiological data on the incidence, but cases reported from tertiary care hospitals do get recorded in the national portal that was set up by the Indian Council of Medical Research after the rare disease policy came out.
- As per data submitted to the parliament in December 2021, at least 4,001 rare disease cases were recorded on the portal.

The most commonly reported rare disease includes

- Primary immunodeficiency disorder (a genetic condition that impairs the immune system)
- Lysosomal storage disorders (a group of metabolic disorders that lead to a buildup of toxic materials in the cells)
- Small molecule inborn errors of metabolism (a large group of genetic conditions, where the genetic code for metabolic enzymes are defective)
- Cystic fibrosis (a condition that severely damages the lung leading to the need for a transplant)
- Osteogenesis imperfect (a condition where bones fracture easily) and
- Certain forms of muscular dystrophies and spinal muscular atrophy.

7. Government Provision for financial support

- Other than relief from customs duty, the government also has provision for providing financial support up to R50 lakh for the treatment of any kind of rare disease at the Centres of Excellence.
- Earlier, financial aid of up to R20 lakh was provided to those with Group 1 rare diseases where one-time curative treatments exist.

MICROPLASTICS IN OCEANS

1. Context

An estimated 170 trillion plastic particles weighing about 2 million metric tons are currently afloat in the oceans across the world, according to a new study, which added that if no urgent action is taken then this number could nearly triple by 2040

2. About Microplastics

- Microplastics are tiny plastic particles that result from commercial product development and the breakdown of larger plastics.
- They are fragments of any type of plastic less than 5mm(0.20 in) in length.
- Plastic pollution is big evil and can help viruses alive and infectious in fresh water for days
- Microplastics are particularly harmful to the oceans as they don't readily break down into harmless molecules and adversely affect the health of **marine organisms**, which mistake plastic for food. Moreover, these particles can trigger loss of biodiversity and threaten ecosystem balance

3. Key Findings

- Researchers examined surface-level plastic pollution data from nearly 12,000 ocean stations in six major marine regions, from 1979 to 2019
- Finally, by using computer modelling, the researchers were able to come up with a global time series to estimate not only how much microplastic is currently in the oceans but also how their concentration has changed over the years

- They found that from 1990 to 2005, the number of plastic particles more or less fluctuated
- One of the reasons for this could be due to the effective implementation of important policy measures at the time
- In the 1980s and 90s, some international policies, like MARPOL Annex 5, enforced laws against dumping trash at sea. They were powerful laws that were enforceable and were preventative
- However, things went downhill soon after as the world began producing much more plastic than ever before
- Therefore, as the study pointed out, the concentration of plastic particles including microplastics in the ocean has skyrocketed in the oceans since the mid-2000s, and it continues to increase
- Researchers further mentioned that if the world fails to take any drastic action about the issue, there will be a 2.6-fold increase in plastic flowing into aquatic environments by 2040

4. Impacts of Microplastics on Ocean and Marine life

- Several recent studies have detected microplastics in marine organisms, from phytoplankton to whales and dolphins, which might prove hazardous for them
- The ingestion of such particles can cause “mechanical problems, such as lacerations and blockages to internal systems.”
- Ingested plastics can cause chemical problems by leaching absorb chemicals into organisms
- We know that microplastics absorb many hydrophobic compounds, like DDT, PCBs and other industrial chemicals, and evidence shows they can be released when ingested
- Microplastics can also disrupt the carbon cycle of the oceans
- Normally, phytoplankton absorbs carbon and are eaten by zooplankton, who excrete the carbon in the form of faecal pellets that sink to the sea floor
- Once these carbon-containing pellets reach there, “the carbon can be remineralized into rocks preventing it from escaping back into the atmosphere,”
- If zooplanktons consume microplastics, their faecal pellets sink at a much slower rate, which means they are more likely to break apart or be eaten by other animals

- Making it less likely that the carbon will reach the seafloor and become permanently sequestered

5. How to limit plastic pollution in oceans

- Researchers of the latest study suggested that there is an urgent need to implement a global resolution to limit the production of single-use, throwaway plastic
- We need cities to be responsible for managing their waste so it does not leave their territory
- We need to reduce the amount of chemical additives in new plastic products
- If we talk about recycling, there have to be requirements that recycled plastic be used in new products
- The industries that make plastic like to talk about how technically we can recycle all of it. But they don't like to commit to buying recycled plastic, therefore recycling fails

ISRO's REUSABLE LAUNCH VEHICLE MISSION RLV LEX

1. Context

Indian Space Research Organisation and its partners **successfully demonstrated a precise landing experiment** for a Reusable Launch Vehicle at the Aeronautical Test Range (ATR), Chitradurga, Karnataka Indian Space Research Organisation and its partners **successfully demonstrated a precise landing experiment** for a Reusable Launch Vehicle at the Aeronautical Test Range (ATR), Chitradurga, Karnataka

