

May (Week 3)

INDEX

Contents

Prelims	3
NATIONAL	3
Chief of Defence Staff	3
Biomaterial from fungal extract helps heal wounds	3
Devasahayam Pillai.....	4
Gyanvapi and the Places of Worship Act	5
RFID tags	6
The Puri Heritage Corridor Project.....	7
India topped air pollution death toll in 2019, says report	8
Ethanol blend in petrol to be raised to 20% in 3 years	9
India's vulnerability to drought	10
The Sela Tunnel	11
The blood groups of humans and primates	12
India's ethanol blending policy.....	13
Virtual Private Network	15
Project WARDEC	16
INTERNATIONAL	18
International Museum Day	18
Understanding Long COVID and its effects.....	19
What is retinoblastoma?.....	20
Mozambique confirms first wild poliovirus case in 30 years	21
Mains	23
GS II	23
Finland's bid to join NATO	23
In abeyance of Section 124A, a provisional relief	25
Pardon and remission: who grants them?	27
The confusion over the status of the Assam NRC	29
The neighbourhood in turmoil, lessons for India.....	31
GS III	34
Why are India's foreign exchange reserves falling?	34
Improving cold chain systems	35
Linking nature and humanity	37

Current Affairs Quiz	39
----------------------------	----



Prelims

NATIONAL

Chief of Defence Staff

(Source: [The Hindu](#))

Context: The Union government is reassessing the concept of the post of Chief of Defence Staff (CDS) and the Department of Military Affairs (DMA) to fix overlaps in the system and streamline the process, leading to a delay in the appointment to the post, according to official sources.

Details:

- In December 2019, the government approved the creation of the post of CDS, who would also function as the Principal Military Adviser to the Defence Minister and the Permanent Chairman of the Chiefs of Staff Committee (CoSC).
- In addition, the DMA was created as the fifth department in the Ministry of Defence (MoD) with the CDS functioning as its Secretary.
- The creation of the DMA was unexpected, and it took time to settle down, the official said elaborating that initially and till now, there are legacy issues of work distribution between the DMA and the Defence Department, headed by the Defence Secretary.
- Gen. Rawat, who served as the 26th Chief of the Army Staff, took over as the country's first CDS on January 01, 2020.
- He, his wife Madhulika Rawat and 12 others were killed as the IAF Mi-17V5 helicopter, which was en route from Sulur to the Defence Services Staff College, Wellington, crashed in the Nilgris in Tamil Nadu on December 8, 2021.
- The post of the CDS has been lying vacant since.
- The broad mandate given to the CDS includes bringing about jointness in "operations, logistics, transport, training, support services, communications, repairs and maintenance of the three Services, within three years of the first CDS assuming office."

Biomaterial from fungal extract helps heal wounds

(Source: [The Hindu](#))

Context: The use of antibiotics to control bacterial infections has taken a beating with the emergence of multi-drug resistant pathogens, and researchers are looking to develop other ways of tackling such bacterial infections. In this context scientists have developed a new biomaterial that can be used to disinfect wounds and hastens the process of healing, as seen in mouse models.

Pullulan polymer

- The biomaterial is derived from the polymer pullulan which is secreted by the fungus *Aureobasidium pullulans*.

- It is an exopolysaccharide, that is, this polymer is secreted by the fungus itself into the medium on which it is growing.
- Pullulan as a biomaterial is already successful and widely used commercially.
- It is exploited in food, cosmetics and pharmaceutical industry because of its non-toxic, non-mutagenic and non-immunogenic properties.
- Further, its ease of manufacture has also added to its appeal.
- Pullulan is basically a polymeric chain of glucose.
- They process the polymer to get a powder which is water-soluble. This solution can be applied on the wound surface and then covered with a sterile gauze. This can also be used in a gel form.
- This is because hydrogels have an inherent ability to accelerate wound healing by providing a closed and moist environment to the wounds for easy exchange of oxygen and act as absorbent pad to remove the pus and debris.

Devasahayam Pillai

(Source: [Indian Express](#))

Context: *Devasahayam Pillai, who was born a Hindu in Kanyakumari district of Tamil Nadu and converted to Christianity in the 18th century, became the **first Indian layman to be declared a saint by the Vatican.***

Life and death

- Devasahayam was born on April 23, 1712 in Nattalam village in Kanyakumari district, and went on to serve in the court of Marthanda Varma of Travancore.
- After meeting a Dutch naval commander at the court, Devasahayam was baptised in 1745, and assumed the name ‘Lazarus’, meaning ‘God is my help’.
- His conversion did not go well with the heads of his native religion. False charges of treason and espionage were brought against him and he was divested of his post in the royal administration
- While preaching, he particularly insisted on the equality of all people, despite caste differences”, which “aroused the hatred of the higher classes, and he was arrested in 1749.
- On January 14, 1752, Devasahayam was shot dead in the Aralvaimozhy forest. He is widely considered a martyr, and his mortal remains were interred inside what is now Saint Francis Xavier’s Cathedral in Kottar, Nagercoil.

Sainthood road

- In 2004, the diocese of Kottar along with Tamil Nadu Bishops’ Council and Conference of Catholic Bishops of India recommended Devasahayam for beatification.
- He was declared blessed by the Kottar diocese in 2012, 300 years after his birth.
- During the midday ‘Angelus’ prayer in the Vatican that day, Pope Benedict XVI described Devasahayam as a “faithful layman”, and urged Christians to “join in the joy of the Church in India and pray that the new Blessed may sustain the faith of the Christians of that large and noble country”, the note from the Vatican said.
- In 2014, Pope Francis recognised a miracle attributed to Devasahayam, clearing the path to his canonisation. He was approved for sainthood in February 2020 for “enduring increasing hardships” after he decided to embrace Christianity, according to the Vatican, which last November announced May 15, 2022 as the date for the ceremony.
- While clearing Devasahayam for sainthood in 2020, the Vatican dropped ‘Pillai’ from his name, and referred to him as “Blessed Devasahayam”.



Gyanvapi and the Places of Worship Act

(Source: [The Hindu](#))

Context: While hearing the plea of the Anjuman Intezamia Masjid, which manages the affairs of Gyanvapi mosque in Varanasi, challenging the video survey a Bench comprising Justices D.Y. Chandrachud and P.S. Narasimha, ordered that Muslims could continue offering 'namaz' there without any impediment. The top court posted the plea of the mosque committee, which had invoked the Places of Worship Act while seeking a stay on the survey, for hearing on May 19.

What does the Places of Worship Act say?

- In March 2021, the Supreme Court asked the Centre to respond to a petition that challenges the Places of Worship (Special Provisions) Act, 1991.
- The law was enacted to freeze the status of all places of worship in the country as on August 15, 1947. An exception was made to keep the Babri Masjid-Ramjanmabhoomi dispute out of its ambit as the structure was then the subject of litigation.
- The dispute ended after the court ruled that the land on which the Masjid stood should be handed over to the Hindu community for the construction of a Ram temple.
- The challenge to the Act questions the legality of the prohibition it imposes on any community laying claim to the places of worship of another.
- The Act says that no person shall convert any place of worship of any religious denomination into one of a different denomination or section.
- It contains a declaration that a place of worship shall continue to be as it was on August 15, 1947.
- Significantly, it prohibits any legal proceedings from being instituted regarding the character of a place of worship, and declares that all suits and appeals pending before any court or authority on the cut-off date regarding the conversion of the character of a place of worship shall abate.
- In other words, all pending cases will come to an end, and no further proceedings can be filed. However, any suit or proceedings relating to any conversion of status that happened after the cut-off date can continue.

In which cases will the law not apply?

- The 1991 Act will not apply in some cases. It will not apply to ancient and historical monuments and archaeological sites and remains that are covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- It will also not apply to any suit that has been finally settled or disposed of, any dispute that has been settled by the parties before the 1991 Act came into force, or to the conversion of any place that took place by acquiescence.
- The Act specifically exempted from its purview the place of worship commonly referred to at the time as Ram Janmabhoomi-Babri Masjid in Ayodhya.
- It was done to allow the pending litigation to continue as well as to preserve the scope for a negotiated settlement.
- Anyone contravening the prohibition on converting the status of a place of worship is liable to be imprisoned for up to three years, and a fine. Those abetting or participating in a criminal conspiracy to commit this offence will also get the same punishment.

What has the Supreme Court said on the status freeze?



- In its final verdict on the Ayodhya dispute, the Supreme Court had observed that the Act “imposes a non-derogable obligation towards enforcing our commitment to secularism”.
- The court went on to say: “Non-retrogression is a foundational feature of the fundamental constitutional principles, of which secularism is a core component.”
- The court described the law as one that preserved secularism by not permitting the status of a place of worship to be altered after Independence.
- In words of caution against further attempts to change the character of a place of worship, the five-judge Bench said, “Historical wrongs cannot be remedied by the people taking the law in their own hands. In preserving the character of places of public worship, Parliament has mandated in no uncertain terms that history and its wrongs shall not be used as instruments to oppress the present and the future.”

How is the Act likely to affect the Gyanvapi proceedings?

- The lawyers for the Gyanvapi mosque administration argue that the ongoing civil cases filed by Hindu devotees constitute an attempt to change the status of the place of worship and violates the Act.
- From entertaining the litigation, to orders such as appointing a commissioner to conduct a survey, the survey itself and the latest order to seal off a portion following the claim that a ‘shivling’ has been found are all contrary to the 1991 Act.
- The Vishwa Hindu Parishad, however, contends that the Places of Worship Act is not applicable to the Gyanvapi issue, as there was no change to the religious structure since 1947, and that Hindus have always been performing puja at the site.
- The outcome of the case will depend on whether the courts deem the proceedings contrary to the Act, or rule that it is not applicable to the dispute in Varanasi.

RFID tags

(Source: [Indian Express](#))

Context: After a high-level security review for the forthcoming Amarnath Yatra, the government has decided to track all pilgrims using Radio Frequency Identification (RFID) tags.

What does RFID stand for?

- Radio Frequency Identification. It’s a wireless tracking system that consists of tags and readers.
- Radio waves are used to communicate information/identity of objects or people to nearby readers – devices that can be hand-held or built into fixed positions like poles or buildings.
- The tags can carry encrypted information, serial numbers and short descriptions. There are also high-memory tags like the ones designed for use in the aviation industry.

Are there different types of RFID tags?

- RFID tags. Active RFIDs use their own power source, mostly batteries. Active tags can ping information every few seconds like beacons, or they can get activated when a reader is in the proximity.
- Passive RFIDs, on the other hand, are activated through the reader using the electromagnetic energy it transmits.
- This is enough power for the tag to transmit information back to the reader. Active tags have a longer read range, around 300 ft, compared to passive tags.

How do RFIDs work?

- RFID tags use an integrated circuit and an antenna to communicate with a reader using radio waves at several different frequencies – low frequency (LF), high frequency (HF), and ultra-high frequency

(UHF). The message sent back by the tag in form of radio waves is translated into data and analysed by the host computer system.

- Unlike Barcodes, RFIDs do not require direct line of sight to identify objects. They also have a bigger range.

Where are RFIDs commonly used?

- They are practically everywhere. Retail giants use them for inventory tracking. RFID chips are used as access keys in labs.
- They are also built into credit cards and library books.
- In her Budget speech this year, Union Finance Minister Nirmala Sitharaman spoke about the government's plan to roll-out e-passports. These are likely to be paper passports carrying RFID chips in the jacket.
- Currently, the FastTags being used for toll payments across the country are also RFID tags.

Is it possible to hack RFID tags?

- Depending on data to be shared, grades of encryption can be introduced between the tag and the reader to verify credentials.
- Memory segments of the card can hold data encrypted with cryptographic keys.
- While a casual data theft is not possible, hackers can use 'side-channel attacks' to extract the cryptographic information.
- But that hack is not easy to pull off given that tag manufacturers continue to improve security features.

The Puri Heritage Corridor Project

(Source: [Indian Express](#))

Context: *The ambitious Puri heritage corridor project of the BJD-led Odisha government has landed into a controversy. A recent affidavit filed by the Archaeological Survey of India in the Orissa High Court has further intensified the debate around the project.*

What is the Puri Heritage Corridor Project?

