



# VAJIRAM & RAVI

( Institute for Civil Services Examination )

## APRIL 2021

# *the* RECITALS

Explore Current Affairs Through Q&A



**Featured  
Articles**



**Mains  
Q & A**



**Prelims  
Q & A**



**Bridging  
Gaps**



*Freedom of Navigation Operation*

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## *From the Desk of the Director*

### **Dear Students**

The preparation of current affairs magazine is an evolutionary process as its nature and content keeps changing according to the demands of Civil Service Exam. As you are aware about the importance of current affairs for the prelims as well as mains exam, our aim is to follow an **integrated approach** covering all stages of examination from prelims to interview. Keeping these things in mind, we, at Vajiram and Ravi Institute, are always in the process of evolving our self so as to help aspirants counter the challenges put forward by UPSC.

In fulfillment of our objective and commitment towards the students, we have introduced some changes in our current affairs magazine. The CA Magazines, now with the name of “**The Recitals**”, will have four sections. These are:

1. **Feature Article:** As you are aware of the fact that civil service mains exam has become quite exhaustive and analytical, especially since 2013 after the change in syllabus, we have decided to focus on 2-3 topics every month that will provide an insight into the issue so as to help students understand the core of the issue. This will help in Essay writing as well as Mains Exam.
2. **Mains Q&A:** New students quite often struggle to find out that in what way the given topic is useful for them and in what form questions can be framed from the article. To help those students, we at Vajiram and Ravi have designed an innovative way to teach current affairs. Now, we will cover the current issues through questions and answers so as to make it more targeted towards exam. This will not just provide the information and analysis on current issues but will also help in learning the art of answer writing. Further the related information on the topics on which questions have been framed but that is outside the purview of answer will be given in the Box as ‘**Extra Mile**’.
3. **Prelims Q&A:** This section will contain prelims based MCQs that will test your diligence while reading the current issues. These MCQs will be of UPSC standard and will contain detailed explanation. Students are advised to attempt these MCQs honestly and read the Explanation carefully. The idea is to also provide students with a question bank of around 600 current affairs MCQs (50 Qs × 12 months = 600 Qs) just before their prelims examination, which will act as revision on issues spanning over the entire year.
4. **Bridging Gaps:** This section will contain miscellaneous topics which has not been covered through Q&A. That is why it is called Bridging Gaps, meaning the left-over topics.

So, the new magazine is a complete overhaul of what we have been doing for so long. We hope that the new beginning will be to the liking of students.

Thanks

Best Wishes

## *Freedom of Navigation Operation Conducted by US Navy*

The US Navy sent a warship **into India's exclusive economic zone (EEZ)** for a **freedom of navigation operation (FONOP)**, without seeking prior approval. The patrol came while US presidential climate envoy John Kerry was in the Indian capital on a three-day visit to push New Delhi to take stronger action on climate change.

### **Why US Conducted This Operation**

- The US Navy 7th Fleet had issued a press release in this regard. It said that US Navy had “**asserted navigational rights and freedoms**” inside India's EEZ.
- It had done so by **sailing the USS John Paul Jones**, a 9,000-tonne guided missile destroyer, through Indian **waters without requesting prior consent from New Delhi**.

### **What Is The Contention**

- US conducted the operation at approximately **130 nautical miles west of the Lakshadweep Islands**, inside India's exclusive economic zone.
- As per Indian law, any activity within 200 km nautical miles (which falls under EEZ or Indian waters) **needs prior permission**.
- The “prior consent” is the bone of contention between the two countries. US had said that India's claim in this regard is inconsistent with international law. It said the operation upheld the rights, freedoms, and lawful uses of the sea recognised in international law by challenging India's excessive maritime claims.
- As per India, this action is against the **1982 United Nations Convention on the Law of the Sea (UNCLOS)**.
- This law **does not authorise other states to carry out military exercises** or manoeuvres, in particular those involving the use of weapons or explosives, **without the consent of the coastal state” in either its EEZ or on the continental shelf**.

### **How Significant is the US Decision to Conduct the Patrol?**

- An analysis of FONOPs conducted by the US Navy over the years reveals that they have been **aimed at challenging many countries' maritime claims**, including partners and allies.
- **Between October 2019 and September 2020, the US challenged the maritime claims of 19 governments**, including Brazil, Japan, Malaysia, South Korea, Taiwan, Vietnam and mainland China.
- The US Navy conducted a similar FONOP in Sri Lanka's EEZ just days before the operation in Indian waters, and also challenged South Korea's excessive baseline claim on March 31.
- Hence, it can be said that US had been conducting such operations in the past. However, they have never announced it.

### Why US Announced This Publicly

- US, under Biden administration, want to **reiterate its role as a global leader**. Simply conducting such operations might not have been good enough for Washington.
- Under Trump, there was a criticism of the **US' inward-looking turn**. Hence, such public posturing through announcements was critical in this regard.

### Implications of This Incident

#### A. US is Making a Political Statement

- The US claims that such operations were “**not about one country nor are they about making political statements**”. However, this has been rejected by the analysts.
- Experts claim that the US picks and chooses against whom it conducts FONOPs. So far, **it had not conducted formal operations against Australia or Canada** “despite objecting to their ‘excessive’ claims”.

#### B. It Exposes India's Vulnerabilities to China

- There have already been **maritime run-ins between Beijing and New Delhi** – in December 2019, a Chinese survey ship was ejected from Indian waters. Indian fisherfolk have also complained to their government about the presence of Chinese trawlers.
- Analysts believe that the current operation by US would **encourage China to conduct a similar operation in Indian waters**. If China does go ahead, it will evoke a sharp response from India thereby increasing the tension.

#### C. It Gives a Signal to China

- Through this exercise, Beijing is being told that **it should not get too excited when the US carries out the exercise in South China Sea**.
- It is part of a global US practice to challenge those, even allies like India, who in its opinion make ‘excessive maritime claims’ beyond those specified by UNCLOS.

#### D. India – US Ties

- Many international think tanks believe that the **New Delhi would be irked** with this incident and would realise how **Washington still does not understand Indian sensitivities**.
- However, they believe that there is unlikely to be any lasting damage to bilateral relations.
- The two countries have seen an upturn in their relationship of late; **US defence secretary Lloyd Austin recently chose India** – calling it an “**increasingly important partner**” – for an international visit last month, along with traditional American ally Japan.

### What is EEZ

- According to UNCLOS, the EEZ is an area **beyond and adjacent to the territorial sea**, subject to the specific legal regime under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.