The Reusable Launch Vehicle Autonomous Landing Mission (RLV LEX) test was the second of five tests that are a part of ISRO's efforts to develop RLVs, or space planes/shuttles, which can travel to low earth orbits to deliver payloads and return to earth for use again

2. What is RLV TD Project

- RLV-TD are part of efforts at “developing essential technologies for a fully reusable launch vehicle to enable low-cost access to space”
- The RLV-TD will be used to develop technologies like hypersonic flight (HEX), autonomous landing (LEX), return flight experiment (REX), powered cruise flight, and Scramjet Propulsion Experiment (SPEX)
- In the future, this vehicle will be scaled up to become the first stage of India’s reusable two-stage orbital (TSTO) launch vehicle
- ISRO’s RLV-TD looks like an aircraft. It consists of a fuselage, a nose cap, double delta wings, and twin vertical tails
- The 2016 experiment involved sending a winged spacecraft on a rocket powered by a conventional solid booster (HS9) engine used by ISRO into space
- The spacecraft traveled at a speed of Mach 5 (five times the speed of sound) when re-entering the earth’s orbit and traveled a distance of 450 km before splashdown in the Bay of Bengal
- The selection of materials like special alloys, composites, and insulation materials for developing an RLV-TD and the crafting of its parts is very complex and demands highly skilled manpower
- Many high technology machinery and test equipment were utilized for building this vehicle

3. History of RLV Project

- One of the first trials of an RLV was announced by ISRO as far back as 2010, but was put off due to technical reasons, Another was hinted at in 2015 but was again grounded over technical issues
- ISRO’s RLV development program took a backseat at the agency as much of the attention in recent years was focussed on the development of the heavy lift Geosynchronous Satellite Launch Vehicle (GSLV) and its high-end version, the GSLV-Mk III, to enable ISRO to break into the lucrative market for launching large communication satellites weighing over 2,000 kg

3.1. First Experiment

- When the first experiment was done in 2016, ISRO officials described it as a “baby step” in the development of an RLV
- A rocket carrying the 1.75 tonnes RLV-TD was launched into space for 91.1 seconds and reached a height of about 56 km, when the RLV-TD separated from the rocket and climbed to a height of about 65 km
- From this height, the RLV-TD began its return to earth and entered the atmosphere at a speed of around Mach 5 and was navigated by the vehicle’s own systems to a predetermined landing spot in the Bay of Bengal, around 450 KM from the launch site at Sriharikota
- The RLV was tracked during the flight from ground stations at Sriharikota and a terminal on a ship
- While the re-entry into the earth’s atmosphere happens at a velocity of 8 km/sec the RLV TD HEX1 was tested at a much lower velocity of 1.7 km/sec to 2 km/sec. The total flight lasted 770 seconds
- In the first flight, “critical technologies such as autonomous navigation, guidance and control, reusable thermal protection system, and re-entry mission management have been successfully validated”

3.2. Second Experiment

- The RLV LEX test involved a Chinook Helicopter of the Indian Air Force lifting the RLV LEX to a height of 4.5 km and releasing the RLV, based on a command from Mission Management Computer
- After midair release, the RLV carried out an autonomous landing “under the exact conditions of a Space Re-entry vehicle’s landing high speed, unmanned, precise landing from the same return path as if the vehicle arrived from space,”
- Landing parameters such as ground relative velocity, the sink rate of landing gears, and precise body rates, as might be experienced by an orbital re-entry space vehicle in its return path, were achieved

3.3. Difference between them

- According to ISRO, the first test with RLV-TD (HEX1) involved the vehicle landing on a hypothetical runway over the Bay of Bengal while the LEX experiment involved a precise landing on a runway

- The LEX mission achieved the final approach phase that coincided with the re-entry return flight path exhibiting an autonomous, high speed (350 km per hour) landing
- With LEX, the dream of an Indian Reusable Launch Vehicle arrives one step closer to reality
- Three more experiments return flight experiment (REX), powered cruise flight, and Scramjet Propulsion Experiment (SPEX) have to be conducted

4. Advantages

- With the costs acting as a major deterrent to space exploration, a reusable launch vehicle is considered a low-cost, reliable, and on-demand mode of accessing space
- Nearly 80 to 87 percent of the cost in a space launch vehicle goes into the structure of the vehicle
- The costs of propellants are minimal in comparison. By using RLVs the cost of a launch can be reduced by nearly 80 percent of the present cost
- Reusable space vehicles have been in existence for a long time with NASA space shuttles carrying out dozens of human space flight missions
- The use case for reusable space launch vehicles has revived with the private space launch services provider Space X demonstrating partially reusable launch systems with its Falcon 9 and Falcon Heavy rockets since 2017
- SpaceX is also working on a fully reusable launch vehicle system called Starship
- Several private launch service providers and government space agencies are working on developing reusable launch systems in the world alongside ISRO