- Conceived in 2016, the Puri Heritage Corridor Project was unveiled in December 2019 to transform the town into an international place of heritage.
- The project includes redeveloping major portions of the town and in the vicinity of the temple for visitors and tourists.
- A resolution for the project was passed in the state assembly unanimously in February 2020 to begin the first phase of work estimated at a cost of Rs 800 crore.
- Following this, the Shree Jagannath Temple Administration (SJTA) approved the architectural design plan of the project at an estimated cost of Rs 3,200 crore.
- A total of 22 different projects will be executed in a phased manner. After the initial funds of Rs 800 crore from the state government's Augmentation of Basic Amenities and Development of Heritage and Architecture at Puri (ABADHA) scheme, another Rs 265 crore will be provided in the first phase.
- The project includes Shree Jagannath Temple Administration (SJTA) building redevelopment, a 600-capacity Srimandir reception centre, Jagannath cultural centre including Raghunandan library, integrated command, and control centre, Badadanda heritage streetscape, Srimandir amenities improvement, Sri Setu, Jagannath Ballav pilgrim centre, multilevel car parking, municipal market development, Swargadwar development, Pramod Udyan, Gurukulam, Mahodadhi market, beachfront development, Puri lake, Musa river revival plan, Atharnala and housing for sevayats.

What is the controversy about?

- The 12th century shrine is a centrally protected monument, with the ASI as its custodian.
- As per rules laid down under the Ancient Monuments and Archaeological Sites and Remains (Amendment and validation) Act, construction activities within a 100 metre around such a monument's perimeter are restricted.
- Constructions can only be carried out with approval from the National Monuments Authority (NMA).
- The NMA, a body under the Union Ministry of Culture was set up under the provisions of AMSAR Act for the protection and preservation of monuments and sites through management of the prohibited and regulated area around the centrally protected monuments.
- One amongst these responsibilities of NMA is also to consider grant of permissions to applicants for construction related activity in the prohibited and regulated area.
- NMA guidelines suggest that a heritage impact assessment study is a must for developmental work around any monument of archaeological importance with a built-up area of over 5,000 square metre. The Jagannath temple is spread over 43,301.36 sq metre.
- For the heritage project, the NMA had issued a No Objection Certificate (NOC) to the state government on September 4, 2021 for the construction of a cloakroom, a shelter pavilion, three toilets, an electrical room and a pavement within the prohibited 75-metre zone.
- The NOC issued by NMA is with regard to the fact that the public amenities do not come under the definition of construction as per the AMASR Act and that NMA has no objection if the project is carried out under ASI's supervision. However, no such NOC has been issued by the ASI.
- After a visit by the Director General, ASI on February 21, 2022 to review the developmental works of the project, ASI wrote a letter to the state government on March 5, asking officials concerned to submit a revised proposal for the development around the Puri srimandir.
- Multiple independent bodies like the lawyers association in Puri, locals, civil societies active in the holy town and even the BJP, have raised concerns around the structural stability of the 12th-century monument as JCB machines are being used to dig up the area within the 75 metre radius of the shrine to set up public amenities.

India topped air pollution death toll in 2019, says report

(Source: [Indian Express](#))

Context: Air pollution was responsible for 16.7 lakh deaths in India in 2019, or 17.8% of all deaths in the country that year. This is the largest number of air-pollution-related deaths of any country, according to a recent report on pollution and health published in *The Lancet Planetary Health*.

Details:

- Globally, air pollution alone contributes to 66.7 lakh deaths, according to the report, which updates a previous analysis from 2015.
- Overall, pollution was responsible for an estimated 90 lakh deaths in 2019 (equivalent to one in six deaths worldwide), a number that has remained unchanged since the 2015 analysis.
- Ambient air pollution was responsible for 45 lakh deaths, and hazardous chemical pollutants for 17 lakh, with 9 lakh deaths attributable to lead pollution.

Pollution in India

- The majority of the 16.7 lakh air pollution-related deaths in India – 9.8 lakh — were caused by PM2.5 pollution, and another 6.1 lakh by household air pollution.
- Although the number of deaths from pollution sources associated with extreme poverty (such as indoor air pollution and water pollution) has decreased, these reductions are offset by increased deaths attributable to industrial pollution (such as ambient air pollution and chemical pollution), the report noted.
- According to the report, air pollution is most severe in the Indo-Gangetic Plain. This area contains New Delhi and many of the most polluted cities. Burning of biomass in households was the single largest cause of air pollution deaths in India, followed by coal combustion and crop burning.
- The number of deaths remains high despite India's considerable efforts against household air pollution, including through the Pradhan Mantri Ujjwala Yojana programme.
- India has developed a National Clean Air Programme, and in 2019 launched a Commission for Air Quality Management in the National Capital Region.
- However, India does not have a strong centralised administrative system to drive its air pollution control efforts and consequently improvements in overall air quality have been limited and uneven, the report has said.

Lead pollution

- An estimated 9 lakh people die every year globally due to lead pollution and this number is likely to be an underestimate.
- Earlier the source of lead pollution was from leaded petrol which was replaced with unleaded petrol.
- However the other sources of lead exposure include unsound recycling of lead-acid batteries and e-waste without pollution controls, spices that are contaminated with lead, pottery glazed with lead salts and lead in paint and other consumer products,” he said.
- Globally more than 80 crore children (India alone contributes to 27.5 crore children) are estimated to have blood lead concentrations that exceed 5 µg/dL — which was, until 2021, the concentration for intervention established by the US Centers for Disease Control and Prevention.
- This concentration has now been reduced to 3.5 µg/dL.

Ethanol blend in petrol to be raised to 20% in 3 years

(Source: [The Hindu](#))

Context: *The Union Cabinet approved amendments to the National Policy on Biofuels, 2018, to advance the date by which fuel companies have to increase the percentage of ethanol in petrol to 20%, from 2030 to 2025. The policy to introduce 20% ethanol in petrol will take effect from April 1, 2023.*

Details:

- A statement from the government said the new policy would allow more feed stock for producing biofuel and foster the development of indigenous technologies.
- A 2021 report by the NITI Aayog said that “immense benefits” could accrue to the country by 20% ethanol blending by 2025, such as saving ₹30,000 crore of foreign exchange per year, increased energy security, lowered carbon emissions, better air quality, self-reliance, better use of damaged foodgrains, increased farmers' incomes and investment opportunities.
- India achieved 9.45% ethanol blending as on March 13, 2022, according to the Ministry of Petroleum and Natural Gas. The Centre projects that this will reach 10% by the end of financial year 2022. The government first announced its plans of advancing the 20% blending target in December 2020.

Impact on vehicles

- A 10% blending of petrol does not require major changes to engines but a 20% blend could require some changes and may even drive up the prices of vehicles.
- A greater percentage of blending could also mean more land being diverted for water-intensive crops such as sugar cane, which the government currently subsidises.
- The NITI Aayog projects an ethanol demand of 10.16 billion litres by 2025.
- The current ethanol production capacity in India of 4.26 billion litres derives from molasses-based distilleries, and 2.58 billion litres from grain-based distilleries.
- This is expected to expand to 7.6 billion litres and 7.4 billion litres respectively, and will require six million tonnes of sugar and 16.5 million tonnes of grains per annum by 2025.

India's vulnerability to drought

(Source: [The Hindu](#))

Context: A United Nations report has revealed that many parts of India fall under the list of regions that are vulnerable to drought globally. The report also stated that India's Gross Domestic Product (GDP) reduced by 2 to 5% between 1998 and 2017 due to severe droughts in the country. Globally, droughts in the same period caused economic losses of approximately \$124 billion. These and other global findings centred on drought were collated in the Drought in Numbers, 2022 report presented by the United Nations Convention to Combat Desertification (UNCCD).

What is the Drought in Numbers report?

- The Drought in Numbers report is a collection of data on the effects of droughts on our ecosystem and how they can be mitigated through efficient planning for the future.
- The report also helps inform negotiations surrounding key decisions by the UNCCD's 197 member parties at the 15th Conference of Parties (COP15), currently underway in Abidjan, Côte d'Ivoire. Drought, land restoration, and related aspects such as land rights, gender equality and youth empowerment are among the top considerations at COP15.
- The number and duration of droughts around the world has increased by an alarming 29% since 2000.

What is COP15?

- UNCCD's COP15 focuses on desertification, land degradation, and drought, with the theme for the conference being "Land. Life. Legacy: From scarcity to prosperity."
- The conference has brought together government representatives, private sector members, and civil society stakeholders to ensure that land continues to benefit present and future generations.

What does the report entail?

- According to World Bank estimates, drought conditions can force up to 216 million people to migrate by 2050. Other factors at play along with drought could be water scarcity, declining crop productivity, rise in sea levels, and overpopulation.
- Weather, climate and water hazards have accounted for 50% of all disasters and 45% of all reported deaths since 1970, the World Meteorological Organisation data has revealed. Nine in ten of these deaths have occurred in developing countries.
- Between 2020 and 2022, 23 countries have faced drought emergencies.
 - These are Afghanistan, Angola, Brazil, Burkina Faso, Chile, Ethiopia, Iraq, Iran, Kazakhstan, Kenya, Lesotho, Mali, Mauritania, Madagascar, Malawi, Mozambique, Niger, Somalia, South Sudan, Syria, Pakistan, the U.S., and Zambia. According to the report, climate change alone will cause 129 countries to experience an increase in drought exposure in the next few decades.



- More than a billion people around the world were affected by drought in 2000-19, making it the second-worst disaster after flooding. Africa was the worst hit, with 134 droughts, of which 70 occurred in East Africa. The World Health Organization has noted that globally, approximately 55 million people are directly affected by droughts annually, making it the most serious hazard to livestock and crops in almost every part of the world.
- The impact of drought is, however, not uniform across genders. Research shows that women and girls in emerging and developing countries suffer more in terms of education levels, nutrition, health, sanitation, and safety as a result of droughts.
- The burden of water collection also disproportionately falls on women (72%) and girls (9%). The report notes that they may spend up to 40% of their caloric intake fetching water.
- In 2022, over 2.3 billion people are facing water stress. Almost 160 million children are exposed to severe and prolonged droughts.

What are the environmental aspects?

- According to the report, if predictions are correct and global warming reaches 3°C by 2100, drought losses could be five times higher than today's levels.
- The largest increase in drought losses is projected in the Mediterranean and the Atlantic regions of Europe.
- Australia's megadrought in 2019-2020 contributed to "megafires" resulting in one of the most extensive losses of habitat for threatened species. About three billion animals were killed or displaced in the Australian wildfires.
- On a related note, 84% of all terrestrial ecosystems are threatened by changing and intensifying wildfires.
- According to a 2017 report by the Food and Agriculture Organisation, the percentage of plants affected by drought has more than doubled in the last 40 years. Around 12 million hectares of land are lost each year due to drought and desertification.

The Sela Tunnel

Context: *The strategically-significant Sela Tunnel project in Arunachal Pradesh is nearing completion. The project entered a decisive phase after a final blast earlier this year marked the culmination of excavation. Upon completion, which is likely by the end of this year, the Sela Tunnel above 13,000-ft will boost all-weather connectivity to the Line of Actual Control with China.*

What does the Sela Tunnel project include?

- The project, being executed by the Border Roads Organisation, includes two tunnels and a link road.
- While Tunnel 1 will be 980 metres long single-tube, Tunnel 2 will be 1,555 metres with one bi-lane tube for traffic and one escape tube for emergencies running alongside. The link road between the two tunnels will be 1,200 metres.
- Tunnel 2 will be one of the longest tunnels to have been constructed above an altitude of over 13,000 feet.
- The project also involves construction of an approach road of 7 km to Tunnel 1, which takes off from BCT Road, and a link road of 1.3 km, which connects Tunnel 1 to Tunnel 2. The total length of the project, including the tunnels, the approach and the link roads, will be around 12 km.

Where is it being constructed?

- Located in West Kameng district of Arunachal Pradesh, the tunnel project will provide an alternate axis to the Sela pass, which is at 13,700 feet.

- It will be on the BCT Road – the Balipara, Charduar and Tawang axis, which is more than 300 km long. The estimated cost of the project is Rs 700 crore.

Why is the project important?

- All-weather connectivity to Tawang and other forward areas in the sector will be the most important advantage that the project promises.
- At the moment, Sela pass stays closed for a few winter months.
- The project will provide a new alignment on the axis towards the LAC, and allow movement of military and civil vehicles all through the year.

The blood groups of humans and primates

(Source: [The Hindu](#))

Context: Dr. G.K. Patidar and Dr. Y. Dhiman (ISBT Science Series (2020) O, 1-12) has analysed several reports on the distribution of A, B, O and AB blood groups in India to be 23%, 34%, 35% and 8%, respectively, and that the Southern States have higher O group, about 39%.