- It defines a **country's EEZ as the area in which it has "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources.**
- As per India's **Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976**, the EEZ of India "is an area beyond and adjacent to the territorial waters, and the **limit of such zone is two hundred nautical miles** from the baseline".
- India's "limit of the **territorial waters** is the line every point of which is at a **distance of twelve nautical miles from the nearest point of the appropriate baseline**".
- Under the 1976 law, "all foreign ships (other than warships including sub-marines and other underwater vehicles) **shall enjoy the right of innocent passage** through the territorial waters". **Innocent passage** is the one **that is not prejudicial to the peace, good order or security of India.**

## *Tourism*

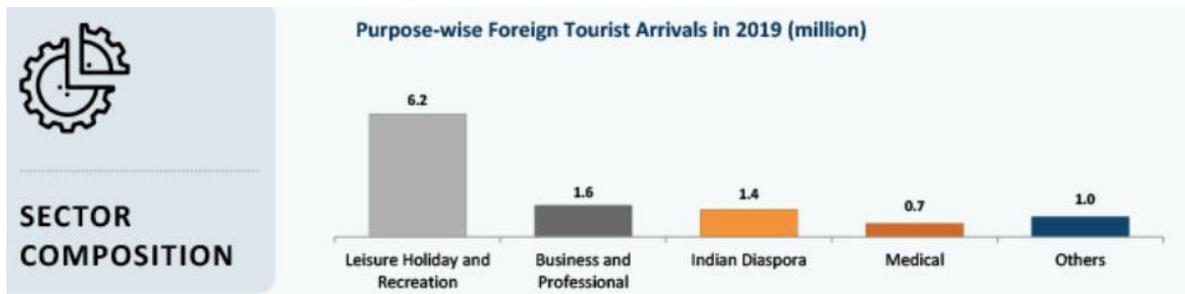
Over the past couple of decades, the travel and tourism sector has been expanding rapidly, on account of the positive growth trend in major economies, improved digital and physical connectivity, and steady increase in tourism spending. Across the globe, an increasing number of destinations have opened up and investment in tourism has increased. This has been fuelling economic growth through the creation of jobs and enterprises, export revenues, and infrastructure development.

### **Benefits Of Tourism**

- The appeal of the sector lies in the multitude of its impact on any economy. The sector has been universally recognized as an **agent of development**, an **engine for socio- economic growth**, and an important **source of foreign exchange earnings** in many countries.
- It has great capacity to create large scale employment of diverse kind – from the most specialized to the unskilled. It can also play an important role in achieving equitable growth.
- Promoting tourism not only creates jobs, drives exports, and generates prosperity across the world, but also leads to several **intangible benefits**. It acts as a cultural adhesive that can be wielded as a powerful tool for global peace and integrity.
- It also helps people of far-flung areas to **promote their culture and norms**, and provides opportunity for a country to showcase various facets of its natural and cultural heritage across the world.
- Tourism also creates incentive for conservation and preservation of natural and cultural heritage of countries. It can help meet the cost for conservation of archaeological and historic sites and prevent deterioration or disappearance of these sites.
- In multi-cultural countries, regional tourism can also help maintain the cultural identity of minority cultural groups that otherwise might be submerged into nation's dominant culture.
- The tourism sector also has significant backward linkages and creates multiplier effects which extend to manufacturing sector in the form of demand for souvenirs, handicrafts and mementos, as also to the agriculture sector which supplies food products for tourists.

## Tourism In India

- Tourism in India has significant potential considering the rich cultural and historical heritage, variety in ecology, terrains and places of natural beauty spread across the country.
- The Indian tourism industry has emerged as one of the key drivers of growth among the services sector in India. It is also a potentially large employment generator besides being a significant source of foreign exchange for the country.
- In FY20, **39 million jobs** were created in the tourism sector in India; this accounted for **8.0%** of the total employment in the country. The number is expected to rise to 52.3 million jobs by 2028.
- According to World Travel and Tourism Council, India ranked **10th among 185 countries** in terms of travel & tourism's total contribution to GDP in 2019. During 2019, contribution of travel & tourism to GDP was **6.8% of the total economy**. By 2029, India's tourism sector is expected to grow up to Rs 35 trillion (US \$488 bn), accounting for 9.2% of the economy.
- India was globally the **third largest in terms of investment** in travel and tourism with an inflow of US\$ 45.7 billion in 2018, accounting for 5.9% of the total investment in the country.
- During 2019, foreign tourist arrivals (FTAs) in India stood at 10.93 million, achieving a growth rate of 3.5% year on year.



- Domestic tourist traffic is one of the main drivers of growth in Indian tourism. Inbound tourism is being fostered by several factors such as rapidly increasing purchasing power of the middle- class, availability of economic package offers, better road and rail connectivity and evolving lifestyles.

## Government Initiatives

- The launch of several branding and marketing initiatives by the Government of India such as '**Incredible India!**' and '**Athiti Devo Bhava**' has provided a focused impetus to growth.
- The government has launched a Scheme "National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive" (**PRASHAD**) for *development and beautification of important pilgrimage sites* of the country.
- Another scheme called **Swadesh Darshan Scheme**, has developed various *theme-based circuits* to attract a wide variety of tourists. Examples of themes are Buddhist circuit, Ramayana Circuit, Rural Circuit, Himalayan circuit etc.

- Ministry of Tourism had launched **Dekho Apna Desh webinar** in 2020 to provide information on the many destinations and the sheer depth and expanse of the culture and heritage of Incredible India.
- The Ministry has also developed an initiative called **SAATHI** (System for Assessment, Awareness & Training for Hospitality Industry) by partnering with the Quality Council of India (QCI) in October 2020. The initiative will effectively implement guidelines/SOPs issued with reference to COVID-19 for safe operations of hotels, restaurants and other units.
- The Government is also making serious efforts to boost investment in the tourism sector. In the hotel and tourism sector, **100% FDI** (Foreign Direct Investment) is allowed through the automatic route.
- Further, a five-year tax holiday has been offered for 2, 3 and 4-star category hotels located around UNESCO World Heritage sites (except Delhi and Mumbai).

### **Challenges and Strategies**

The Indian tourism industry stands at a crucial juncture. Initiatives taken by the Central and State governments, along with the proactive measures in the realms of skill development, marketing and advertising, and trade shows and campaigns, have had a visible impact on the sector. However, the sector faces many challenges.

#### **Tourism Infrastructure Development**

- One of the key challenges for the tourism industry in India is the lack of adequate infrastructure facilities. Comparison of India with other Asia-Pacific countries such as China, Singapore and Thailand indicates that the country fares poorly on several key parameters such as air transport infrastructure, ground and port infrastructure, and tourist service infrastructure.
- There is need to encourage foreign investments across various categories of tourism infrastructure. States need to showcase investors the value of investing in their States and should explore the digital channel to disseminate success stories. States could also consider providing fiscal incentives for promoting tourism.