General Studies III: Environment & Ecology

DEEP SEA MINING

1. Context

Currently there is no internationally agreed code for mining under the ocean. After two weeks of negotiations ending , however, the International Seabed Authority has now decided that companies can apply from July to mine the ocean floor. But campaigners and even corporations are pushing back due to fears of the massive environmental impact

2. Deep Sea and Mining

- The deep sea is a trove of biodiversity, rich in living resources used in medicines and critical in regulating the climate and providing spawning and feeding grounds for fish
- Whether copper or nickel for batteries, cobalt for electric cars or manganese for steel production: rare earth minerals and metals are fundamental to the renewable energy
- technologies driving the world's energy transition
- But while demand is rising fast, the resources are also becoming scarcer globally
- According to estimates, in just three years the world will need twice as much lithium and 70% more cobalt.
- And this is despite the slow progress of the energy transition. According to the International Energy Agency, if climate goals were properly pursued through the massive expansion of renewable energy, about five times as much lithium and four times as much cobalt would be needed by 2030
- The projected production volumes for these raw materials fall far short of demand. To close this gap, some countries and companies now want to mine the resources in the deep sea

3. Seabed and Minerals

- So-called polymetallic nodules, also known as manganese nodules, are driving the rush to mine seabeds
- These potato-sized lumps contain high proportions of nickel, copper, manganese, rare earths and other valuable metals
- The best-studied area is currently the seabed at between 3,500 and 5,500 meters [between 11,500 feet and 18,000 feet] in the Clarion-Clipperton Zone in the eastern Pacific Ocean near the US state of Hawaii
- Spanning thousands of kilometers, the area contains more nickel, manganese and cobalt than any known area on land

- The basin in the central Indian Ocean and the seabed off the Cook Islands, Kiribati atolls and French Polynesia in the South Pacific are also of interest for potential extraction
- The nodules' composition happens to be remarkably well-aligned with the needs of electric vehicle makers
- Carmakers will need a great deal more of these metals in order to make battery cathodes and electrical connectors for an electric vehicle fleet of around a billion cars and trucks by mid-century
- The Canada-based company specializes in the medium and long-term exploitation of mineral resources in the Clarion-Clipperton Zone
- Although manganese nodules are not yet being mined anywhere in the world, that could soon change as they practically lie directly on the seabed and can be easily extracted without breaking up rock layers or eroding the seabed

4. Marine Life

- Seabed mining is made easy when a huge vacuum can simply travel over the ocean floor to suck up the nodules which are then brought to the surface with a hose
- That means all organisms, bacteria and higher organisms that live in and on the sediment and on the nodules are completely sucked in
- These organisms also require manganese nodules to survive, meaning they “won't come back for millions of years
- Rapid regeneration is impossible because it can take a million years for a nodule to grow a few millimeters
- Scientists and opponents of deep-sea mining also fear that the clouds of sediment from the suction could cause enormous damage to ecosystems within a radius of several hundred kilometers
- Potential victims would include plants, creatures in the middle water depths and microorganisms whose respiratory tracts could be blocked by the sediment

5. Environmental Balance

- The Metals Company aims to mine the nodules in the Clarion-Clipperton Zone, and makes no secret of the possible damage to marine biodiversity

- However, the company has argued that deep-sea mining could be less damaging to the environment than extraction on land, pointing out that it would emit 80% less greenhouse gas emissions
- The Metals Company has also claimed that deep-sea mining would be largely automated, avoiding the exploitation of cobalt miners, including children, in Congo, where most of the world's cobalt is mined today
- Possible exploitation of deep-sea deposits is regulated by the International Seabed Authority, which was established under the UN Convention on the Law of the Sea
- It has awarded 31 exploration contracts so far worldwide, but none for commercial mining activities
- These permits allow companies to explore the resources and potential for future extraction, but also require them to collect data for environmental analysis
- The Pacific island state of Nauru has been collaborating with The Metals Company to force through a code by 2023 so applications can be decided. But other island nations have called for a moratorium on deep-sea mining
- Deep-sea mining would go beyond harming the seabed and have a wider impact on fish populations, marine mammals and the essential function of the deep-sea ecosystems in regulating the climate

COMPENSATORY AFFORESTRATION IN INDIA

1. Context

As part of its international climate change commitments, India has promised to increase its forest and tree cover to ensure that they are able to **absorb an additional amount of 2.5 billion to 3 billion tonnes of carbon dioxide equivalent by 2030**

Unlike the two other commitments India has made one related to improvement in emissions intensity and the other about the deployment of renewable energy the forestry target is a relatively difficult one to achieve

2. Background

- Forests are under stress due to the need for rapid industrial and infrastructure development, and accompanying urbanization
- In the last 10 years, more than 1,611 square km of forest land, a little more than the area of Delhi, has been cleared for infrastructure or industrial projects. Nearly a third of this 529 sq km has been cleared in the last three years itself
- A number of tree plantation, afforestation and reforestation programmes are being implemented to increase India's forest and tree cover
- These include the Green India Mission, national afforestation programme, and the tree plantation exercises along the highways and railways
- Other flagship government programmes like the national rural employment guarantee scheme (MGNREGS) and Namami Gange also have significant afforestation components