Details:

- Many cities across India have what are called ‘blood banks’, where blood gathered by donation from blood donors is saved and preserved for later use in blood transfusion.
- How much blood can one donate?
 - Blood in a healthy human body is about 7% of the total body weight (the average body weight being 55-65 kg), or 4.7 to 5.5 litres (1.2 to 1.5 gallons).
 - In a regular donation, the donor gives about 500 ml of blood, and this is replaced in the body within a day or two (24-48 hours).
 - Blood types are determined by the presence (or absence) of certain antigens (molecules that can trigger an immune response), if they are foreign to the body of the recipient.
 - Thus, a matching of the blood type of the donor with that of the receiver is necessary.

Blood types

- They are classified as antigens A and B in our red blood cells.
- Landmark research on these was done by a medical doctor, Dr. Karl Landsteiner of the University of Vienna in Austria.
- He collected blood samples from several of his staff members and found that the serum of some of them led to the clumping together (or precipitation), while others had no problem with the donor serum.
- Using this information, he defined three acceptable types of blood cells which he called as A, B and O blood types.
- We still use these classifications to this day.
- Dr. Landsteiner received the Nobel Prize in physiology/medicine in 1930.

The Neandertals

- In 1964, the Italian population geneticist Dr. Cavalli-Sforza worked not only with his colleagues to check on the prevalence of blood groups A, B, O and AB in Italy and its neighbours, but also contacted several colleagues across the world, and together published a phylogenetic tree of 15 human populations,



and the prevalence of blood groups distributed across the continents of North and South America, South Africa, and Polynesia in the far East.

- In addition, he was also able to obtain fossils of Neandertals and Denisovs, from heritage sites in Europe, roughly between 40,000 to 1,00,000 years ago. His group could then classify these populations with blood groups A, B, O and AB.
- And the latest paper by Silvana Condemi et al., in PLOS One, July 28, 2021, titled, “Blood groups of Neandertals and Denisova decrypted” point out that blood group systems were the first phenotypic markers used in anthropology to decipher the origin of populations across the world, as aboriginal humans migrated to various parts of the world (Eurasia, Sub-Saharan Africa, Australia and Papua, and other places).
- Analysis of the blood group markers of some Neandertals and Denisovans showed the presence of the ABO group, and some other markers that are used today in blood transfusion.

Primate monkeys

- Interestingly in their paper, Dr. Farhud and Dr. Yeganeh also quote a report published by Dr. P. Kramp in Primatologia III (1960) Basel which reports that primates (chimpanzee, gorilla, orangutan, gibbons) also have blood groups containing AB, A, B and O, just as we humans have. Indeed, we owe our blood types (A, B, O, AB), thanks to what our primate monkey ancestors had millions of years ago. Just think about it.
- Our blood is our heritage, just as our genes are — from monkeys to archaic humans and our ancestors to today.

India's ethanol blending policy

(Source: [The Hindu](#))

Context: *The Union Cabinet on Wednesday approved amendments to the National Policy on Biofuels, 2018, to advance the date by which fuel companies have to increase the percentage of ethanol in petrol to 20%, from 2030 to 2025. The policy of introducing 20% ethanol is expected to take effect from April 1, 2023.*

What is the history of ethanol-blending in India?

- Since two decades, India has been moving towards putting in place an ecosystem to have more ethanol blended into petrol for use vehicles, particularly two and four wheelers.
- Government records suggest about 75% of India's 220 million vehicles are two wheelers and 12% four wheelers.
- Ethanol, or ethyl alcohol, is a hydrocarbon that when burnt can generate heat and power engines.
- However, it takes much more ethanol to power a vehicle's engine than petrol. It also leaves residual by-products that can corrode and damage the vehicle which is why, while vehicles can be run on ethanol, they need to be tuned accordingly so that they don't compromise on efficiency and usability.
- On the other hand, the gains are potentially significant as ethanol can be sourced from sugarcane, molasses, maize, which given India's agricultural base, can substantially reduce India's dependence on petroleum.
- Since 2001, India has tested the feasibility of ethanol-blended petrol whereby 5% ethanol blended petrol (95% petrol-5% ethanol) was supplied to retail outlets.
- In 2002, India launched the Ethanol Blended Petrol (EBP) Programme and began selling 5% ethanol blended petrol in nine States and four Union Territories that was extended to twenty States and four UTs in 2006. Until 2013-14, however, the percentage of blending never crossed 1.5%.

- In 2015, the Ministry of Road Transport and Highways notified that E5 [blending 5% ethanol with 95% gasoline] petrol and the rubber and plastic components used in gasoline vehicles produced since 2008 be compatible with the E10 fuel.
- In 2019, the Ministry notified the E10 fuel [blending 10% ethanol with 90% gasoline]. The rubber and plastic components used in petrol vehicles are currently compatible with E10 fuel. Financial incentives for distilleries coupled with policy support has seen average blending touch 5%.
- Standards for E20, E85 and even E100 fuel have already been laid. This includes standards for ethanol blended diesel.
- Since 2020, India has been announcing its intent to achieve 10% blending by the end of 2022 and 20% blending by 2030. The Centre has also targeted 5% blending of biodiesel with diesel by 2030.

What does switching to E20 entail?

- A NITI Ayog Committee report of June 2021 lays out a comprehensive picture of ethanol blending, the challenges and a roadmap. India's net import of petroleum was 185 million tons at a cost of \$55 billion in 2020-21.
- Most of the petroleum is used by vehicles and therefore a successful 20% ethanol blending programme could save the country \$4 billion per annum, or about ₹30,000 crore.
- To achieve such savings, the committee estimates an ethanol demand of 1,016 crore litres based on expected growth in vehicle population.
- Because electric vehicles are also likely to increase, this should partially offset demand for ethanol leading to a requirement of 722-921 crore litres in 2025.
- This however is an "optimistic" projection as the NITI report itself notes. India's current ethanol production capacity consists of 426 crore litres from molasses-based distilleries, and 258 crore litres from grain-based distilleries.
- This is expected to increase to 760 crore litres and 740 crore litres respectively and would suffice to produce 1016 crore litres of ethanol required for EBP and 334 crore litres for other uses.
- This will require six million tonnes of sugar and 16.5 million tonnes of grains per annum in ESY 2025.

How does this affect engines?

- When using E20, there is an estimated loss of 6-7% fuel efficiency for four wheelers which are originally designed for E0 and calibrated for E10, 3-4% for two wheelers designed for E0 and calibrated for E10 and 1-2% for four wheelers designed for E10 and calibrated for E20.
- Car makers have said that with modifications in engines (hardware and tuning), the loss in efficiency due to blended fuel can be reduced.
- To compensate the consumers for a drop in efficiency from ethanol blended fuels, tax incentives on E10 and E20 fuel may be considered.
- The test vehicles worked well in several test-situations, the report noted.

What is the international experience?

- Flex Fuel Engine technology (FFE), or vehicles that run entirely on ethanol, are popular in Brazil and comprise nearly 80% of the total number of new vehicles sold in 2019.
- The cost of flex fuel vehicles (four-wheelers) could cost about ₹17,000 to ₹25,000 more than the current generation of vehicles.
- The two-wheeled flex fuel vehicles would be costlier by ₹5,000 to ₹12,000 compared to regular petrol vehicles.
- The global production of fuel ethanol touched 110 billion litres in 2019, or about an average growth of 4% year per year during the last decade.
- The U.S. and Brazil make up 92 billion litres, or 84% of the global share, followed by European Union (EU), China, India, Canada and Thailand.

- The prices of ethanol produced in India are higher compared to U.S. and Brazil, because of the minimum support prices that the government provides.

What are the environmental costs of ethanol blending?

- Because ethanol burns more completely than petrol, it avoids emissions such as carbon monoxide.
- However, tests conducted in India have shown that there is no reduction in nitrous oxides, one of the major environmental pollutants.
- A report by the Institute for Energy Economics and Financial Analysis (IEEFA) says that for India to meet its target of 20% ethanol blended in petrol by the year 2025, it will need to bring in 30,000 additional sq km of land to come under maize cultivation. Half that land can be used more efficiently to produce clean electricity from solar energy, they contend.
- For India, sugarcane is the cheapest source of ethanol. On average, a ton of sugarcane can produce 100 kg of sugar and 70 litres of ethanol but that would mean 1,600 to 2,000 litres of water to produce 1 kg of sugar, implying that a litre of ethanol from sugar requires about 2,860 litres of water.

Virtual Private Network

(Source: [Indian Express](#))

Context: *The government issued a stark warning to virtual private network (VPN) service providers: adhere to the cybersecurity rules released by the Indian Computer Emergency Response Team (CERT-In) or wrap up operations in the country.*

What is a VPN?

- It is what the name suggests — a private network that is virtually created when you surf the Web.
- Every time you switch on your VPN connection, a secure channel is created, which acts as an intermediary between your device and the destination webpage.
- Your data is then sent to an external VPN server, which then connects you to your destination.
- However, when the VPN server does this, your IP address, which is the online equivalent of a user-specific postal code, is changed — and thus websites are unable to accurately track your location.
- This private network promotes online safety and enhances your overall privacy on the Web.

How does VPN work?

- Imagine you are driving somewhere from your home in your car. The number plate of your car is your IP address.
- Everyone on the road can see where you are headed, and can use the number plate to track your car back to you. This is like browsing online in the normal way — without a VPN.
- Using this same analogy, when you use a VPN, you are able to take a different, hidden road that leads to the same destination, but no one can see you on it, and the hidden road changes your number plate for the journey and then again when you come back home.
- Essentially then, no one knows where you've been, how, and for how long.

What if the secrecy is misused?

- That is what governments argue.
- Restrictions of the kind imposed by India can deter cybercriminals and prevent a range of crimes such as identity theft, online fraud, cyberbullying, stalking, etc. As our lives are increasingly lived online, we are

more vulnerable to these crimes, especially those who do not understand how the Internet works and the risks it can pose.

Project WARDEC

Context: *The Army Training Command on May 13 signed a memorandum of understanding (MoU) with Gandhinagar-based Rashtriya Raksha University (RRU) to develop a 'Wargame Research and Development Centre' in New Delhi. The project, which has been given a prototype name 'WARDEC', will be a first-of-its-kind simulation-based training centre in India that will use artificial intelligence (AI) to design virtual reality wargames.*

What is the wargame centre about?

- The Wargame Research and Development Centre will be used by the Army to train its soldiers and test their strategies through “metaverse-enabled gameplay”.
- The wargame models will be designed to prepare for wars as well as counter-terror and counter-insurgency operations.

Where will the centre come up and when?

- The centre will come up in a military zone in New Delhi, confirmed RRU officials privy to the development. The RRU will join hands with Tech Mahindra to develop the centre in the coming three to four months, officials added.
- The RRU, an institute under the Ministry of Home Affairs (MHA), specialises in national security and policing. Located in Gandhinagar's Lavad village, it is an “institute of national importance” – a status granted to it by an Act of Parliament.
- A team from the RRU will soon visit Delhi to get from the Army all the data it requires to begin work. The task has been assigned to faculty members from RRU's School of Information Technology, Artificial Intelligence and Cyber Security.

How will these simulation exercises play out?

- Soldiers will test their skills in the metaverse where their surroundings will be simulated using a combination of virtual reality (VR) and augmented reality (AR).
- In metaverse, the players will get a realistic experience of the actual situation. If a weapon weighing 5 kg drops or the air pressure falls, they will feel it like anyone would in a live situation, real-time. The game would play out player versus player, player versus computer or even computer versus computer.

How will the centre help the Army?

- The Army intends to use the wargame centre to train its officers in military strategies. According to RRU officials, the Army will provide data to set the backdrop of the gameplay, so that participants get a realistic experience.
- In Army, it is often said that the enemy can ambush you from 361 directions, where 360 sides are around the soldier, and one is above in case there is an airdrop.
- So, wargame simulation helps the Army think of all possible scenarios. Aspects such as slope of terrain, weather, time, air pressure, enemy surveillance reach, reach of artillery, the position of troops, soldier's health and enemy's reaction capabilities are all taken into account by the use of AI.

What promise does AI-based wargame simulation hold?

- Apart from the armed forces, the BSF, CRPF, CISF, ITBP and SSB can also use the metaverse-enabled simulation exercises for better training.
- The use of AI can provide a totally immersive training experience as it can simulate a battlefield close to reality and map several eventualities in the probable event of a war.

How many countries use such wargaming drills?

- Since the 9/11 attacks, use of information technology-enabled wargaming is preferred by several countries like the US, Israel, the UK to prepare for possibilities in case of terror attacks or war.
- In March 2014, several world leaders, including former German chancellor Angela Merkel, former US president Barack Obama and Chinese president Xi Jinping had played a war simulation game during the Hague Summit about how to react in case of a nuclear attack.
- In that case, the target of the nuclear attack was a fictional country named Brinia.