#### **Promotional Activities**

- The Indian government has undertaken a series of promotional activities to encourage visitors in India. Road shows are organized in key tourist generating markets, with wide scale participation from the travel and tourism industry. Apart from this, the Ministry of Tourism has several overseas offices which help position India as a preferred tourism destination.
- As resources for promotional activities is limited, identification of target market forms an essential first step for tourism marketing.
- Thus, efforts should be intensified in markets like the USA, Australia, Brazil, Thailand, Israel where growth in outbound tourist expenditure has been robust, but the Foreign Tourist Arrivals (FTAs) from these countries to India have been less than the growth in overall FTAs to India.
- At the same time, past marketing efforts in traditionally strong markets should continue at a steady pace.

### **Strengthening Medical Tourism**

- Medical tourism refers to patients travelling across borders to receive medical treatment of some form. India is a preferred destination for medical tourists on account of the low treatment costs for several medical procedures. However, several other countries are emerging as competitors for India in terms of cost of medical procedures.
- A major constraint for the medical tourism industry is the limited number of hospitals with **international accreditation** in India. Several countries offer fiscal incentives for domestic or international accreditation. Thus, fiscal incentives should be considered by the government to encourage international accreditation of hospitals.
- Another major issue is the **lack of insurance portability**. With growth in medical tourism, insurance companies are increasingly offering medical tourism insurance packages for specific medical facilities abroad on a hospital-by-hospital basis. Indian hospitals need to engage with global insurance companies offering such coverage.
- There is also **need for more facilitators** in the medical tourism space. Facilitators connect individual consumers, businesses, insurance carriers and agents, and third-party administrators to affordable and innovative medical travel options.

### **Tourist Insurance and Travel Assistance**

- The importance of good perception about the health and sanitation in context of tourism cannot be overemphasized. While a general improvement in healthcare infrastructure would be beneficial for tourism, there is also a need to adopt innovative mechanism for providing travel insurance to tourists. This has assumed even more importance to promote tourism in the post pandemic world.
- There is also need to enhance focus on tourists requiring special care as the population in key tourism generating countries is ageing. Accessibility of the tourist sites is a major issue for the elderly, and it is important to make the tourist facilities accessible to the physically challenged, and also provide reliable information about the accessibility of the tourist sites.

### **Promotion of Culinary Tourism**

- Culinary tourism is the pursuit and enjoyment of unique and memorable food and drink experiences. It is a nascent sector of the tourism industry in India whose potential is yet to be fully realized.
- Since 2010, local food culture has also been included as an intangible cultural world heritage by the UNESCO. Currently, India does not have any culinary item or tradition in the UNESCO intangible cultural world heritage list.
- India needs to apply for UNESCO world heritage status for its local cuisines and food cultures as it would give a competitive advantage to culinary tourism in the country.

### **Sustainable Tourism**

- The environment, society, and aesthetics of many tourist destinations are rendered vulnerable by their own popularity. This could be in the form of an environmental degradation, threat to cultural heritage, overuse of infrastructure, displacement of local population, or deterioration in tourist experience.

- To counter these, economies are increasingly focusing on sustainability aspect of tourism. World Tourism Organization defines sustainable tourism as satisfying current tourist and host community needs, while protecting and improving future opportunities.
- The tourist experience in several heritage sites of India is deteriorating on account of long queues and crowding. The infrastructure in several cities has also not been able to keep pace with the tourism demand. There is also evidence of environment threats in some of the key tourism sites of India.
- India needs to adopt strategies which promote sustainable tourism, with overcrowding emerging as the major challenge on this front.

If India manages to work on these challenges, it will be able to realise the actual potential of the tourism sector in India and boost its fortunes from the sector, which will contribute significantly to the economic development of an Incredible and Prosperous India.

**MAINS Q&A**

1. Recently a petition has been filed in the Supreme Court against uniform civil law on divorce and alimony. In this light critically discuss the need for having a Uniform Civil Code (UCC) in India?

**Answer**

A Uniform Civil Code is one that would provide for **one law for the entire country, applicable to all religious communities** in their personal matters such as marriage, divorce, inheritance, adoption etc. **Article 44** of the Constitution lays down that the state shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.

The UCC aims to provide **protection to vulnerable** sections as envisaged by Ambedkar including women and religious minorities, while also **promoting nationalistic fervour** through unity. When enacted, the code will work to simplify laws that are segregated at present on the basis of religious beliefs like the Hindu code bill, Sharia law, and others. The code will simplify the complex laws around marriage ceremonies, inheritance, succession, adoptions making them one for all.

**Arguments In Favour Of UCC**

- A Uniform Civil Code would, in theory, provide **equal status to all citizens** irrespective of the community they belong to.
- Uniform Civil Code means a set of laws that is **religion-neutral and gender-neutral**. Unfortunately, even after 73 years of Independence and 70 years of implementing our Constitution, we don't have gender-neutral and religion-neutral laws.
- **A UCC could lead to consistency and gender equality** when it comes to personal laws, and usher in some much-needed reforms.
  - Personal laws of different religions are **widely divergent** and there is no consistency in how issues like marriage, succession and adoption are treated for people belonging to different communities, which **clashes with Article 14** of the Constitution, which guarantees equality before the law.
  - **Reforms to personal laws** have also been inconsistent. For example, multiple amendments have been brought to Hindu personal laws, while Muslim law has seen fewer changes. This becomes evident in examples such as Muslim men being allowed to marry multiple wives, but women being forbidden from having multiple husbands.
    - ✓ In another example, even after the 2005 amendment to the Hindu Succession Act, women are still considered part of their husband's family after marriage. So, in case a Hindu widow dies without any heirs or will, her property will automatically go to her husband's family.
    - ✓ Men (fathers) are also treated as 'natural guardians' and are given preference under the Hindu Minority and Guardianship Act.
- Uniform Civil Code has five parts in it -- uniform age of marriage, uniform grounds of divorce, uniform maintenance and alimony, uniform adoption and guardianship, and uniform succession and

inheritance. These are **not the matters of personal laws but civil rights and human rights**, and such matters **cannot be discriminated on the basis of religion or gender**.

- A common Civil Code will help the **cause of national integration** by removing disparate loyalties to laws which have conflicting ideologies.

### Arguments Against UCC

- UCC is covered under the Directive Principles of State Policies while Freedom of Religion and Conscience are guaranteed under Fundamental Rights. It is often argued that **State cannot frame and implement a policy which takes away or abridges the Fundamental Rights** of citizen.
- Separate personal laws are one of the ways in which people have exercised their right to practise their own religion, which has been particularly important for minorities. The UCC could become a tool to erode this right, **suppress minorities and homogenise culture**.
- The **Law Commission's report on reform of family law (2018)** comments that a uniform civil code "is neither necessary nor desirable at this stage." According to the Commission, the best way forward may be to preserve the **diversity of personal laws** but at the same time ensure that they do not contradict fundamental rights.
- Another argument against immediate introduction of Uniform Civil Code is that India is a land of vast culture and diversity and it is very easy to **initiate communal disharmony based on religious and social differences**.