3. Compensatory Afforestation

- The showpiece effort for extending India's forest cover has been its compensatory afforestation programme that seeks to ensure that forest lands getting 'diverted' for non-forest purposes, like industrial or infrastructure development, is mandatorily accompanied by afforestation effort on at least an equal area of land
- While the plantation exercise on new lands cannot be compared with the fully grown forests getting diverted, compensatory afforestation made a legal requirement through the Compensatory Afforestation Fund Act of 2016 does ensure that newer parcels of land are earmarked for developing them as forests
- Project developers, public or private, are required to fund the entire afforestation activity on these new lands
- The law also acknowledges the fact that newly afforested land cannot be expected to immediately start delivering the range of goods and services timber, bamboo, fuelwood, carbon sequestration, soil conservation, water recharge, and seed dispersal that the diverted forests were providing
- As a result, project developers are also asked to pay for the Net Present Value (NPV) of the forests being cleared, based on a calculation decided by an expert committee

- According to the recently revised calculations, companies have to pay NPV at rates ranging between Rs 9.5 lakh and Rs 16 lakh per hectare, depending on the quality of forests getting diverted
- The compensatory afforestation law came into being only in 2016, but the concept has existed since the 1980s, as an offshoot of the Forest Conservation Act of 1980, which made it mandatory for project developers to seek ‘clearance’ of the Environment Ministry for any diversion of forest land
- The practice got institutionalised through the Supreme Court orders and observations during the hearings of the famous Godavarman case in the 1990s and 2000s
- But due to other litigation, the money collected for compensatory afforestation before 2016 had remained largely unutilised. Serious work on compensatory afforestation has begun only after the 2016 Act
- More than Rs 66,000 crore has been realised in the Central fund through different levies prescribed in that law
- A substantial part of this nearly Rs 55,000 crore has already been sent to the state governments
- State governments have to prepare an annual plan of operations for afforestation work through this money
- The APOs contain details of money that is intended to be spent during a financial year for specific works related to afforestation
- Once this plan gets approval from the Compensatory Afforestation Management and Planning Authority (CAMPA) at the Central level, the state government transfers the approved amounts to the state forest departments, which then carry out the work
- Government records show that APOs by the state governments have not made full utilisation of the funds at their disposal, and even the money approved for this APOs has not been entirely spent

4. Other fees that are levied

- All this money is meant to be spent solely on increasing, or improving the quality of, forest cover in the country, or on works that help this objective
- The money is parked in special funds created for this purpose at the Central and state levels

- The money is first deposited in the Central fund, from where it gets disbursed to states where the projects are located
- The Central fund can keep up to 10 per cent of the total money for spending towards administrative expenses. The rest has to be sent to the states according to their share
- Critics say compensatory afforestation had legitimised clearing of forests, and see it as an example of ‘greenwashing’
- The contrary view is that since the clearing of forests for one or the other purpose cannot be entirely eliminated, compensatory afforestation is a good mechanism for attempting to make up for these losses to some extent

5. Other Practices

- The land that is made available for afforestation usually cannot be used for any other purpose, and is often extremely unsuitable for growing plantations
- While there are examples of some good plantations having come up, the poor quality of land poses a difficult challenge in most instances
- Also, while the law mandates at least an equal area of land to be provided for compensatory afforestation, rarely is a contiguous stretch of land made available for this purpose
- The total area of land is often distributed over twenty or more different locations
- Even if very good plantations were grown, these can never be compared to the kind of forests that often get diverted
- Activists working on the ground complain that often the plantations are monocultures, meaning they contain only one species of plants

ARE PROBIOTICS WORTH THE HYPE?

1. Context

Whenever talking about gut health, ‘probiotics’ are likely to crop up during the conversation. As such, it would not be wrong to say that it has become a buzzword when it comes to gut health

In the last few years there has been a huge surge in **probiotics**. It seems as though everywhere you look there are probiotics: in **teas**, chocolates, gummies, cookies...

it leaves you to wonder, are they actually that beneficial or have they now become a marketing tactic

2. What are Probiotics?

Probiotics are live microorganisms promoted with claims that they provide health benefits when consumed, generally by improving or restoring the gut microbiota. Probiotics are considered generally safe to consume but may cause bacteria-host interactions and unwanted side effects in rare cases.

Probiotics are a combination of live beneficial bacteria and/or yeasts that naturally live in your body. Bacteria is usually viewed in a negative light as something that makes you sick. However, you have two kinds of bacteria constantly in and on your body: good bacteria and bad bacteria.

This community is made up of things called microbes. You have trillions of microbes on and in your body. These microbes are a combination of:

- Bacteria.
- Fungi (including yeasts).
- Viruses.
- Protozoa.