INTERNATIONAL

International Museum Day

(Source: [Indian Express](#))

Context: *In keeping with the belief that museums have the power to transform, the International Council of Museums (ICOM) announced May 18 as International Museum Day (IMD) in 1977.*

Details:

- Its objective is to raise awareness about the fact that, “Museums are an important means of cultural exchange, enrichment of cultures and development of mutual understanding, cooperation and peace among peoples.”
- Officially established with the adoption of a resolution during the ICOM General Assembly in Moscow in 1977, the idea of IMD goes back to 1951, when the ICOM gathered the international museum community for a meeting called Crusade for Museums, to discuss the theme “Museums and Education.”

How the world comes together on IMD

- Museums across the world plan events and activities to celebrate International Museum Day.
- According to the ICOM website, last year, more than 37,000 museums participated in the event in about 158 countries.
- The participants can register and mention their programme on an interactive map on the official website of the ICOM.
- Every year, the ICOM also declares a theme and the participating museums are invited to create special activities in line with that.
- The theme chosen for 2020 was “Museums for Equality: Diversity and Inclusion” and 2021 reflected on the pandemic, with the theme “The Future of Museums: Recover and Reimagine.”
- The theme for 2022 is “The Power of Museums”, elucidating that “museums have the power to transform the world around us. As incomparable places of discovery, they teach us about our past and open our minds to new ideas — two essential steps in building a better future.”

The oldest museums in the world

- In classical Latin “museum” meant a building “a place devoted to the Muses (inspirational goddesses of literature, science, and the arts), a place for the study of special arts and sciences,”
- Termed by many historians as the first museum in the world, Ennigaldi-Nanna’s museum was built by a Babylonian princess in circa 530 BCE. However, at the time most of the ‘museums’ showcased private collections.
- Some of the oldest public museums in the world opened in Italy during the Renaissance, and it is believed that the Capitoline Museums in Rome have the oldest public collection of art.
 - It opened in 1471 when Pope Sixtus IV donated a collection of ancient sculptures to the people of Rome.
- The Vatican Museums (Musei Vaticani), the second oldest museum in the world, traces its origins to 1506, when Pope Julius II displayed a sculpture of Laocoön and His Sons for the public at the Vatican.
 - Since then, the Vatican Museums have grown and now boast over 70,000 works of art, of which 20,000 are on display for the public.
- Founded in 1814, the Indian Museum in Kolkata, also known as the Imperial Museum, is the oldest museum in India. Its collection boasts of a wide range, from armor and antiques to ornaments, skeleton, fossils and miniature paintings.

Understanding Long COVID and its effects

(Source: [The Hindu](#))

Context: Months after the first cases of COVID-19 were detected in the world outside China, concerns about persistent symptoms post infection cropped up. Systems were then set up to study this phenomenon and provide possible solutions to those suffering from sequelae related to their COVID infection. The Lancet's May 11 publication has provided more grist to the mill for those calling for greater attention to Long COVID, establishing that the burden of symptomatic sequelae remained fairly high even two years after COVID. Pandemic survivors also had a remarkably lower health status than the general population at two years, it said.

What is long COVID?

- With the ongoing COVID-19 pandemic, evidence showed that a considerable proportion of people who have recovered from COVID-19 continue to face long-term effects on multiple organs and systems.
- These sequelae have also been noticed in people who did not exhibit any symptoms during their infection stage.
- In the absence of a universally-accepted definition, post-COVID Syndrome, by consensus, is defined as signs and symptoms that develop during or after an infection consistent with COVID-19 which continue for more than 12 weeks and are not explained by alternative diagnosis.
- Technically, post-COVID defines symptoms that persist four weeks after infection and Long COVID, 12 weeks past a COVID-19 infection.
- The effects range from skin rash, sleep difficulties, fatigue or muscle weakness, hair loss, joint pain, palpitations, dizziness, cough, headache, sore throat, chest pain, smell and taste disorders, anxiety disorders and mobility issues.

How long does long COVID last for?

- The study, perhaps for the first time, described Long COVID for the longest time possible — two years.
- It characterises the longitudinal evolution of health outcomes in hospital survivors with different initial disease severity throughout the two years after an acute COVID-19 infection.
- A matched control group of adults without a COVID-19 infection were studied against patients who tested positive for SARS-CoV-2, and had been discharged from Jin Yin-tan Hospital in Wuhan, China, between January 7 and May 29, 2020. Health outcomes were measured at six months, 12 months and two years after symptom onset.
- The study did note that the proportion of individuals with at least one sequelae symptom decreased significantly from 68% at six months to 55% at two years, (with fatigue or muscle weakness being the most frequently reported symptom throughout follow-up).
- The scene continued to improve in almost all domains, especially in terms of anxiety or depression, with the proportion of participants reporting symptoms of anxiety or depression dropping significantly from 23% at six months to 12% at two years.
- About 89 % of those who had been hospitalised for COVID had returned to their regular work at the end of two years.
- At the two-year follow-up, notably, long COVID symptoms were related to a decreased health-related quality of life and exercise capacity, psychological abnormality, and increased use of health care after discharge.
- COVID-19 survivors still had more prevalent symptoms and more problems with pain or discomfort, as well as anxiety or depression, at two years, than did the control group, as per the study.



- Additionally, a significantly higher proportion of survivors who had received higher-level respiratory support during hospitalisation continued to have lung issues.
- The study findings indicate that there was an urgent need to explore the pathogenesis of Long COVID and develop effective interventions to reduce the risk of such side effects.

What is the status in India?

- The government of India developed its own National Comprehensive Guidelines for the management of post-COVID sequelae.
- This document sets out detailed techniques to treat post-COVID complications affecting cardiovascular, gastrointestinal, nephrological, neurological and respiratory systems.
- Several hospitals set up COVID wards to treat persons who complain of what seemed like post-COVID symptoms.
- In January 2022, Indraprastha Apollo Hospital, New Delhi, reported that people infected in the second wave of COVID have experienced four times more Long COVID conditions than those from the first wave.
- According to doctors at the hospital, people who contracted the virus in the second wave showed multiple symptoms including high grade fever, diarrhoea and severe lung infection.
- They added that even after a year of testing positive, the road to recovery for patients had been very difficult, with acute weakness and fatigue plaguing their everyday lives.

What is retinoblastoma?

(Source: [Indian Express](#))

Context: *Retinoblastoma is the most common eye cancer occurring in young children and the Department of Ophthalmology, at the Advanced Eye Centre, since 1996, has been running a Retinoblastoma Clinic here three days a week.*

What is retinoblastoma?

- It is the most common cancer in the eye (malignant tumor) in small children. It can occur in one or both eyes and may be hereditary or sporadic.
- It can be life-threatening as well as take away vision if not treated timely and is detected by seeing White Reflex (WR).

Symptoms

- **White Reflex in the eye:** Pupil that looks white or yellow instead of red when light hits it.
- **Squinting:** A crossed eye, looking either toward the nose or towards the ear.

Retinoblastoma disease burden

- Nearly 1,500-2,000 children are diagnosed with retinoblastoma every year in India.
- The majority of these children belong to lower socio-economic strata of society and nearly 60 per cent of these patients have advanced disease at presentation.
- It is associated with low treatment and survival rates which are due to lack of awareness, social stigma, poor access to care, high cost of treatment, lack of infrastructure, health professionals, good treatment protocols, quality drugs, diagnostics, and supportive care.

How is retinoblastoma detected?

- Ocular ultra-sonography and fundus examination are the immediate OPD procedures.
- Its extent is determined by Magnetic Resonance Imaging (MRI) and systemic staging investigations (bone marrow biopsy, CSF, and whole-body PET scan).

How is retinoblastoma managed?

- Retinoblastoma treatment requires a multi-disciplinary approach and this is managed by a team of experts, specialised in taking care of such children.
- Treatment planning is done after a complete clinical examination and classification of the disease (grouping and staging). Treatment is individualised to each patient.
- Chemotherapy can be delivered intravenously or intra-arterial and is given by the paediatric oncologist and is the most common modality of treatment. This has to be followed up with local therapy, which is managed by the ophthalmologist using various modalities.
- Assessing the response and monitoring of the local tumor, the need for change in treatment modality is done on a weekly to monthly basis till the tumor is in control.
- After completion of treatment, further monitoring and follow-up are done to keep a watch on the recurrence of disease and side effects of systemic treatment.
- These patients need lifelong follow-up and genetic counselling offered to parents.

Mozambique confirms first wild poliovirus case in 30 years

Context: Mozambique identified its first case of wild poliovirus Type 1 this week after a child contracted the disease. It is the country's first such case since 1992 and the second imported case of wild poliovirus in Southern Africa this year. An outbreak was reported in Malawi earlier this year.

What is polio?

- Polio is a crippling and potentially deadly disease that affects the nervous system...
- Because the virus lives in the faeces (poop) of an infected person, people infected with the disease can spread it to others when they do not wash their hands well after defecating (pooping).
- People can also be infected if they drink water or eat food contaminated with infected feces."
- Even so, most people with polio do not feel sick, while some people have only minor symptoms, such as fever, tiredness, nausea, headache, nasal congestion, sore throat, cough, stiffness in the neck and back, and pain in the arms and legs. In rare cases, polio infection causes permanent loss of muscle function (paralysis).
- Polio may be fatal if the muscles used for breathing are paralysed or if there is an infection of the brain.
- The virus multiplies in the intestine, from where it can invade the nervous system and can cause paralysis.
- Once that happens, the patient is crippled for life because there is no treatment for the affliction. That is why polio is so dreaded. Polio infection, however, is easily preventable by a vaccine.
- There are three variants of the poliovirus, numbered 1 to 3. For a country to be declared polio-free, the wild transmission of all three kinds has to be stopped. For eradication, cases of both wild and vaccine-derived polio infection have to be reduced to zero.

Polio cases in India

- India was declared polio-free in January 2014, after three years of zero cases, an achievement that is widely believed to have been spurred by the successful Pulse Polio campaign.
- The last case due to wild poliovirus in the country was detected on January 13, 2011.



- The WHO on February 24, 2012, removed India from the list of countries with active endemic wild poliovirus transmission.
- India launched the Pulse Polio immunisation programme in 1995, after a resolution for a global initiative of polio eradication was adopted by the World Health Assembly (WHA) in 1988.
- Under the Pulse Polio programme, all states and Union Territories have developed Rapid Response Teams (RRT) to respond to any polio outbreak in the country. Emergency Preparedness and Response Plans (EPRP) have also been developed by states, indicating steps to be undertaken in case of detection of a polio case.
- To prevent the virus from coming to India, the government has since March 2014 made the Oral Polio Vaccination (OPV) mandatory for those travelling between India and polio-affected countries, such as Afghanistan, Nigeria, Pakistan, Ethiopia, Kenya, Somalia, Syria and Cameroon.



Mains

GS II

Finland's bid to join NATO

(Source: [The Hindu](#))

Context: *The strategic geopolitical ambiguity of Finland has finally come to a halt and taken a hard turn as Finland formally announced its intention of joining the North Atlantic Treaty Organization (NATO). This marks the culmination of a series of veiled comments by Finland hinting their intention of joining NATO. The Finnish President Sauli Niinistö along with the Ministerial Committee on Foreign and Security Policy announced their bid for NATO membership on Sunday. They would now send their recommendation to the Parliament where it is expected to pass through without any roadblocks.*

Details:

- The last two odd decades have seen Finland revise its outlook of global geopolitics and order but rarely have their different heads of state overtly signalled their shift.
- This ambiguity has allowed them to not only improve their ties with rest of the Europe post 2000 but also go back to increasing trade ties with Russia during the European economic slump.
- Their actions post the collapse of the Soviet Union and emergence of a more integrated European Union indicate their preference for having their cake and eating it too.
- This is set to change and has been brought about by Russia's actions in Ukraine.
- The Finnish security concerns began to heighten post the Russian annexation of Crimea in 2014 and have snow-balled now into an immediate existential crisis of sorts after the recent Russian assault on Ukraine.

What is happening?

- The last joint statement by the Finnish President and Prime Minister Sanna Marin put it in no ambiguous terms that "Finland must apply for NATO membership without delay".
- This was followed by the official Finnish declaration of a NATO bid on Sunday. This tectonic shift is likely to have significant ramifications for the entire European continent.
- The last few days also saw Russian Defence Committee deputy chair, Aleksey Zhuravlyov, discuss Russia nuking Europe and question the very existence of Finland on Russian state television which bears similarities to their justification for the Ukrainian invasion. Mr. Zhuravlyov also threatened the Finns with the use of Kinzhal-class ballistic missiles boasting how it "will reach Finland in 20 seconds, or even 10 seconds". RAO Nordic (a subsidiary of Inter RAO which is a major energy company in Russia), citing delayed payments from Finland, cut off electricity supply to Finland.
- The Finns seem to be hopeful that Sweden, the Baltic nations, and their own energy sources can help fill the void.
- There also seems to be a concerted effort from sections of the western media to create a sense of panic in Finland which has been decried by Finnish nationals.
- Mr. Niinistö spoke with the U.S. President Joe Biden and the Swedish Prime Minister Magdalena Andersson discussing their "next steps towards NATO membership".