### Conclusion

It is imperative that the demand for Uniform Civil Code should come from all sections of society, specially minority communities. The pros and cons of Uniform Civil Code should be thoroughly discussed and debated by all. Enlightened and responsible Statesperson should come forward and promote the need and necessity of Uniform Civil Code amongst the commoners and motivate them towards a common consensus that aims at establishing a Uniform Civil Code for the entire Republic of India.

#### Extra Mile

- A petition has been filed in the Supreme Court against a "blatant attempt" being made to **take away the fundamental right of Muslim women to practice their religion**, all in the guise of providing a "**uniform law**" across all faiths.
- The petitioner asked the Supreme Court to hear her before deciding whether a uniform civil law for divorce, maintenance and alimony will leave Muslim women like her better-off.

#### Petitioner's Arguments

- In December last year, the Supreme Court had agreed to examine a plea for a single law covering divorce, maintenance and alimony for all religions. The petitioner argued that it was a "**deliberate attempt to interfere with the cultural and customary practices** and usages that enjoy the protection of Articles 25 and 26 of the Constitution".
- The **Muslim personal law provides a Muslim woman various options to divorce her husband**. They include **Talak-e-Tafweez** (the wife's right to divorce her husband is like that of the husband if the same has been incorporated in the nikahnama or where such a delegation has been made by the husband on a subsequent date); **Khula** — the wife can get her marriage dissolved through Darul Kaza (Shariat Court); **Talak-e-Mubarrah** — divorce by mutual consent; **Fask** — the wife can

get an annulment of marriage through Darul Kaza; and finally, via the **Dissolution of Muslim Marriages Act of 1939**.

- **Muslim marriage is contractual in nature** and as such the parties to it are allowed to impose conditions for regulating their matrimonial relations. Such conditions can be imposed before the marriage or at the time of the marriage or even after the marriage.
- **An avenue for resolution of matrimonial disputes** through mediation is also provided for under Islamic matrimonial jurisprudence.

2. **Allahabad High Court has recently red-flagged the way the UP government has used the National Security Act (NSA). In this light, discuss the provisions of National Security Act (NSA) and how is it Draconian?**

### Answer

Different State governments have invoked the stringent provisions of the NSA to detain citizens for questionable offences. This has brought the focus back on the potential abuse of the controversial law, especially in UP.

Recently, the Allahabad High Court has struck down orders and directed the release of detainees in nearly **80% of cases related to cow laughter and communal incidents** in which the UP government had invoked the draconian NSA over the last three years. Between Jan' 2018 and Dec' 2020, the Allahabad High Court **quashed orders of DMs in 94 detentions out of 120 habeas corpus petitions** across as many as 32 districts and ordered the release of the detainees. In as many as 11 detentions, the court cited "**non-application of mind**" by the DM while passing the order.

### **Provisions of The Act**

- NSA empowers the Centre or a State government to detain a person to prevent him from acting in any manner prejudicial to defence of India, the relations of India with foreign powers, or the security of India.
- The government can also detain a person to prevent him from disrupting public order or for maintenance of supplies and services essential to the community.
- Under the NSA, **an individual can be detained without a charge for up to 12 months**; the state government needs to be intimated that a person has been detained under the NSA. But the term can be extended if the government finds fresh evidence.
- A person detained under **NSA can be held for 10 days without being told the charges against them**. The detained person can **appeal before a high court advisory board** but they are not allowed a lawyer during the trial.

### **NSA Is Considered As Draconian Due To The Following Reasons:**

- Under the NSA, a person is taken into custody to prevent him or her from acting in any manner prejudicial to "the security of the state" or for "maintenance of the public order." It is an **administrative order** passed either by the Divisional Commissioner or the District Magistrate (DM) — and **not detention ordered by police based on specific allegations or for a specific violation of the law**.

- Even if a person is in police custody, the DM can slap NSA against him. Or, **if a person has been granted bail by a trial court, he can be immediately detained under the NSA.** If the person has been acquitted by the court, the same person can be detained under the NSA.
- The law **takes away an individual's constitutional right to be produced before the magistrate within 24 hours** as is the case when the accused is in police custody; the detained person also **does not have the right to move a bail application** before a criminal court.
- Also, the **DM who passed the detention order is protected under the Act:** no prosecution or any legal proceeding can be initiated against the official who carried out the orders. Therefore, the **writ of Habeas Corpus is the only protection** guaranteed under the Constitution against the unchecked state power of taking people into custody under the NSA.
- Section 50 of the Criminal Procedure Code (Cr.PC) mandates that the **person arrested has to be informed of the grounds of arrest, and the right to bail.** But under NSA, A person could be kept in the dark about the reasons for his arrest for up to five days, and in exceptional circumstances not later than 10 days.
- **National Crime Records Bureau (NCRB)**, which collects crime data in India, **does not include cases under the NSA as no FIRs are registered.** Hence, no figures are available for the exact number of detentions under the NSA.

### Conclusion

The preventive detention under NSA has to be strictly construed keeping in view the “delicate balance between social security and citizen freedom”. To prevent misuse of this potentially dangerous power, the law of preventive detention has to be strictly construed and meticulous compliance with the procedural safeguards has to be ensured. It is time to reconsider the law because in four decades of its existence, the NSA has been in the news for all the wrong reasons.

3. **NITI Aayog recently released a report, titled 'Investment Opportunities in India's Healthcare Sector'. Highlight the findings of the report along with the factors driving growth in the healthcare sector.**

### Answer

The report titled 'Investment Opportunities in India's Healthcare Sector' outlines a range of investment opportunities in the country's healthcare sector across hospitals, pharmaceuticals and medical devices.

#### Highlights Of The Report

- Healthcare has become one of the largest sectors of the Indian economy, in terms of both revenue and employment. According to the report, **FDI inflows** in the healthcare sector in India increased from USD 94 million in 2011 to USD 1,275 million in 2016, an increase of over 13.5 times.
- India's healthcare industry has been growing at a Compound Annual Growth Rate (CAGR) of around 22% since 2016. At this rate, it is expected to reach USD 372 billion in 2022.
- The **hospital industry in India accounts for 80 % of the total healthcare market.** It was valued at USD 61.79 billion in 2016-17 and is expected to reach USD 132 billion by 2023, growing at a CAGR of 16-17%.

- Overall, the healthcare sector has the potential to generate 2.7 million additional jobs in India between 2017-22 -- over 500,000 new jobs per year.