3. Benefits of Probiotics

They influence our body's **immune response**, and help our body's community of microorganisms return to a healthy condition after being disturbed.

Good bacteria keeps you healthy by supporting your immune function and controlling inflammation. Certain types of good bacteria can also:

- Help your body digest food.
- Keep bad bacteria from getting out of control and making you sick.
- Create vitamins.
- Help support the cells that line your gut to prevent bad bacteria that you may have consumed (through food or drinks) from entering your blood.
- Break down and absorb medications.

4. Limitations

- While probiotic foods can be beneficial for **digestive health**, they should not be considered a cure-all for digestive issues.

- It is advisable to consult a healthcare provider and a qualified dietician before adding probiotic-rich foods to the diet, especially in case of any underlying medical condition
- The data shows it does not help those with Crohn's disease, nor does it help those with pancreatitis
- Probiotics are live microorganisms, the 'friendly' bacteria that reside in the gut and provide numerous benefits. These bacteria help us fight infections caused by 'unfriendly' ones'
- An estimated 100 trillion microorganisms representing more than 500 different species inhabit every normal, healthy bowel
- The most common are bacteria that belong to groups called Lactobacillus and Bifidobacterium
- Other bacteria may also be used as probiotics, and so may yeasts such as Saccharomyces boulardii

UN WORLD WATER CONFERENCE

1. Context

The World Water Conference was convened by the United Nations (March 22, 2023) and was the first UN conference on freshwater in almost 50 years.

2. Background

- It was held in the context of serious environmental issues flooding, drought, the severity of climate change, and a looming food crisis.
- The conference also marked a midterm review of the Water Action Decade 2018-2028 (to advance the water agenda by energizing existing programs and projects, and inspiring water action to achieve the 2030 Agenda, in particular Sustainable Development Goal 6 (SDG 6), which envisages the sustainable management of water and sanitation for all.
- The central outcome of the conference was the international Water Action Agenda, to which governments, multilateral institutions, businesses, and

nongovernmental organizations submitted over 670 commitments to address water security issues.

- Nearly 164 governments and 75 multilateral organizations have made commitments.
- While the commitments embodied in the Water Action Agenda are voluntary and, therefore, legally nonbinding, the voluntary commitments are expected to inspire the collective political will, which is needed to address the many water challenges.

3. What is UN Water Conference?

- The UN Water Conference is an international conference that aims to better align activities by governments, companies, NGOs, and funders around a few grand challenges in the water sector.
- It serves as a platform for countries to learn from the experiences of others, transfer technology, and invest.
- The last UN Water Conference was held in 1977.
- It resulted in the first global ‘Action Plan’ recognizing that all people have the right to access safe drinking water and sanitation.
- This led to several decades of global funding and concerted effort to provide drinking water and sanitation for all.

4. Poor finances, poor water services

- The commitments made at the conference must be scrutinized to see whether they will yield universal, safe, affordable, and equitable access to water that is consistent with SDG 6.
- Meeting this target by 2030 (as envisioned by the SDG) will incur capital expenditures of \$114 billion per year.
- The World Bank estimates recurring operations and maintenance for basic water and sanitation service (WASH) costs to rise from about \$4 billion to over \$30 billion per year by 2030, which is far more than the capital costs for basic WASH services.
- The World Resources Institute (WRI) is of the view that the commitments made by the states reflected rigour, scope, and ambition but they lacked proper finance and targets that are quantifiable in nature.
- Investment in this range would require valuing water, which in turn requires robust water measurement and accounting.

- There are ‘serious limitations in our knowledge about the volume, flux, and quality of water in lakes, rivers, soils, and aquifers.
- There are huge gaps in water usage data. The metering of water has triggered resistance from India to Ireland because of concerns about equitable access and affordability of water services.

5. Funding

- Funding from regional, national, and international sources prioritizes new water infrastructure rather than water maintenance services (World Bank study).
- It results in decreased service for water customers. World Bank estimates project recurring operations and maintenance service (WASH) costs to rise from about \$4 billion to over \$30 billion per year by 2030, which is far more than the capital costs for basic WASH services. Water does not qualify to be a global public good as it is not considered to be an area of urgent funding as compared to climate change.
- The Global Environment Facility (GEF) is the only international funding mechanism that has been able to cover more than 300 watersheds and an even greater number of aquifers across the political boundaries of two or more states with its grant and concessional loan.

6. India's Commitments at the Conference

India’s commitments at the conference were:

- An investment of \$240 billion in the water sector and efforts to restore groundwater level.
- A 2021 CAG report says that groundwater extraction in India increased from 58% to 63% between 2004-17.
- This has been further exacerbated by climate change resulting in intermittent rainfall, which further undermines the recharge potential.
- The revised Groundwater Bill 2017 vests State groundwater boards with creating laws, managing water allocation, and other relevant issues.
- The State boards are understaffed, lack expertise and prioritize sociopolitical conflicts over groundwater resources.
- In international law, ‘states possess the authority to make voluntary commitments to address issues of global concern.