How has Russia responded to the announcement?

- Official voices from within Russia give a sense of how they perceive the U.S's role as an agent provocateur trying to lure other countries towards NATO.

- The Russian state seems to be going through a sense of mania where officials talk about nuking countries, ‘crushing bugs’ (referring to the Baltic states), and invading countries in a bid to safeguard their security.
- Finland’s formal declaration and Sweden’s interest in joining NATO has aggravated their security dilemma.
- We see the manifestation of Waltzian realism unravelling in front of us as nations begin to grapple with their existential crises precipitated by the anarchic structure of the world and actions of other states aimed towards their security goals.
- These states seek security guarantees through alliance formation as well.
- The risk of a new arms race cannot be entirely written off as we see strongman tactics from the Russian head of state and from different senior security officials of the Russian government which signal revanchist attitudes and a highly volatile method of engagement.

What does NATO membership achieve?

- One would expect NATO membership to allay Finland and Sweden’s security concerns to a reasonable degree as all the countries involved in the highly volatile region would, likely, reach an impasse until someone decides to break through the gridlock through a change in tactics.
- However, the rational actor assumption has recently been on tumultuous grounds vis-à-vis Russia, and it would be difficult to predict its next set of actions as and when Finland and Sweden formally join NATO.
- Even the comments of a former Prime Minister of Denmark, Anders Fogh Rasmussen, on the NATO membership teaching Russian President Vladimir Putin the resolve of the West and the counterproductive nature of the war, are based on Mr. Putin following the supposed logic of a rational actor.

What lies ahead?

- As Kremlin’s rhetoric and threats against its neighbours continue to increase, it wouldn’t be a flight of fancy to imagine that more of its neighbours, primarily the Baltic states, will firmly express their heightened security concerns and seek to remedy them.
- Those actions would then in turn further create a high security risk environment in the immediate periphery of Russia.
- NATO expansionism has been publicly cited multiple times by Russian Ministers and senior defence officers as a major reason for Russia’s perceived security threat.
- Estonia has already asked NATO for local anti-Russia command centres and greater air defence systems citing Baltic security concerns.
- The full-blown Russian invasion of Ukraine, which began almost three months back, has only resulted in isolating Russia from most countries in the world. They are losing a significant number of troops and scores of military equipment as the war continues.
- What seemed initially like a quick victory to the Russians is now spiralling into a nightmare for Kremlin. The propaganda can only cloak the reality for so long. The war is also taking an economic toll on Moscow as it is further impacted by the economic sanctions against them by the West.
- As multiple corporations leave the Russian space and countries continue to decrease their energy dependency on Russia, the road ahead for Moscow is most certainly a dark and long-winding one.
- As Finland joins NATO, Russia could seek to deploy more troops along the Russian-Finland border and further thin-out an already attenuated Russian army.
- Finland and Russia share a 1,300 km border and Kremlin’s actions against Finland’s (and potentially Sweden’s) NATO membership may heavily depend on the potential military asset deployment along the border on the Finnish, and potentially Swedish, side.



- The Finns may very well not opt for immediate asset deployment and perhaps would want to use their NATO membership as a signal to Russia but if they continue to feel sufficiently threatened, they may opt for exhaustive asset deployment.
- Russia's revanchist assault on Ukrainian sovereignty has cascaded into a nightmare for Russian security concerns, with NATO looking to be at their immediate doorsteps.
- Such actions would only further fuel already anxious and retaliatory minds within Russia and may cause things to spiral out of control. Constant communication from all sides is key to avoid a grim eventuality.
- The Finns understand this and have constantly been in touch with Kremlin updating them of developments. Sunday's announcement saw the Finnish President reiterate that they don't see security as a zero-sum game (a comment aimed to quell anxious minds within Kremlin).
- The situation is also exacerbated by the political capital Mr. Putin continues to enjoy which makes it even more difficult for any significant political opposition to come to the fore.
- The only hope from within the Russian borders would be the collective conscience of the Russian public.

In abeyance of Section 124A, a provisional relief

(Source: [The Hindu](#))

Context: *In a brief order delivered in S.G. Vombatkere vs Union of India, a three-judge Bench of the Supreme Court of India effectively suspended the operation of Section 124A of the Indian Penal Code. The provision, which criminalises sedition, has been used by successive regimes, including by governments post-Independence, to suppress democratic dissent. Previously, during oral hearings, the Bench, presided by the Chief Justice of India, Justice N.V. Ramana, had indicated that it was of the view that the law was an anachronism, a colonial-era relic. Now, through an order on May 11, the Court has directed governments, both at the level of the Union and the States, to keep "all pending trials, appeals and proceedings" arising out of a charge framed under Section 124A "in abeyance".*

Basis of reconsideration

- This direction was issued after the Union government filed an affidavit informing the Court that it had decided to re-examine the law.
- The deposition, by itself, offered no firm commitment on whether the Government would, in fact, recommend to Parliament a complete removal of Section 124A.
- But the Bench believed that the offer to reconsider the provision, if nothing else, showed that the Government was in broad agreement with the Court's prima facie opinion on the matter, that the clause as it stands "is not in tune with the current social milieu, and was intended for a time when this country was under the colonial regime".
- Nestled inside a chapter in the penal code dealing with "Offences against the State", Section 124A defines sedition as any action — "whether by words, signs, or visible representation" — which "brings or attempts to bring into hatred or contempt or excites or attempts to excite disaffection towards the Government established by law in India".
- The word "disaffection", the provision explains, "includes disloyalty and all feelings of enmity". The section carries with it the prospect of life in prison.
- What is more, right from its inception, the offence has been treated as non-bailable.
- This means that a person arrested without trial has no inherent right to bail. He or she must apply to a judge to seek release.

Munshi amendment ignored



- As is only too evident, the law was always meant to be used as a restraint on dissent, to crush any and every form of opposition aimed at the government.
- Indeed, it was by pointing to these repressive features and to the trials of Bal Gangadhar Tilak and Mohandas Gandhi that K.M. Munshi argued so forcefully in the Constituent Assembly to delete the use of the “equivocal” word “sedition” as a permitted restriction on free speech.
- Should the word not be deleted from the Draft Constitution, Munshi said, an “erroneous impression would be created that we want to perpetuate 124-A of the I.P.C”.
- Munshi’s amendment sailed through. The adopted Constitution did not permit a restriction on free speech on the grounds of sedition. But despite this, governments across India continued to charge people with the offence.
- In the 1950s, two different High Courts struck down Section 124A as offensive to freedom. But, in 1962, in Kedar Nath Singh vs State of Bihar, a five-judge Bench of the Supreme Court reversed these verdicts.
- The Court paid no heed to the debates that informed the Constituent Assembly. Instead, it found that Section 124A was defensible as a valid restriction on free speech on grounds of public order.
- However, while upholding the clause, the Court limited its application to “acts involving intention or tendency to create disorder, or disturbance of law and order, or incitement to violence”.
- Quite apart from the limitations that it read in — which are by themselves ill-defined — the decision ignored the otherwise wide amplitude of the words used in Section 124A.
- It failed to recognise that terms such as “disaffection towards the government”, which are fundamentally vague, ought to have no place in a penal statute, and that, all along, the intention behind criminalising sedition was to quell the right to dissent.
- A supposed circumscription of the ambit of the offence was, therefore, never going to be effective.

Marginalised most affected

- Since then, in its application by law enforcement — and indeed by judges hearing petitions for bail — the limitations imposed in Kedar Nath Singh have rarely been observed.
- And in recent years, we have seen an enhanced exploitation of the law, where even the most benign acts of opposition have been met with a charge of sedition. As is often the case with abuses of this kind, it is the most marginalised sections of society that have faced the brunt of the harm.

An altered landscape

- It is no doubt true that a law cannot be invalidated merely because it has been subject to misuse. But in the case of sedition, the rationale for the decision in Kedar Nath Singh and the survival of Section 124A have both become untenable with time.
- Since 1962, when the judgment was handed out, the Supreme Court’s reading of fundamental rights has undergone a transformative change.
- For instance, the Court has, in recent times, struck down penal laws on grounds, among other things, of imprecision in their language, and of the chilling effect that the restrictions have on free speech.
- Moreover, since 1973, sedition has also been treated as a cognisable offence; that is, the police can arrest persons suspected of having committed the offence without a warrant.
- The altered landscape meant that when fresh challenges were mounted against Section 124A, the time to reconsider Kedar Nath Singh had clearly arrived. This reconsideration could have been done in different ways.
- The Court could have constituted a Bench of five judges to take a formal call on whether the judgment required express overruling. Alternatively, the Court could have treated its earlier verdict as a ruling rendered per incuriam; that is, as a decision that was rendered in ignorance of binding precedent and law.
- How then, one might ask, could the Court have granted a temporary suspension of the provision? This the Bench did based on the Union government’s affidavit indicating a willingness to re-examine Section 124A.



- The affidavit allowed the judges to temporarily halt their exercise of judicial review and to issue instead an interim order of the present kind: where the provision will be kept in abeyance until the Government, and Parliament, take a final call on the matter.
- To be sure, the Government has offered no plain pledge on what it might eventually choose to do. This only means that should the state choose to retain the law the Court can still step in.
- In the long run, the decision in Kedar Nath Singh will require a clear disavowal. But in nullifying Section 124A, albeit for the present, the Court has provided provisional relief — allowing those accused of the offence to both seek bail in terms of the order, and to have their trials frozen.
- “The essence of democracy,” as Munshi put it in the Constituent Assembly “is criticism of government.” The sedition law disregards this core spirit. It criminalises censure and opposition and it enervates, to the point of exhaustion, the basic structure of a democratic republic.

What the laws must have

- If we have indeed seen the back of Section 124A we must see it as a success for freedom.
- But this result will be meaningless if our governments are allowed to replicate their use of sedition through the invocation of other statutes, on equally baseless grounds — various preventive detention laws and the Unlawful Activities (Prevention) Act, among others, have been repeatedly deployed as a means not merely to protect the country’s security but also to crack down on genuine acts of peaceful dissent and opposition.
- To protect our democracy, we must ensure that the constitutional guarantees to personal liberty and freedom do not go in vain. For that, each of our penal laws must be animated by a concern for equality, justice, and fairness.

Pardon and remission: who grants them?

(Source: [The Hindu](#))

Context: *The Supreme Court has reserved orders on the question whether a Governor can refer the State government’s advice for granting remission to life convicts to the President for a decision. The court is examining a petition from A.G. Perarivalan, one of the life convicts in the Rajiv Gandhi assassination case, questioning the delay in his release even after the Tamil Nadu government, in 2018, recommended the release of all seven convicts in the case under Article 161 of the Constitution. The Governor, instead of acting on the recommendation, referred it to the President. In the course of the arguments, the Additional Solicitor-General of India K.M. Nataraj contended that only the President, under Article 72 of the Constitution, could consider a claim for pardon or remission, and not the State Governor, if the offence involved was based on a parliamentary law.*

What is the scope of the pardon power?

- Both the President and the Governor have been vested with sovereign power of pardon by the Constitution, commonly referred to as mercy or clemency power.
- Under Article 72, the President can grant pardons, reprieves, respites or remissions of punishment or suspend, remit or commute the sentence of any person convicted of any offence in all cases where the punishment or sentence is by a court-martial, in all cases where the punishment or sentence is for an offence under any law relating to the Union government’s executive power, and in all cases of death sentences.
- It is also made clear that the President’s power will not in any way affect a Governor’s power to commute a death sentence.
- Under Article 161, a Governor can grant pardons, reprieves, respites or remissions of punishment, or suspend, remit or commute the sentence of anyone convicted under any law on a matter which comes under the State’s executive power.

What is the difference between statutory power and constitutional power?