### **Factors Driving Growth**

- Rising instances of lifestyle diseases, such as high cholesterol, high blood pressure, obesity, poor diet and alcohol consumption in urban areas is boosting demand for specialized care services.
- In addition to these trends, Covid-19 is likely to lead to long-term changes in attitudes towards personal health and hygiene, health insurance, fitness and nutrition, as well as health monitoring and medical check-ups.
- Furthermore, there is a growing emphasis on the emergence of public-private partnership models in India's healthcare sector.
- According to the report, around 65 % of hospital beds in India cater to almost 50 % of the population concentrated in UP, Maharashtra, Karnataka, Tamil Nadu, Telangana, West Bengal and Kerala. The other 50 % of the country's population living in the remaining 21 states and 8 UTs has access to only 35 % of hospital beds. There is tremendous potential to grow hospitals beds, by at least 30 %, for ensuring equitable access to healthcare for citizens in all parts of the country.

### **Growth Segments**

- With respect to **pharmaceuticals**, India has the opportunity to boost domestic manufacturing, supported by recent government schemes with performance-linked incentives, as part of the Aatmanirbhar Bharat initiative.
- Further, between 2018 and 2024, patents worth USD 251 billion are expected to expire globally, which acts as a big opportunity for the country's pharmaceutical sector.
- In the **medical devices and equipment segment**, expansion of diagnostic and pathology centres as well as miniaturised diagnostics have high potential for growth.
- **Medical Value Travel**, especially wellness tourism, also has bright prospects, due India's strengths in alternative systems of medicine. The pandemic has also accelerated the adoption of digital technologies, including **telemedicine**.
- **Technology advancements** such as Artificial Intelligence (AI), wearables and other mobile technologies, along with Internet of Things, also offer numerous avenues for investment.
- Although the adoption of home healthcare solutions in India is currently very small, it has tremendous potential for growth in the future.
- This is due to the rising elderly population in the country, increase in the incidence of chronic diseases, increased demand for constant personalised care as well as the emergence of nuclear family structures in urban areas.

Apart from the growth potential in the sector, the pandemic has highlighted that there is an urgent need to improve the health infrastructure of the country. Thus, investments will act as a win-win scenario for both the investors and the beneficiaries and act as the foundation for a healthy India.

#### **4. The United Nations Population Fund (UNFPA) recently released a report on Bodily Autonomy. What is bodily autonomy? Delineate the key findings of the report.**

**Answer**

- The United Nations Population Fund (UNFPA) recently released its flagship State of World Population Report 2021 titled 'My Body is My Own'. This is the first time a United Nations report has focused on bodily autonomy, defined as the power and agency to make choices about one's body without fear of violence.
- The report measures women's access to bodily autonomy through their power to make their own decisions about their reproductive health care, contraceptive use and sexual relations.
- It also explores the extent to which the laws of the countries support or interfere with a woman's right to make these decisions.
- Examples of violation of bodily autonomy include child marriage, female genital mutilation, lack of contraceptive choices leading to unplanned pregnancy, unwanted sex exchanged for a home and food.

**Key Findings Of The Report**

- The report realised that bodily autonomy is essential to achieving the UNFPA's goals of ending the global unmet need for contraception, preventable maternal deaths, gender-based violence and harmful practices by 2030
- However, hundreds of millions of women and girls do not own their own bodies and their lives are governed by others.
- Nearly half the women in 57 developing countries are denied the right to decide whether to have sex with their partners, use contraception or seek health care and only 55 per cent of women are fully empowered to make choices on these parameters.
- Only 71 per cent of countries guarantee access to overall maternity care and only 75 per cent of countries legally ensure full, equal access to contraception.
- Only about 80 per cent of countries have laws supporting sexual health and well-being, with about 56 per cent of countries having laws and policies supporting comprehensive sex education.
- Girls and boys with disabilities are nearly three times more likely to be subjected to sexual violence, with girls at the greatest risk.
- For many women and girls, deprivation of bodily autonomy is a part of social norms and laws.
  - Twenty countries or territories have "**marry-your-rapist**" laws, where a man can escape criminal prosecution if he marries the woman or girl he has raped.
  - Forty-three countries have no legislation addressing the issue of **marital rape** (rape by a spouse) and more than 30 countries restrict **women's right to move around** outside the home.

**Impact**

- A woman's power to control her own body is linked to how much control she has in other spheres of her life, with higher control associated with advances in health and education, income and safety.
- Lack of bodily autonomy has massive implications beyond the harms to individual women and girls.
- It can potentially reduce economic productivity and skill development, and lead to extra costs to health care and judicial systems.

Real and sustained progress largely depends on uprooting gender inequality and all forms of discrimination, and transforming the social and economic structures that maintain them. In this effort, men must become allies and they must step away from patterns of privilege and dominance that reduces bodily autonomy, and move towards ways of living that are fair, harmonious and benefits everyone.

#### Extra Mile

##### Status in India

- In India, according to National Family Health Survey-4 (2015-2016), only about 12% of currently married women (15-49 years of age) independently make decisions about their own healthcare.
- Only 8% of currently married women (15-49 years) take decisions on the use of contraception independently, while 83% decide jointly with their spouse.
- Information provided to women about use of contraception is also limited — only 47% women using a contraceptive were informed about the side effects of the method, and 54% women were provided information about other contraceptives.

##### UNFPA

- The United Nations Population Fund (UNFPA) is a UN agency aimed at improving reproductive and maternal health worldwide.
- The agency began operations in 1969 as the United Nations Fund for Population Activities. Its name was changed into United Nations Population Fund in 1987. However, the shortened term of UNFPA has been retained.
- Its work includes developing national healthcare strategies and protocols, increasing access to birth control, and leading campaigns against child marriage, gender-based violence and female genital mutilation.
- The UNFPA supports programs in more than 150 countries.

5. The Centre has recently approved the National Policy for Rare Diseases 2021. What are Rare Diseases and what are the issues related to rare diseases. Delineate the provisions of the National Policy for Rare Diseases 2021.

#### Answer

- Broadly, a 'rare disease' is defined as a health condition of low prevalence that affects a small number of people when compared with other prevalent diseases in the general population.
- While there is no universally accepted definition of rare diseases, countries typically arrive at their own descriptions, taking into consideration disease prevalence, its severity and the existence of alternative therapeutic options.
- The **World Health Organisation (WHO)** defines rare disease as often debilitating **lifelong disease or disorder with a prevalence of 1 or less, per 1000 population.**
- Rare diseases recorded in India are **Haemophilia, Thalassaemia, Sickle cell anaemia and Primary ImmunoDeficiency** in children, **auto-immune diseases, Lysosomal storage disorders** such as Pompe disease and Gaucher's disease.

### Issues Related To Rare Disease

- The field of rare diseases is *very complex and heterogeneous*, and the prevention, treatment and management of rare diseases has multiple challenges.
- Early diagnosis of rare diseases is a major challenge owing to a variety of factors that include **lack of awareness among primary care physicians, lack of adequate screening and diagnostic facilities etc.**
- There are also *fundamental challenges in the research and development* for the majority of rare diseases. This is due to low information about the pathophysiology or the natural history of these diseases, particularly in the Indian context. Rare diseases are also difficult to research upon as the patient pool is very small and it often results in inadequate clinical experience.
- Currently *few pharmaceutical companies are manufacturing drugs* for rare diseases globally and there are no domestic manufacturers in India. Also, the cost of treatment of rare diseases is prohibitively expensive.