- These commitments are distinguished from other legal forms because they are not made pursuant to a consensus instrument to which the parties have agreed.
- They are generally independent of the commitments of other parties.
- Efforts to ‘tackle climate change and promote environmental sustainability have led states to make voluntary commitments to curb greenhouse gases and to take measures to promote sustainability, even in the absence of a legally nonbinding instrument.
- The commitments of states after the Climate Conference in Denmark (December 2009), underline this.
- But in the case of climate change, these voluntary commitments take place within the broader context of binding agreements: the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement.
- Voluntary commitments are becoming an important feature in the environmental law vista, but they raise difficult issues of accountability.
- Commitments made by the states with different formats and with different content pose challenges in terms of monitoring compliance with each commitment.
- Voluntary commitments are perhaps just a necessary step in the face of inaction.

7. Outcomes of the 2023 Conference

- The conference’s proceedings resulted in a lot of talks, fragmented discussions, and no binding commitments.
- There were 713 diverse voluntary commitments by philanthropic donors, governments, corporations, and NGOs, with 120 relevant to India.
- Commitments included a \$50-billion commitment from the Indian government to improve rural drinking water services under its Jal Jeevan Mission.

NET ZERO EMISSIONS BY 2030

1. Context

The EU is pushing for 100 cities including Paris, Madrid and Amsterdam to reach net-zero emissions by the end of the decade far earlier than their national governments plan to get there

As governments across the world have promised to stop polluting carbon emissions by 2050, scores of European cities have pledged to get there by 2030 just seven years from now

2. Background

- The European Union wants 100 cities including capitals Paris, Madrid and Amsterdam to be carbon neutral by the end of the decade
- Berlin, which is not on the list, held a referendum in March on moving its target forward to 2030
- Despite a slim majority in favour of the plans, too few people voted overall for the law to pass
- Cities aiming to meet the target by 2030 would have to make unprecedented changes to the way their citizens move, live, eat and sleep
- In sectors like transport and buildings, the technologies to do so exist. The pathway is much less clear for industry and agriculture
- Supporters and scientists have highlighted that the shift to net-zero emissions by 2030 would quickly clean up the air, make streets safer and buildings more comfortable

3. Reasons Why Cities would hit Net-Zero Emissions in 2030

- To keep global temperatures from rising by more than 1.5 degrees Celsius (2.7 degrees Fahrenheit) the target to which world leaders promised to try to limit global warming humanity must cut pollution fast
- The Intergovernmental Panel on Climate Change found that the world needs to cut carbon emissions to net-zero by the middle of the century
- Net-zero means societies have to suck out as much carbon as they pump into the atmosphere
- But technologies to remove carbon dioxide are limited and scientists are unsure how much they can absorb
- Still, that finding has led more than 100 countries to set net-zero targets for around 2050

- Pressure is also rising on rich countries who have polluted the most, particularly those in Europe and North America, to move faster
- While 2050 is a global average, nearly all countries signed the Paris Agreement on Climate Change, which accepts that countries have “common but differentiated responsibilities.”
- Experts say cities are good targets for faster action because they pump out a disproportionate share of greenhouse gases partly because they have more people and tend to be richer
- Just 10 city regions in Europe are responsible for 7.5% of the continent’s total carbon dioxide emissions, a 2022 study found. The 100 dirtiest cities are responsible for 20% of the emissions
- Doing more or doing anything is always necessary and good because it will help us achieve our climate goals
- Still, bringing a city’s emissions down to zero or even close to it is hard
- In a sector like transport, officials could force out combustion engine cars, improve public transport and make streets easier to walk
- But electrifying the energy supply may require changes that need regional or national support
- The program helps members overcome structural, institutional and cultural barriers, with the idea that lessons from one can be applied to another
- Because most cities have only just started, it is unclear how likely they are to succeed
- If a good number of cities are able to achieve the goal as specified and a larger number demonstrates they are able to move much more quickly to the outcome, even if they do not quite make it by 2030
- In some sectors, like heavy industry, technological solutions are some way off. Facilities to capture carbon and store it safely underground have not yet achieved the efficiency needed to clean up cement plants, for instance. That makes full decarbonization a challenge for more industrial cities
- Port cities like Rotterdam, in the Netherlands, and Hamburg, in Germany will also struggle to clean up without help at a national or European level

4. Way Forward

Denmark’s capital Copenhagen started to tackle its 2025 climate neutrality goal in 2012

The city expects to reduce emissions by about 82% in 2025 compared to 2010, a spokesperson for the city's climate team told DW, mainly from heating and electricity

Transport emissions were harder to clean up, the spokesperson said, and a plan to capture carbon from a waste incinerator plant will not be completed in time

Carbon capture is a highly viable and currently possibly the only option for waste incinerators to become carbon neutral.