- The Code of Criminal Procedure (CrPC) provides for remission of prison sentences, which means the whole or a part of the sentence may be cancelled.
- Under Section 432, the ‘appropriate government’ may suspend or remit a sentence, in whole or in part, with or without conditions.
- This power is available to State governments so that they may order the release of prisoners before they complete their prison terms. Under Section 433, any sentence may be commuted to a less one by the appropriate government.
- However, Section 435 says that if the prisoner had been sentenced in a case investigated by the CBI, or any agency that probed the offence under a Central Act, the State government can order such release only in consultation with the Central government.
- In the case of death sentences, the Central government may also concurrently exercise the same power as the State governments to remit or suspend the sentence.
- Even though they appear similar, the power of remission under the CrPC is different from the constitutional power enjoyed by the President and the Governor.
- Under the CrPC, the government acts by itself. Under Article 72 and Article 161, the respective governments advise the President/Governor to suspend, remit or commute sentences.
- Despite the fact that it is ultimately the decision of the government in either case, the Supreme Court has made it clear that the two are different sources of power.
- In *Maru Ram etc. vs Union of India* (1980), the Supreme Court said: “Section 432 and Section 433 of the Code are not a manifestation of Articles 72 and 161 of the Constitution but a separate, though similar, power.”
- In this case, a Constitution Bench upheld the validity of Section 433A of CrPC, which was introduced in 1978, to prevent the premature release of some life convicts before they spend 14 years in jail.
- It said that in cases in which the death punishment was available in law, but a person was only given a life term, and in cases in which death sentences were commuted to life, such a prisoner cannot be released unless he had completed 14 years.
- The court also reiterated that life sentence meant imprisonment for life until the last breath, unless remitted by the government.
- This was also a landmark decision in that it declared that the President and Governor do not independently exercise their power when disposing of mercy petitions or pleas for remission or commutation, but only on the advice of the appropriate governments. This principle was reiterated in *Kehar Singh* (1988).

What is the issue in the Rajiv Gandhi assassination case?

- Seven persons were convicted by the Supreme Court in its May 1999 final verdict in the Rajiv Gandhi assassination case. Of these, four — Sriharan alias Murugan, Nalini, Perarivalan and Santhan — were given the death penalty.
- The other three — Robert Payas, Jayakumar and Ravichandran — were sentenced to life terms.
- In 2000, the Governor commuted the death sentence of Nalini to one of life, based on a recommendation by the Cabinet. The remaining three remained on death row and their mercy petitions were pending with the President.
- In 2014, the Supreme Court commuted the sentences of Sriharan, Perarivalan and Santhan to life terms. Immediately, the then Chief Minister Jayalalithaa decided to remit their sentences.
- The State government wrote to the Centre, seeking its opinion within three days. It had to do so as under Section 435 of the CrPC, the State had to consult the Centre, as it was a case probed by the CBI.

- However, the Centre challenged the State government's decision in the Supreme Court and obtained a stay.
- Questions arising from the controversy were settled by a Constitution Bench, which said the State government could not release them without the Centre's concurrence as the Union government's opinion had primacy in the matter.
- Also, it made it clear that its opinion was limited to statutory remission proceedings under the CrPC, and that "the constitutional power under Articles 72 and 161 will remain untouched." The Union Home Ministry formally rejected the plea for remission in June 2018.
- In September 2018, the State government decided to invoke Article 161 of the Constitution.
- It advised the Governor that the remainder of the life term of the seven convicts be remitted so that they could be released. However, in the absence of a time-frame for the Governor to act, nothing was known about it for a long time.
- Nearly three years later, it became known that the Governor has referred the question to the President. The immediate constitutional question is whether the Governor can make such a reference to the President.
- The other issue that arises is whether the primacy accorded to the Centre's opinion under the CrPC in this particular case can be extended even to remission that may be granted by the Governor under Article 161.

The confusion over the status of the Assam NRC

(Source: [The Hindu](#))

Context: A member of one of Assam's functional 100 Foreigners' Tribunals (FTs) had on May 10 written to Hitesh Dev Sarma, the State Coordinator of the National Register of Citizens (NRC), asking him to stop interfering in the lawful functioning of the tribunals. This letter was in response to Mr. Sarma's April 18 letter to all the FT members not to treat the NRC as "final" while judging the nationality of a person suspected to be a non-citizen.

What is the NRC and when did it start?

- The NRC was born out of independent India's first census in 1951, entailing the transfer of data from the Census slips. All States were mandated to compile an NRC but it was done only in Assam.
- The intention behind such an exercise in Assam was to prepare a village-based inventory of residents in view of the resistance from the State — then undivided — to house post-Partition refugees.
- The fear of the indigenous people of being outnumbered by "illegal immigrants" during and after the 1971 Bangladesh War led to the Assam Agitation from 1979 to 1985. The demand for updating the 1951 NRC to eject foreigners from Assam was raised during the agitation.
- The agitation ended with the signing of the Assam Accord in August 1985. The accord prescribed March 24, 1971, the eve of the Bangladesh War, as the cut-off date for detecting, detaining and deporting foreigners.
- This date was incorporated in the NRC updating exercise that began in 2014 under the supervision of the Supreme Court.
- People listed in the 1951 NRC and their descendants had a comparatively smooth inclusion in the complete NRC draft published on August 31, 2019.
- This draft excluded 19.06-lakh out of the 3.3 crore people who had applied for inclusion.

What was the trigger of the debate over its status?



- In 2021, Mr. Sarma submitted an affidavit at the Gauhati High Court, referring to the August 2019 NRC as a “supplementary list” and not the “final NRC” and sought a re-verification.
- In September that year, an FT member in southern Assam’s Karimganj district declared a doubtful migrant as Indian while observing that members of his family figured in the August 2019 list referred to as the “final NRC”.
- The list was also being referred to as final at various fora. On April 18, Mr. Sarma wrote to the FTs asking them not to depend on the NRC to adjudicate cases of citizenship.
- “It has been observed that while disposing of FT cases, various documents relating to NRC are being called from the District Registrar of Citizens Registration (Deputy Commissioner) and the State Coordinator, NRC, Assam. In this regard, I am to inform you that the Final NRC is yet to be published by the Registrar General of Citizens Registration,” he wrote.
- He also said that the NRC was erroneous due to wrong data entry and faulty process adopted in the updating exercise, as mentioned in the interlocutory application he had submitted before the Supreme Court, which is yet to hear the matter.
- In FT member, choosing to be anonymous, insisted in his reply to Mr. Sarma on May 10 that the NRC published in accordance with relevant clauses of the Citizenship Rules of 2003, was final.
 - The member also cited the official website where the NRC is mentioned as final and an August 2019 press communique by his predecessor, Prateek Hajela, “clearly mentioning” that the NRC was final.
 - “The State Coordinator cannot propagate his wrong understanding of law, rules, notifications and orders of the Supreme Court about the finality of NRC... he should withdraw his letter and stop interfering in the lawful functioning of the Foreigners’ Tribunals which is beyond your jurisdiction and limits of power,” the FT member said.
 - Judges, advocates and bureaucrats with judicial experience are appointed as members of the quasi-judicial body under the Foreigners’ Tribunal Act, 1941, and Foreigners Tribunal Order, 1964.

What, then, is the status of the NRC?

- According to the State Coordinator, only the office of the Registrar General of India has the authority to publish the final NRC and a notification in this regard is yet to be issued.
- But the FT members, instead of looking at cases of people declared foreigners independently of the NRC, have been passing judgments by viewing the NRC as final, he said adding that Mr. Hajela’s statement was “misleading”.
- NRC officials also pointed out that the updating exercise still has some stages to go.
- The next stage is the issuance of a rejection slip to each of the 19.06 lakh people excluded from the draft NRC.
- After receiving such a slip with an explanation of why he or she has been left out of the NRC, a person would have to approach the FT concerned within 120 days with documents to prove his or her citizenship.
- The FT would then adjudge the person as a ‘citizen’ or ‘foreigner’ for inclusion or rejection in the NRC.

What is the stand of the Assam government on the NRC?

- The BJP-led Assam government has stuck to its stand that the NRC was erroneous.
- They have said that at least 20% of the enlisted names in districts bordering Bangladesh and 10% in the remaining districts need re-verification.
- The government has not accepted the list as final and has decided to approach the Supreme Court for a “corrected” NRC.
- The government, however, has decided to push for unfreezing the biometrics of 21 lakh people, collected during the updating exercise, to enable them to get Aadhaar cards, which can be locked again if a person is eventually marked as a non-citizen.

The neighbourhood in turmoil, lessons for India

(Source: [The Hindu](#))

Context: *In late 2016, a senior Indian government official, in a meeting with the envoy of a neighbouring country, spelt out the consequences that the country would face if it crossed the Narendra Modi government's newly "muscular foreign policy". At the time, the Government had put Pakistan on notice on terror attacks, and cancelled Foreign Secretary-level talks; in Sri Lanka, the Rajapaksa government, that had been seen cozying up to China was voted out, with some reports that Indian intelligence played a role in facilitating opposition talks; and in Nepal, Prime Minister K.P. Sharma Oli's coalition government had fallen apart, with a similar nudge reported from New Delhi. The message the official conveyed was that New Delhi would use all its levers to prevail over any uncooperative South Asian neighbour. However, the tough messaging did not find much favour over time. By the Modi government's second term, it had made peace with a much more consensual, conciliatory policy in the neighbourhood — visibly improving ties with each country (minus Pakistan) through high-level visits, extending development aid and lines of credit, and enabling a rush of soft power diplomacy.*

A change in approach

- The contrast between India's response to the events in 2016 to the present is stark, after five neighbouring democracies underwent non-electoral changes at the top, namely Myanmar, Nepal, Afghanistan, Pakistan and Sri Lanka.
 - The first difference is that New Delhi has not been held responsible in any of its neighbouring capitals for attempting to interfere in their political processes.
 - Second, South Block has abandoned its uniformly muscular "one size fits all" approach to the region.
- While in Myanmar, the Modi government continued engagement and even strengthened ties with the military junta that overthrew the government led by Aung San Suu Kyi's National League for Democracy, in Afghanistan it severed ties with the Taliban that took power in Kabul by force after Afghan President Ashraf Ghani left the country.
- In Nepal where Prime Minister Sher Bahadur Deuba came to power after the Supreme Court dismissed K.P. Oli, and Sri Lanka, where public protests forced Prime Minister Mahinda Rajapaksa to resign and President Gotabaya Rajapaksa to appoint rival and Opposition leader Ranil Wickremesinghe as the new Prime Minister, New Delhi has been largely supportive of the processes.
- Whereas in Pakistan, it has virtually ignored the swearing-in of Prime Minister Shehbaz Sharif after Imran Khan lost the vote of confidence.

People more than leaders

- A second lesson that seems to have been learnt is that New Delhi's messaging now is focused on people in the neighbourhood rather than just those in power.
- In Afghanistan, for example, the Modi government spent months in careful negotiation with Pakistani officials to ensure it could send 50,000 MT of wheat meant for the Afghan people, despite the fact that it has no diplomatic engagement with either Islamabad or Kabul otherwise.
- In Sri Lanka, a Ministry of External Affairs statement said that India would "always be guided by the best interests of the people of Sri Lanka expressed through democratic processes", a subtle pitch both to the people and to democratic processes in the region.
- A third lesson is perhaps the toning down of rhetoric on domestic issues in the neighbourhood — the Government's public reaction to Durga Pooja violence against Bangladesh's Hindu minority last year was much more nuanced than its messaging during the push ahead for the Citizenship (Amendment) Act in 2019.



- Some have even suggested that the continued delay in framing rules for the CAA since then has more to do with concern for ties with Dhaka than with the COVID-19 pandemic.