### Provisions Under The Policy

Various high courts and the Supreme Court have also expressed concern about lack of a national policy for rare disease. To address these challenges, the Centre has approved a National Policy for Rare Diseases 2021.

- The policy aims to lower the high cost of treatment for rare diseases with **increased focus on indigenous research** with the help of a **National Consortium** to be set up with Department of Health Research, as convenor.
- It envisages **creation of a national hospital based registry** of rare diseases so that adequate data is available for definition of rare diseases and for research and development within the country.
- It focuses on **early screening and prevention** through primary and secondary health care infrastructure such as Health and Wellness Centres and District Early Intervention Centres (DEICs) and through counselling for the high-risk parents. Screening will also be supported by Nidan Kendras set up by Department of Biotechnology.
- It aims to **strengthen tertiary health care facilities** for prevention and treatment by designating 8 health facilities as **Centre of Excellence (CoE)**. These CoEs will also be provided one-time financial support of up to Rs 5 crores for upgradation of diagnostics facilities.
- A provision for **financial support** up to Rs. 20 lakhs under the Umbrella Scheme of Rastriya Arogya Nidhi is proposed for treatment, of those rare diseases that require a one-time treatment (diseases listed under Group 1 in the rare disease policy).
- Beneficiaries for such financial assistance would not be limited to BPL families, but the benefit will be extended to about 40% of the population, who are eligible under Pradhan Mantri Jan Arogya Yojana.
- Besides, the policy also envisages a **crowd funding mechanism** in which corporates and individuals will be encouraged to extend financial support through a robust IT platform for treatment of rare diseases.
- Funds so collected will be utilized by CoEs for treatment of all three categories of rare diseases as first charge and then the balance financial resources could also be used for research.

Going forward, increase in financial support and focus on research and development will augment effective and safe treatment for rare diseases and will help to reduce the morbidity and mortality associated with rare diseases.

#### Extra Mile

##### Classification As Per The Policy

- Group 1: Disorders amenable to **one-time curative treatment**.
- Group 2: Diseases requiring **long term / lifelong treatment** having relatively lower cost of treatment and benefit has been documented.
- Group 3: Diseases for which definitive treatment is available but challenges are to make optimal patient selection for benefit, very high cost and lifelong therapy.
- Diseases in the first group would be eligible for a one-time treatment cost of up to ₹20 lakh as mentioned above.
- For Group 2 diseases, States could consider supporting patients of such rare diseases that could be managed with special diets or hormonal supplements.

##### Criticisms

- The new policy has absolutely no consideration for Group 3 patients, who require lifelong treatment support.
- In the absence of a sustainable funding support for Group 3 patients, the precious lives of all patients, mostly children, are now at risk and at the mercy of crowdfunding.
- Even Group 1 is only for few and Group 2 has been openly left for the State government.
- The policy also doesn't account that those who can't afford such treatment will be unable to even make it to the prescribed tertiary hospitals for treatment.

**6. UNICEF recently released a report titled Gender Bias & Inclusion In Advertising In India. Highlight the key findings of the report and ways to address gender bias in advertising.**

#### Answer

UNICEF recently released a report titled Gender Bias & Inclusion In Advertising In India. The study measures the level and type of gender stereotyping found in Indian advertisements on TV and YouTube, through analysis of the 1,000 most viewed advertisements in 2019.

#### **Key Findings**

- While girls and women are well-represented as characters (49.6%) and dominate screen time (59.7%) and speaking time (56.3%), their portrayal is problematic as they further gender stereotypes.
- They are more likely to be shown as married, less likely to be shown in paid occupation, and more likely to be depicted as caretakers and parents than male characters. When girls and women appear in ads, it is mostly to sell domestic and beauty products to female consumers.

- While male characters are more likely to be shown making decisions about their future than female characters (7.3% compared with 4.8%), the latter are twice as likely to be shown making household decisions than male characters (4.9% compared with 2.0%).
- For characters where intelligence is part of their character in the ad, male characters are more likely to be shown as smart than female characters (32.2% compared to 26.2%).
- Female characters are nine times more likely to be shown as 'stunning/very attractive' than male characters (5.9% compared with 0.6%). They are six times more likely to be shown in revealing clothing (11.2% compared with 1.7%) and are five times more likely to be sexually objectified (4.7% compared with 0.9%) than male characters.
- The report also highlights the issue of colourism. Two-thirds of female characters (66.9%) have light or medium-light skin tones— significantly more than male characters (52.1%). This is problematic because this advances the discriminatory notion that light skin tones are more attractive.

### Way Ahead

- Gender socialization is a learned behaviour from childhood. Children observe and learn social cues from parents, family, and the society around them, including the advertising they see around themselves.
- Thus, it is important to promote diverse templates of beauty and avoid regressive beauty norms of women and girls by increasing representation of women and girls across age, social class, skin tone and other diversity indicators.
- To drive gender equity in the home and in purchasing decisions, men and boys could be shown as sharing household tasks, including cooking, cleaning and caring for others.
- At the same time, more women and girls should be portrayed as leaders, especially in the public sphere.

Positive gender norms in marketing and advertising will give children and adolescents exposure to a concept of gender parity and encourage a way of thinking that includes the perspectives of all, leading to better outcomes for everyone.

### 7. The central government has passed an ordinance to amend the Insolvency and Bankruptcy Code (IBC) providing a pre-packaged insolvency resolution process for MSMEs. What is the pre-packaged insolvency process and what are its advantages?

#### Answer

A pre-packaged insolvency process is an informal plan worked out by the creditor and debtor for debt resolution. This system of insolvency proceedings has become a popular mechanism for insolvency resolution in the **UK and Europe** over the past decade.

#### **Pre-packaged Insolvency Process**

- The ordinance provides for a pre-packaged insolvency resolution process for MSMEs under the Insolvency and Bankruptcy Code, 2016 (IBC). It allows the Central Government to notify pre-packaged process for defaults of not more than Rs 1 crore.

- As per the ordinance, the pre-packaged insolvency process allows the promoters and the management of the firm (debtors) to create an informal plan for debt resolution with its creditors.
- The resolution plan can then be taken for approval by the secured creditors to the National Company Law Tribunal (NCLT).
- However, the resolution plan has to be approved by a minimum of 66 % of financial creditors that are unrelated to the corporate debtor, before submitting the resolution plan to NCLT.
- Further NCLTs are also required to either accept or reject any application for a pre-pack insolvency proceeding before considering a petition for a corporate insolvency resolution process (CIRP) under IBC.