DRAFT RESOLUTION (A/77/L.58)

1. Context

The United Nations General Assembly passed a resolution that asked the International Court of Justice at The Hague to provide an opinion on what kind of obligations countries have towards climate change reduction, based on the promises they have made to the UN Framework Convention for Climate Change (UNFCCC).

2. Background

The resolution passed by consensus had been pushed through by one of the smallest countries in the world, the Pacific Island of Vanuatu, an island that was devastated in 2015 by the effects of Cyclone Pam, believed to have been spurred by climate change, that wiped out 95% of its crops and affected two-thirds of its population.



Image Source: The Hindu

3. What does the resolution seek?

- The draft resolution (A/77/L.58) invoked article 96 of the UN Charter to ask the ICJ to deliberate on two questions.
- What are the obligations of states under international law to ensure the protection of the climate system for present and future generations?
- What are the legal consequences under these obligations for states where they, by their acts and omissions, have caused significant harm to the climate system, particularly for Small Island Developing States (SIDS) and for people who are harmed?
- The resolution refers to several international protocols including the Paris Agreement (2015), the United Nations Convention on the Law of the Sea, and even the Universal Declaration of Human Rights.
- The entire process is expected to take about 18 months for the ICJ to deliberate and deliver its opinion.

4. Role of ICJ and its Jurisdiction

Contentious

Contentious jurisdiction refers to the ICJ's authority to resolve legal disputes between consenting states. Decisions made under contentious jurisdiction are binding.

Advisory

- Advisory jurisdiction allows the UN General Assembly (UNGA), the Security Council (SC), and other specialized bodies of the organization to request the ICJ's opinion on a legal question.
- The ICJ's advisory opinions are non-binding. However, they hold significant normative weight and serve to clarify international law on relevant issues.
- The ICJ's advisory opinion on climate change can be useful in climate-related litigation at the national level

5. What is India's Opinion?

- India has thus far been cautiously silent about the move, although it is generally supportive of the need for climate justice, and holding the developed world accountable for global warming.
- It has referred the resolution to legal authorities in the country who will look into the implications and international ramifications of the ICJ opinion.
- India did not co-sponsor the draft resolution.
- India did not join the overwhelming majority of countries that co-sponsored the draft resolution.
- In the neighborhood, the list of cosponsors included Bangladesh, Maldives, Nepal, Sri Lanka, and a number of island countries in the Indian Ocean Region (IOR).
- India is also watching how global powers like the U.S. and China respond to the resolution, as without their support, it will be hard to implement.
- During the discussion on the resolution, the U.S. representative voiced concerns about whether launching a judicial process was the best way to reach shared goals.
- Indian officials have also said that the ICJ process can only speak about climate change issues and problems broadly and that it cannot name or profile any one country in the process.
- Pointing to the Paris agreement as a landmark shift towards a “bottomup” approach, where states themselves determine their ability to mitigate climate change, they also said any attempt to impose an opinion in a “topdown” manner would be resisted.
- Many other countries are likely to voice their opinion as the process gathers momentum in the months ahead.

6. What sparked the idea for the resolution?

- The original idea for taking the case for climate obligations to the highest legal court came from a group of 27 Pacific Island law students, who set up a campaign and brought it to the Pacific Islands Forum.
- Since 2019, the Vanuatu government, with the support of an 18member “core group” of countries, has been promoting the idea of an Advisory Opinion from the ICJ.
- It prepared the draft resolution that was eventually cosponsored by 132 countries at the UNGA and went through without a vote.

- While the U.S. was among a few countries that expressed some reservations, no country opposed the resolution.

7. Is the Advisory Opinion of ICJ binding?

- The ICJ is being asked for an advisory opinion, which by definition would not be legally binding as an ICJ judgment.
- However, its clarification of international environmental laws would make the process more streamlined, particularly as the COP (Conference of the Parties) process looks at various issues like climate finance, climate justice, and the most recently agreed “loss and damages” fund at the COP27 in Sharm ElSheikh last year.
- The ICJ carries legal weight and moral authority”, said the sponsors of the resolution, and gave as examples advisory opinions given in the past on the Palestinian issue (Construction of the Wall) and nuclear threats that have been respected.

Mains Corner

- 1. Discuss the role played by State Legislative Councils. How are they different from the Rajya Sabha? Also, examine their usefulness for Indian states. (250 Words)**
- 2. Who are the Idu Mishmis, what is their relationship with the forest and why are they resisting the proposed tiger reserve? (250 Words)**
- 3. What is RBI's role in decreasing Inequality? Discuss the pros and cons of the increasing Interest rates in the Indian Economy. (250 Words)**
- 4. What are Rare Diseases? Discuss the India scenario of Rare Diseases as per the National Disease policy 2021 (250 Words)**
- 5. Critically examine the performance of the GST regime since its inception and suggest possible reforms. (250 Words)**

Prelims Corner

1. If a particular plant species is placed under Schedule VI of The Wildlife Protection Act, 1972, what is the implication?