A neutral position will not do

- There are, however, other lessons that New Delhi must learn from the regime changes in the neighbourhood, and some of them apply to the Indian context as well.
- This is after all, the Indian subcontinent, set in the Indian Ocean, and what happens here cannot leave India untouched.
- Therefore, a silent or “neutral” position cannot mark the Modi government’s response to the changes in the way it has with Russia’s invasion of Ukraine or China’s moves in Hong Kong or the South China Sea region.
- India faces the direct impact of almost every South Asian country in crisis, in terms of the need for aid and loans or a possible influx of refugees, as movements that develop in one neighbouring country are often mirrored in another.
- The first lesson to be learnt is that populism does not pay in the long run.
 - While the potent combination of hyper-nationalism, religious majoritarianism, and a strident anti-elitism can bring “men of the masses” such as Mahinda Rajapaksa, K.P. Oli, and Imran Khan to power (as they promise an alternative to corrupt, dynasti regimes), it does not necessarily keep them there.
 - It is a mistake for any government to conflate an electoral win and a mandate for governance with a carte blanche for ruling a country.
- The second is that the popularity of a leader can decline sharply and suddenly for one or a combination of reasons: K.P. Oli won a landslide victory in 2017 where his Left Alliance secured majorities in both houses, and formed governments in six of seven provinces; Imran Khan won all five National Assembly seats he fought in the 2018 elections, and while his party did not win a majority of seats, it won the popular vote; and the Rajapaksa-led Sri Lanka People’s Party (SLPP) ruling coalition won 150 of 225 parliamentary seats in 2020.
 - That these popular mandates could be cast aside in just a few years is a stark reminder that nothing is forever, especially in a democracy.
 - It is also clear that during the crises that Nepal, Pakistan and Sri Lanka faced, the leaders who stepped into the breach may not have had the same political prowess or oratory presence as the leaders they replaced, but were acceptable both domestically and internationally because they had experience and education on their side.
 - Mr. Deuba became Prime Minister for the fifth time, for example, Mr. Sharif had the longest tenure as Chief Minister of Pakistan’s Punjab in three terms before he became Prime Minister, and Ranil Wickremesinghe was appointed Prime Minister for the sixth time.
- The next lesson is one that United States President George H.W. Bush learned in 1992 despite the Iraq war and his pitch to patriotism, as Bill Clinton defeated him in an election where the big slogan was “It’s the economy, stupid”.
 - In Pakistan, Nepal and Sri Lanka, the defeat of populists has come not so much at the hand of the Opposition parties, but by the slowdown in growth, jobs and rising inflation.
 - India had already seen six successive quarters of straight losses in December 2019, and most of the neighbourhood was floundering as well, when COVID-19 was first reported.
 - In the years that followed, the COVID-19 pandemic enforced lockdowns, and the resultant slowdown in the global economy made GDP figures in the region plummet.
 - More recently, Russia’s invasion of Ukraine and sanctions by the West have made food and fuel prices soar. In such a situation, the change in power in these three countries took only a small push, from the military, the courts, or from street protests.
 - New Delhi must not only study the causes of the economic mismanagement that brought change in the neighbourhood but must also survey the impact of new vulnerabilities on smaller

neighbouring countries that could be exploited by global powers as they seek a more direct influence in the region.

- Given the common challenges the region faces, New Delhi must find newer ways to energise regional groupings such as the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) and the Bangladesh, Bhutan, India, Nepal (BBIN) Initiative, and even to reconsider SAARC, in order to discuss shared approaches to reviving tourism and exports, supporting South Asian expatriate labour abroad, and building common pools of food and fuel stocks to soften inflationary blows on the South Asian economy.
- Finally, the Modi government must learn from the lessons in political culture that let down the “alpha leaders” in neighbouring democracies.
 - One of the common threads in each of the governments (Rajapaksa, Oli and Khan) was an abhorrence for consensus building.
 - In various ways, each of them turned their opposition into “the enemy”, and froze out the media, non-governmental organisations, and any voting constituency other than their own.
 - Nations, especially democracies run on many engines — not just the single monolithic one of the party or people in power.
- As New Delhi essays its role as a regional leader, the Government would be wise to not only study the impact of changes in the neighbourhood on Indian policy but also to look into the mirror the neighbours hold up to India, for a better understanding of its future challenges within the country.

GS III

Why are India's foreign exchange reserves falling?

(Source: [The Hindu](#))

Context: *The Indian rupee hit an all-time low against the U.S. dollar this week weakening past the 77 rupees to a dollar mark and selling at 77.63 against the dollar on Thursday. Many analysts expect the rupee to weaken further in the coming months to hit the 80 rupees to a dollar mark. In fact, the International Monetary Fund expects the rupee to weaken past the 94 rupees to a dollar mark by FY29.*

What is happening?

- The Indian rupee has been witnessing a steady decline this year, losing almost 4% against the U.S. dollar since the beginning of 2022.
- India's forex reserves have also dropped below \$600 billion, plunging by about \$45 billion since September 3, 2021, when forex reserves stood at an all-time high of \$642 billion.
- According to Reserve Bank of India data, India's forex reserves dropped by \$1.774 billion for the week ended May 6 to \$595.954 billion. The drop in India's forex reserves is believed to be largely due to steps taken by the Reserve Bank of India to support the rupee.
- RBI officials, however, have noted that the drop in forex reserves is due to a fall in the dollar value of assets held as reserves by the RBI. For instance, if a portion of the reserves are in euros and the euro depreciates against the dollar, this would cause a drop in the value of forex reserves.
- It should be noted that, as a matter of policy, the Indian central bank has usually tried to slow down or smoothen, rather than reverse or prevent, the fall in exchange value of the rupee against the U.S. dollar. The aim of the RBI's policy is to allow the rupee to find its natural value in the market but without undue volatility or causing unnecessary panic among investors.
- State-run banks are usually instructed by the RBI to sell dollars in order to offer some support to the rupee. By thus selling dollars in the open market in exchange for rupees, the RBI can improve demand for the rupee and cushion its fall.

What determines the rupee's value?

- The value of any currency is determined by demand for the currency as well as its supply. When the supply of a currency increases, its value drops.
- On the other hand, when the demand for a currency increases, its value rises. In the wider economy, central banks determine the supply of currencies, while the demand for currencies depends on the amount of goods and services produced in the economy.
- In the forex market, the supply of rupees is determined by the demand for imports and various foreign assets.
- So, if there is high demand to import oil, it can lead to an increase in the supply of rupees in the forex market and cause the rupee's value to drop. The demand for rupees in the forex market, on the other hand, depends on foreign demand for Indian exports and other domestic assets.
- So, for instance, when there is great enthusiasm among foreign investors to invest in India, it can lead to an increase in the supply of dollars in the forex market which in turn causes the rupee's value to rise against the dollar.

What's causing the rupee to lose value against the dollar?

- Since March this year, the U.S. Federal Reserve has been raising its benchmark interest rate causing investors seeking higher returns to pull capital away from emerging markets such as India and back into the U.S.



- This, in turn, has put pressure on emerging market currencies which have depreciated significantly against the U.S. dollar so far this year.
- Even developed market currencies such as the euro and the yen have depreciated against the dollar and the dollar index is up more than 8% so far this year.
- In fact, some analysts believe that the RBI's surprise decision to raise rates earlier this month may have simply been to defend the rupee by preventing any rapid outflow of capital from India.
- In 2013, the rupee fell 15% against the dollar in about three months after investors were spooked by the U.S. Federal Reserve's decision to trim down its bond purchase programme that had helped keep long-term interest rates low.
- Moreover, India's current account deficit, which measures among other things the gap between the value of imports and exports of goods and services, is expected to hit a 10-year high of 3.3% of gross domestic product in the current financial year as predicted by Morgan Stanley.
- This means that India's import demand amid rising global oil prices is likely to negatively affect the rupee unless foreign investors pour sufficient capital into the country to fund the deficit.
- But foreign investors are unlikely to plough capital into India when investment yields are rising in the U.S. Yields on U.S. 10-year Treasuries, for instance, have risen from around 0.5% in mid-2020 to over 3% earlier this month.
- The rupee, it should also be noted, has consistently lost value against the U.S. dollar for several decades now. A major reason for this has been the consistently higher domestic price inflation in India.
- Higher inflation in India suggests that the RBI has been creating rupees at a faster rate than the U.S. Federal Reserve has been creating dollars.
- So, while capital and trade flows gain a lot of attention in discussions on the rupee's value, the difference in the rates at which the U.S. Federal Reserve and the RBI regulate the supply of their currencies may play a much larger role in determining the value of the rupee over the long run.

What lies ahead?

- Analysts believe that, over the long run, the rupee is likely to continue to depreciate against the dollar given the significant differences in long-run inflation between India and the U.S.
- At the moment, as the U.S. Federal Reserve raises rates to tackle historically high inflation in the country, other countries and emerging markets in particular will be forced to raise their own interest rates to avoid disruptive capital outflows and to protect their currencies.
- It should be noted that inflation in the U.S. hit a 40-year high of 8.5% in March.
- The RBI too has been trying to rein in domestic consumer price inflation, which hit a 95-month high of 7.8% in April, by raising rates and tightening liquidity.
- As interest rates rise across the globe, the threat of a global recession also rises as economies readjust to tighter monetary conditions.

Improving cold chain systems

(Source: [The Hindu](https://www.thehindu.com))

Context: *The pandemic has taught us a great deal. We have all become familiar with terms such as variants, waves, vaccine supply chains and quarantine. It has also encouraged an interest in preventive health technology, especially in vaccines. This interest is understandable, given that India accounts for the second highest caseload of COVID-19 globally. Once the vaccines were available, the nation had to take on the task of rolling out one of the largest vaccination drives in the world; this of course, is not new to India.*

Details:

- India's Universal Immunisation Programme (UIP), launched in 1985 to deliver routine immunisation, showcased its strengths in managing large-scale vaccine delivery.
- This programme targets close to 2.67 crore newborns and 2.9 crore pregnant women annually.
- To strengthen the programme's outcomes, in 2014, Mission Indradhanush was introduced to achieve full immunisation coverage of all children and pregnant women at a rapid pace — a commendable initiative.
- But the pandemic reminded us that vaccines alone do not save lives, vaccination does.
- While we have, over the years, set up a strong service delivery network, the pandemic showed us that there were weak links in the chain, especially in the cold chain, which needs to be robust and seamless.

Cold chain management

- The success of any sustainable vaccination programme relies on many factors. A key factor is cold chain management because when this fails, the potency or effectiveness of the vaccine is wasted.
- Nearly half the vaccines distributed around the world go to waste, in large part due to a failure to properly control storage temperatures.
- In India, close to 20% of temperature-sensitive healthcare products arrive damaged or degraded because of broken or insufficient cold chains, including a quarter of vaccines.
- Wastage has cost implications and can delay the achievement of immunisation targets.
- Here, India has strong foundations to build upon. India's UIP comprises upwards of 27,000 functional cold chain points of which 750 (3%) are located at the district level and above; the remaining 95% are located below the district level.
- The COVID-19 vaccination efforts relied on the cold chain infrastructure established under the UIP to cover 87 crore people with two doses of the vaccine and over 100 crore with at least a single dose.
- This effort was supported by the government's cloud-based digital platform Co-WIN, which helps to facilitate registration, immunisations and appointments, and issues digital vaccine certificates, highlighting the benefits of digitisation.
- The Health Ministry has been digitising the vaccine supply chain network in recent years through the use of cloud technology, such as with the Electronic Vaccine Intelligence Network (eVIN).
- Developed with support from Gavi, the Vaccine Alliance, and implemented by the UN Development Programme through a smartphone-based app, the platform digitises information on vaccine stocks and temperatures across the country.
- This supports healthcare workers in the last mile in supervising and maintaining the efficiency of the vaccine cold chain.
- The role played by supportive infrastructure for cold chain such as a regular supply of electricity cannot be underplayed. In this regard, there is a need to improve electrification, especially in the last mile, for which the potential of solar-driven technology must be explored to integrate sustainable development.
 - For instance, in Chhattisgarh, 72% of the functioning health centres have been solarised to tackle the issue of regular power outages. This has significantly reduced disruption in service provision and increased the uptake of services.

Building back better and stronger

- COVID-19, which disrupted supply chains across countries and in India too, marks an inflection point in the trajectory of immunisation programmes.
- As we recover from the pandemic, there is an opportunity for us to pivot to newer mechanisms that can help develop unbroken and resilient cold chain systems and thus augment the immunisation landscape.
- Going forward, this will be the only way to ensure access to the last mile with life-saving vaccines, in time.
- As we reflect on the learnings from the pandemic, it is imperative that we look towards a future where the critical arteries that comprise the supply chain of immunisation facilities be strengthened.

- India has pioneered many approaches to ensure access to public health services at a scale never seen before.
- Robust cold chain systems are an investment in India's future pandemic preparedness; by taking steps towards actionable policies that improve the cold chain, we have an opportunity to lead the way in building back better and stronger.

Linking nature and humanity

(Source: [The Hindu](#))

Context: According to the Global Assessment Report on Biodiversity and Ecosystem Services released in 2019 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) at the UNESCO headquarters in Paris, the main global drivers of biodiversity loss are climate change, invasive species, over-exploitation of natural resources, pollution and urbanisation.

The earth is under strain

- Because of our collective excesses, the ecological carrying capacity of planet earth has largely been exceeded.
- This trend needs to be redressed, with cleaner air, high quality drinking water, and enough food and healthy habitats to ensure that ecosystem services continue to benefit humanity without critically affecting nature's balance.
- Whether we look at nature from an environmental, from a cultural or even from a religious point of view, it is our responsibility and clearly in our interest to respect the environment.
- In fact, the possibilities exist, and all is not lost.
- In the last 50 years or so, much has been accomplished for the protection of nature, including the establishment of conservation areas, and a number of international conventions have been signed and ratified.