#### **Role Of The Resolution Professional**

- Once the resolution process starts, the National Company Law Tribunal (NCLT) will appoint a resolution professional.
- Unlike the CIRP process where the resolution professional takes control of the company, under the pre-pack process, the **resolution professional will only act as a facilitator**.
- Thus, during the resolution process, the company will continue to be controlled by the existing management instead of coming under the control of a resolution professional.

#### **Alternate Resolution And Timeline**

- The pre-pack mechanism also allows for a **swiss challenge** for any resolution plans which provide less than full recovery of dues to operational creditors.
- Under the swiss challenge mechanism, any third party would be permitted to submit a resolution plan for the distressed company.
- Creditors are also permitted to seek resolution plans from any third party if they are not satisfied with the resolution plan offered by the promoters of the company.
- In line with the time-bound resolution process under the IBC, the pre-pack scheme also prescribes timelines. It allows for **120 days for the entire process** — 90 days for the submission of the resolution plans, and 30 days for the NCLT to improve them.

#### **Advantages**

- The pre-packaged mechanism allows the **management of the firm to be a part of the restructuring exercise**, giving them another chance for correction.
- Moreover, keeping the control of the business with the promoters during the resolution process, will lead to **minimal disruption of operations**.
- One of the key criticisms of the CIRP has been the time taken for resolution. At the end of December 2020, over 86 per cent of the 1717 ongoing insolvency resolution proceedings had crossed the 270-day threshold. Initially, as per the IBC, the resolution process had to be completed within 270 days from the beginning of the insolvency proceedings. This was later extended to 330 days.
- The pre-pack process is a much faster and efficient process, as the company will itself initiate the resolution plan with the approval of 66 percent of financial creditors.

Faster resolution of cases will bring down the costs associated with the resolution process and reduce the burden of NCLT, which will lead to faster disposal of other cases. In doing so, it will maximise outcomes for all the stakeholders and preserve the stability of the MSME sector and protect jobs.

#### Extra Mile

#### Types of Creditors

##### Financial and Operational Creditors

- **Financial creditors** are basically entities (lenders like banks) that have provided funds to the corporate. Their relationship with the entity is a pure financial contract, such as a loan.
- On the other hand, business and other entities that have provided inputs and other materials and services and to whom the defaulted corporate owes a debt are called as **operational creditors**.

##### Secured and Unsecured Creditor

- A secured creditor is any creditor or lender that gives credit after taking a collateral (guarantee).
- If a borrower defaults the secured creditors have a legal right to the secured asset used as collateral. The secured creditor can either take control of the asset or sell it to recover the debt.
- An unsecured creditor is an individual or institution that lends money without obtaining specific assets as collateral. This leads to a higher risk to the creditor.

#### 8. BIMSTEC is a natural platform to fulfil our key foreign policy priorities of Neighborhood First and Act East. Discuss. Do you think BIMSTEC is ready to replace SAARC?

#### Answer

- Comprising of Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal and Bhutan, BIMSTEC is home to 1.5 billion people, accounting for approximately 21 per cent of the world population, and a combined GDP of US\$ 2.5 trillion.
- In October 2016, India had hosted the BIMSTEC members at Goa during the BRICS Outreach Summit.
- On May 30, the Indian Government invited the leaders of BIMSTEC nations for the swearing-in ceremony, thereby, highlighting India's renewed interest in this organization.

#### Significance of BIMSTEC for India:

- **Bridge-builder between the SAARC and the ASEAN** – Myanmar and Thailand are members of ASEAN while other member nations belong to SAARC. Hence, BIMSTEC is a robust platform for connecting South and South East Asia.
- **Neighbourhood First Policy** - BIMSTEC is an integral part of India's ongoing efforts to map out new pathways of geo-economic cooperation among countries in the region which it sees as part of its extended neighbourhood.
- **Potential game-changer for the northeastern states** - BIMSTEC has potential to unlock landlocked northeastern states of India which is home to 45 million people.

- **Strategic Significance** - China has diverted its attention to the Bay of Bengal with greater assertion. The *Bay of Bengal acts like a funnel to the Malacca Strait*, a major trade route for China, which has also undertaken massive infrastructure projects in Bimstec countries except India and Bhutan.
- **Economic Significance** - The seven nations had an average annual rate of economic growth between 3.4% and 7.5% from 2012 to 2016; and one-fourth of the world's traded goods cross the Bay every year.
- **Resource rich region** - The Bay of Bengal is the route for about 25 per cent of global trade and has *huge untapped resources especially in the energy sector* - massive reserve of natural gas, the future of power supply.
- **In counterterrorism**, close cooperation between India and BIMSTEC countries can strengthen the fight against terrorism and illicit drug trafficking.
- **Attractive alternative to SAARC** - BIMSTEC more naturally lends itself to regional integration—physical connectivity as well as economic cooperation—than Saarc which is dominated by India and Pakistan and hamstrung by tensions between the two.

In recent years, the failure of SAARC has given space to the BIMSTEC and many analysts are believing that BIMSTEC is ready to replace SAARC. However, it should be remembered that, in order to get desired results through BIMSTEC, it must address the various issues and challenges faced by this organization.

#### **Contentious Issues Concerning BIMSTEC Nations:**

- India and Bangladesh have huge reservations over the Teesta water sharing dispute and over the refugees.
- Bangladesh and Myanmar also have ongoing problems in regard to the Rohingya Muslims as refugees.
- India and Sri Lanka continue to have friction on the fishermen issue.
- Absence of a permanent secretariat for a long time and lack of commitment to invest in several priority areas identified by the member states were seen as some of the key institutional factors holding the BIMSTEC back.

#### **Conclusion**

- For BIMSTEC to become an enabler of regional cooperation, it will have to evolve as an organisation that works through a bottom-up approach.
- The people-centric approach seems to be the best as BIMSTEC seriously lags behind ASEAN and other regional organisations in terms of people-to-people contacts.

#### **17<sup>th</sup> BIMSTEC Ministerial Meeting**

17th BIMSTEC Ministerial Meeting was held recently in virtual mode. The meeting **was chaired by Sri Lanka**. India was represented by External Affairs Minister S. Jaishankar.

#### **Key Highlights**

- The meeting endorsed the **BIMSTEC Master Plan for Transport Connectivity**. This master plan is to be adopted at the next BIMSTEC Summit.
- It also endorsed **three MoUs / Agreements for signing** at the next BIMSTEC Summit. These are:

- The BIMSTEC Convention on Mutual Legal Assistance in Criminal Matters,
- MoU on Mutual Cooperation between Diplomatic Academies/Training Institutions of BIMSTEC Member States; and
- Memorandum of Association on the Establishment of BIMSTEC Technology Transfer Facility (TTF) in Colombo, Sri Lanka.
- The meeting encouraged Member States to complete their internal procedures for adoption of the BIMSTEC Charter.
- The meeting also appreciated the fact that **BIMSTEC Centre for Weather and Climate, being hosted in India**, is fully functional to provide Disaster Early Warnings.