- A. A licence is required to cultivate that plant
- B. Such a plant cannot be cultivated under any circumstances
- C. It is a Genetically Modified crop plant
- D. Such a plant is invasive and harmful to the ecosystem

Answer (A)

If a particular plant species is placed under Schedule VI of The Wildlife Protection Act, 1972. A license is required to cultivate that plant. Such a plant cannot be cultivated under any circumstances.

2. Which one of the following issues the ‘Global Economic Prospects’ report periodically?

- A. The Asian Development Bank
- B. The European Bank for Reconstruction and Development
- C. The US Federal Reserve Bank
- D. The World Bank

Answer (D)

World Bank releases its Global Economic Prospects report

3. Consider the following diseases

- (1) Diphtheria
- (2) Chickenpox
- (3) Smallpox

Which of the above diseases has/have been eradicated in India?

- A. 1 and 2 only

- B. 3 only
- C. 1, 2 and 3
- D. None

Answer (C)

Smallpox was a serious infectious disease caused by the Variola virus. Smallpox was eradicated, and no cases of naturally occurring smallpox have happened since 1977

4. Consider the following statements give below:

1. India and Republic of Korea will participate in the Exercise Desert Flag in 2023.
2. This is the first occasion when the LCA Tejas shall participate in an international flying exercise outside India.

Which of the above statements are incorrect?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer (D)

Both Statements are Correct

5. With reference to the religious history of India, consider the following statements:

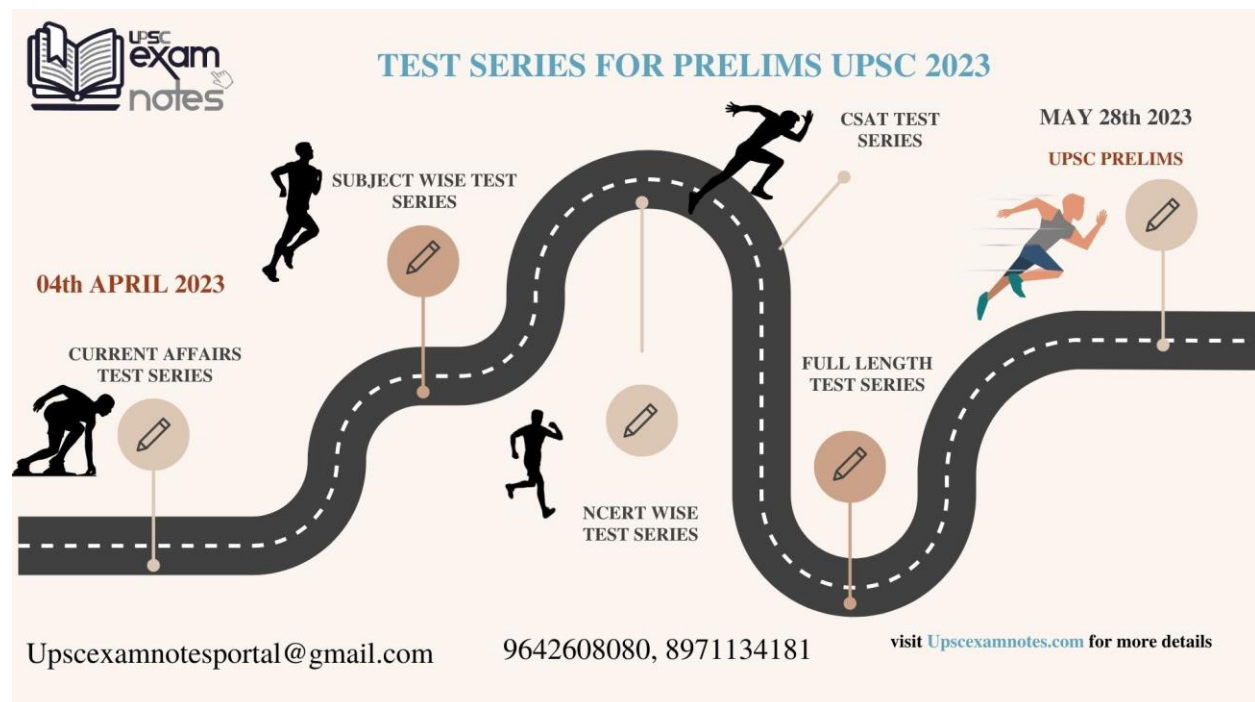
1. Lokottaravadin belong to Mahayana Buddhism
2. Lokottaravadin sect was an offshoot of the Mahasanghika sect of Buddhism
3. The deification of Buddha by Mahasanghikas fostered Mahayana Buddhism


Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 3 only
- D. 1, 2 and 3

Answer (B)

Sthaviravadins belong to Mahayana Buddhism. Lokottaravadin sect was an offshoot of Mahasanghika sect of Buddhism. The deification of Buddha by Mahasanghikas fostered the Mahayana Buddhism



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