Biosphere reserves are key

- One of the best mechanisms that has been created is the World Network of Biosphere Reserves, created in 1971 by UNESCO.
- Biosphere reserves are places where humans live in harmony with nature, and where there is an effective combination of sustainable development and nature conservation.
- They represent pockets of hope and proof that we are not inexorably headed towards a doomsday ecological scenario, provided we take appropriate action.
- In South Asia, over 30 biosphere reserves have been established. The first one was the Hurulu Biosphere Reserve in Sri Lanka, which was designated in 1977 and comprises 25,500 hectares within the tropical dry evergreen forest.
- In India, the first biosphere reserve was designated by UNESCO in 2000 within the blue mountains of the Nilgiris.
- It stretches across the States of Tamil Nadu, Karnataka and Kerala. The network has gone from strength to strength, and it now counts 12 sites, with Panna, in the State of Madhya Pradesh, as the latest inscription in 2020.
- We need many more biosphere reserves and pockets of hope, and the region offers countless options.

Diverse systems

- South Asia has a very diverse set of ecosystems. To begin with, Bhutan, India and Nepal combined have thousands of glaciers, surrounded by lakes and alpine ecosystems.

- The Khangchendzonga Biosphere Reserve, established in 2018, is a good model. It includes some of the highest ecosystems in the world, with elevations up to 8,586 metres. The reserve is home to orchids and rare plant species.
- At the same time, more than 35,000 people live there. Their main economic activities are crop production, animal husbandry, fishing, dairy products and poultry farming.
- Bangladesh, India, the Maldives, and Sri Lanka all have extensive coastlines, with coral reefs and mangrove forests. These areas are exposed to extreme weather events (storms, floods, droughts), and sea-level rise.
- The Maldives are recognised as the lowest-lying country in the world, with a mere elevation of 1.5 metres above the high tide mark.
- Together with UNESCO, the archipelago has embarked on a plan to establish pilot sites for the conservation and restoration of coastal ecosystems, and to enhance the population's knowledge on climate change adaptation. Separately, three biosphere reserves have already been created in the Maldives.

Run on science-based plans

- UNESCO Biosphere Reserves have all developed science-based management plans, where local solutions for sustainable human living and nature conservation are being tested and best practices applied.
- Issues of concern include biodiversity, clean energy, climate, environmental education, and water and waste management, supported by scientific research and monitoring. The aim is to detect changes and find solutions to increase climate resilience.
- All biosphere reserves are internationally recognised sites on land, at the coast, or in the oceans. Governments alone decide which areas to nominate. Before approval by UNESCO, the sites are externally examined.
- If approved, they will be managed based on an agreed plan, reinforced by routine checks to ensure credibility, but all remain under the sovereignty of their national government.
- Some of the countries in South Asia do not yet have any or enough biosphere reserves. In most if not all cases, the political will is certainly there but there is a lack of know-how and financial resources.
- Of course, more financial support from richer nations and from the private sector would be desirable for establishing biosphere reserves in these countries.

The priority countries

- Bangladesh, Bhutan, and Nepal are on the priority list of UNESCO, because they do not yet have any biosphere reserves.
- Their governments are already working on their first nomination files. Our organisation also believes that it would be important to increase the number of biosphere reserves in India, the Maldives and Sri Lanka.
- The point is that if these pockets of hope can expand, with at least one biosphere reserve per country, and with more and larger sites covering the terrestrial surface, including coastal areas with their offshore islands, it will give the realisation to millions of people that a better future is truly possible, one where we can truly live in harmony with nature.
- On May 22 and on the occasion of the International Day for Biological Diversity, let us do what is right. Now is the time to act for biodiversity.

Current Affairs Quiz

1) Consider the following statements:

1. There is no universal agreement on the size of microplastic.
2. Polypropylene and polyethylene are the only two common microplastics found in the human blood.

Which of the above statements is/are incorrect?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

The commonly used plastic polymers include polyethylene terephthalate (PET), polyethylene (used in making plastic carry bags), polymers of styrene (used in food packaging), poly (methyl acrylate), and polypropylene.

2) Consider the following statements:

1. According to the Criminal Procedure (Identification) Bill, 2022, it compels individuals convicted and accused of offenses, to share personal biological data.
2. All accused who have less than seven years of imprisonment can refuse to take their biological samples.

Which of the above statement is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

The Bill states that except for those accused of offences committed against a woman or a child, or for any offence punishable with imprisonment for a period that is not less than seven years, a person accused of any other offence can refuse to allow the taking of his biological samples under the Bill.

3) Which of the following statements is/are correct regarding India Hypertension Control Initiative (IHCI)?

1. It is implemented in collaboration with WHO, to strengthen the hypertension treatment component at the community level.
2. Hypertension is defined as having a systolic blood pressure level greater than or equal to 90mmHg and a diastolic blood pressure level greater than or equal to 140mmHg.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

Hypertension is defined as having a systolic blood pressure level greater than or equal to 140 mmHg or a diastolic blood pressure level greater than or equal to 90 mmHg or/and taking anti-hypertensive medication to lower his/her blood pressure.

4) Which of the following are the conditions that helps in making forecasts about the South West Monsoon in India:

1. Sea Surface Temperature of Equatorial South India Ocean.
2. Mean Sea Level Pressure in West Asia.

3. Surface air temperature over northwest Europe.
4. Sea Surface Temperature (SST) gradient between the North Atlantic and the North Pacific.
5. The cold water volume of the equatorial Pacific Ocean.

Select the correct answer code:

- a. 2, 3 and 5 only
- b. 1, 3 and 4 only
- c. 2, 4 and 5 only
- d. 1, 2, 3, 4 and 5

Answer : b

5) Which of the following statements is/are correct about RNA granules?

1. They are produced by evolutionary divergent eukaryotes, including yeast, mammals, and plants.
2. They contain ribosomal subunits, scaffold proteins, and RNA binding proteins.
3. They control the localization, stability, and translation of the RNA cargo.

Which of the above statement(s) is/are correct?

- a. 1 and 3 only
- b. 1 and 2 only
- c. 2 and 3 only
- d. 1, 2 and 3

Answer : d

6) Consider the following statements with respect to power of pardoning:

1. In the case of death sentences, the Central government may also concurrently exercise the same power as the State government to remit or suspend the sentence.
2. The power of remission under the Code of Criminal Procedure (CrPC) is different from the constitutional power enjoyed by the President and the Governor.
3. Under CrPC the government acts by itself, while under Articles 72 and 161, the respective governments advise the President/Governor to suspend, remit or commute sentences.

Which of the above statements is/are correct?

- a. 1 and 3 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1, 2 and 3

Answer : d

7) Which of the following statements is/are correct with respect the Places of Worship Act?

1. It provides for the maintenance of the religious character of any place of worship as it existed on the 15th of August 1947.
2. Section 3 of the act, permits the conversion in full or part of a place of worship of any religion into a place of worship of a different religion.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

Section 3 of the Act bars the conversion, in full or part, of a place of worship of any religious denomination into a place of worship of a different religious denomination — or even a different segment of the same religious denomination.

8) Which of the following are the goals of the Seoul Forest Declaration?

1. Investment in forest and landscape restoration globally must be at least tripled by 2030.

2. Healthy, productive forests must be maintained to reduce the risk of, and improve responsiveness to, future pandemics.
3. Halt and reverse forest loss and land degradation by 2030 while delivering sustainable development.
4. To Halve the rate of deforestation by 2030 and end it by 2040.

Select the correct answer code:

- a. 1, 3 and 4 only
- b. 3 and 4 only
- c. 1 and 2 only
- d. 1, 2, 3 and 4

Answer : c

9) Consider the following statements:

1. Pullulan polymer is a biomaterial chain of glucose that is secreted by a fungus into the medium on which it is growing.
2. It is a non-toxic, non-mutagenic, and non-immunogenic material used in the food, cosmetics, and pharmaceutical industry.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : c

10) Which of the following statements is/are correct with respect to transit anticipatory bail?

1. The transit anticipatory bill is defined under the Code of Criminal Procedure (CrPC) under Section 438.
2. It refers to a person seeking anticipatory bail from the jurisdiction of one court to a court of another jurisdiction.
3. The 41st Law Commission Report recommended the provision of Anticipatory bail to safeguard the right to life and personal liberty of a person under Article 21 of the Constitution.

Which of the above statements is/are correct?

- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1, 2 and 3

Answer : b

No legislation or law defines 'transit or anticipatory bail' in definitive or specific terms, however, the roots of the concept of transit bail can be traced back to the Code of Criminal Procedure (CrPC).

11) Which of the following statements is/are correct about the United Nations Convention to Combat Desertification (UNCCD)?

1. The convention addresses only the arid, semi-arid, and dry sub-humid areas, known as the drylands.
2. It is the only legally binding international agreement linking environment and development to sustainable land management.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : c

12) Consider the following statements:

1. Sudden Infant Death Syndrome is the sudden, unexpected and unexplained death of an apparently healthy baby.
2. A low level of the Butyrylcholinesterase (BChE) enzyme affects a sleeping infant's ability to wake up or respond to their environment.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : c

13) Which of the following statements are correct about the findings of the National Family Health Survey (NFHS) for the period of 2019-2021?

1. The number of married people (age 15-49) who want more sons than daughters is several times the number who want more daughters than sons.
2. The total Fertility Rate (TFR) has declined to 2.2 children per woman from 2.7 in the previous survey.
3. A married person who has at least one son is less likely to want more children than another married person whose existing children do not include a son.
4. Most Indians still believe an ideal family should include at least one daughter.

Select the correct answer code:

- a. 1, 2 and 3 only
- b. 1, 3 and 4 only
- c. 2, 3 and 4 only
- d. 1, 2, 3 and 4

Answer : b

14) Consider the following statements with respect The Lancet Commission on Pollution and Health report published recently:

1. According to the report, air pollution is most severe in the Indo-Gangetic Plain.
2. According to the report, India topped the air pollution death toll for the year 2019.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : c

15) Consider the following statements regarding the:

1. State of Inequality in India Report is released by Chairman, Economic Advisory Council to the Prime Minister.
2. The report compiles information on inequities only in sectors of health, education, household characteristics, and the labor market.
3. The indices used are income distribution and labor market dynamics, health, education, and household characteristics only.

Which of the above statements is/are correct?

- a. 3 only
- b. 1 only
- c. 2 and 3 only
- d. 1, 2 and 3

Answer : d

16) Which of the following statements are correct?

1. Inexplicable delay by the Governor in exercising powers under Article 161 is subject to judicial review.
2. Article 142 deals with complete justice and is an exclusive power of the Supreme Court of India.
3. Prohibitions on limitations on provisions contained in ordinary laws cannot, ipso-facto, act as prohibitions or limitations on the constitutional powers under Article 142.
4. The powers of the Supreme Court under article 142 are supplementary in nature, and cannot supplant substantive law.

Which of the above statements is/are correct?

- a. 1, 2, 3 only
- b. 2, 3, 4 only
- c. 1 and 2 only
- d. 1, 2, 3 and 4

Answer : d

17) Which of the following statements is/are correct regarding the Liberalised Remittance Scheme?

1. All resident individuals, including minors, are allowed to freely remit up to USD 2,50,000 per financial year.
2. It can be availed for any permissible current or capital account transaction or a combination of both.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : c

18) Consider the following statements:

1. The recent Conference of Parties of the United Nations Convention to Combat Desertification was concluded in Tuvalu which adopted 38 decisions including on tenure, migration and gender.
2. It hosted discussion on Great Green Wall initiative that aims to sequester 250 million tons of carbon and restore 100 million hectares of degraded land in 11 countries.
3. It is the first Conference of the Parties of the three Rio Conventions taking place in 2022, ahead of the COP27 of UNFCCC and COP15 of UN CBD.

Which of the statements given above is/are correct?

- a. 1 only
- b. 1 and 3 only
- c. 3 only
- d. 2 and 3 only

Answer : d

The 15th Conference of Parties (COP15) of the United Nations Convention to Combat Desertification (UNCCD), concluded May 20, 2022 in Abidjan, capital of Ivory Coast.

19) Consider the following statements:

1. India has recently test-fired its first indigenous air launched anti-ship missile recently.
2. It is a long-range missile that can be launched from a ship in the sea.

Which of the statements given above is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

It has a short range of 55 km and is set to replace the Navy's sea eagle missiles.

20) Regulation of all genetically engineered organisms comes under the purview of which of the following Act/Order?

- a. Genetically Engineered Organisms or Cells Rules, 1989
- b. The Biological Diversity Act, 2002
- c. Plant Quarantine (Regulation of Import into India) Order, 2003
- d. Food Safety And Standards Act, 2006

Answer : a