### **India and BIMSTEC**

Several initiatives were announced by India at the last BIMSTEC Summit. These include:

- BIMSTEC Startup Conclave in virtual mode in January 2021; Second BIMSTEC Disaster Management Exercise in Puri in February 2020;
- Conference on Combating Drug Trafficking for BIMSTEC countries in February 2020; the BIMSTEC Seminar on Climate Smart Farming Systems in New Delhi in December 2019;
- A Capacity Building Workshop on Risk Informed Urban Planning at Gujarat Institute for Disaster Management, Gandhinagar in December 2019;
- BIMSTEC Military Exercise and Army Chief's Conclave 2018 in Pune in Sept 2018; BIMSTEC Ministerial Conclave at the India Mobile Congress 2018 in New Delhi in October 2018;
- Training of Diplomats from BIMSTEC countries at the Sushma Swaraj Institute for Foreign Service, New Delhi in February 2020; training of 24 researchers / professionals from BIMSTEC countries in space and remote sensing at the North East Space Application Centre, Shillong in January 2020; and
- providing 30 Scholarships to students from BIMSTEC countries in the Nalanda University.

### **9. Multilateralism as a concept is under grave threat. What are the possible reasons behind the decline of multilateralism? Suggest steps to revive multilateralism?**

#### **Answer**

- The network of multilateral institutions that oversees everything from states' progress toward the Sustainable Development Goals (SDGs) to the daily distribution of humanitarian aid is under threat.
- The current crisis of multilateralism **can be seen in multiple forms**: fewer multilateral treaties are being signed and ratified; some of the existing treaties are poorly implemented, and states increasingly reject the oversight of treaty obligations; increasingly cutting the financial support to many institutions etc.
- The **COVID-19 pandemic has further exploited** this fault line. Rise of **Vaccine Nationalism, failure of international organisations such as UN/WHO to contain the pandemic, disruptions in global supply chain** etc. are few recent examples highlighting the threat to multilateralism.

**Reasons:**

- **Failure to break the ice** is leading to ineffectiveness of the institution. Consensus has become hard to reach within the existing multilateral structures. This has led to the stalemate in institutions like WTO. Last successful trade talk was Uruguay round.
- **Rise of Protectionist Measures** in the form of anti-immigration and anti-globalization policies is also one of the factors. Trade war between US and China, termination of GSP by USA are few examples in this regard.
- **Failure to bring suitable reforms** reflecting the emerging world order has brought rigidity and inflexibility in institutions like UN, IMF/World Bank. This has affected the credibility of these institutions in modern times.
- **Aggressive expansionist policies** followed by different countries is severely undermining the global norms and rules.
- For example, China refused to accept the verdict of ICJ on South China Sea thereby undermining the UNCLOS and Permanent Court Of Arbitration. Similarly, annexation of Crimea by Russia undermined the credibility of UN.
- **Super nationality Vs. Nationalism debate** is gaining traction. This can be seen in the case of BREXIT.
- **Increased Geopolitical Competition** has led to the emergence of mega blocs such as RCEP, BRICS, SCO etc.
- **Trust deficit among stakeholders** is affecting working of multilateral treaties and institutions. The collapse of INF treaty or the exit of USA and Israel from UNESCO highlight this fact.

**Way Forward:**

- Countries that believe in multilateralism **should find ways to support** their key programmes that protect rights and justice. For example, When the **US cut off funding to the UNFPA and UNRWA**, European and other governments including India stepped in to provide vital financial support.
- While acknowledging multilateralism's current structural weaknesses, leaders should work towards bringing suitable reform reflecting the new geopolitical order.
- The leaders of international organisations should stand up to those countries which try to defy the mandate of organisation.
- There is need to ensure that citizens understand and appreciate the fact that giving away power to multilateral agencies enhances their own power.

**Conclusion:**

- The COVID-19 pandemic is a tragic reminder of how deeply connected we are. There is a clear and **urgent need for concrete multilateral solutions**, based on common action across borders for the good of all humanity, starting with the equitable distribution of vaccines as a global public good.
- **COVAX facility** which **promotes equal distribution of COVID-19 Vaccines** is an excellent example of multilateral cooperation during desperate times.

- This need goes **far beyond the pandemic**. It applies to all the transnational threats we face: the climate crisis; air and water pollution; the proliferation of weapons of mass destruction; the development of new technologies in the absence of agreed principles and norms.
- We need a strong multilateral framework which is inclusive and representative of the current global realities. For this, the larger ideological battle for a rules-based international system must be fought using a strong dose of global civics as an antidote to neo-nationalism.

**International Day of Multilateralism and Diplomacy for Peace**

- It is observed on April 24, every year across the world. **In December 2018**, United Nation General Assembly adopted the resolution, "International Day of Multilateralism and Diplomacy for Peace."
- It was **first observed in April 2019**.

**10. A recent study shows that Groundwater depletion may reduce winter cropping intensity by 20% in India. In this light, discuss the causes and consequences of Groundwater Depletion in India?**

**Answer**

Groundwater is the largest source of usable, fresh water in the world. In many parts of the world, especially where surface water supplies are not available, domestic, agricultural, and industrial water needs can only be met by using the water beneath the ground. Groundwater depletion, a term often defined as **long-term water-level declines** caused by sustained groundwater pumping, is a key issue associated with groundwater use.

The **World Economic Forum** ranks **water crises as the world's third greatest risk** by impact and extreme weather the top risk by likelihood. Aquifer depletion in agricultural regions could threaten nearly **half the world's food sources** and **deny 1.8 billion people reliable access to water by 2050**.

**Causes of Groundwater Depletion**

- **Misdirected Policy:** In the green revolution era, policy-supported environment led to a large increase in *rice cultivation in north western India* mainly in Punjab and Haryana which are ecologically less suitable for rice cultivation due to predominantly light soils. This policy-supported intensive agriculture led to unsustainable groundwater use for irrigation and in turn groundwater scarcity.
- The **bursting population** is a reason for excessive digging of groundwater. While it has been estimated that the amount of usable water should be between 700-1200 billion cubic meters, India has insufficient water per head at only 1000 cubic meters of water per head.
- **Water in most rivers is polluted**, making it unfit for drinking or any other use. The poor-quality arises from insufficient and delayed investment in urban water-treatment facilities.
- **Poor monsoon due to climate change** has further aggravated the groundwater situation since the latter heavily depends on rains. Poor rainfall compels the farmers to dig further down for groundwater to irrigate the field. This results in pushing the tables deeper down.

- **Frequent pumping of water:** Groundwater depletion most commonly occurs because of the frequent pumping of water from the ground. We pump the water more quickly than it can renew itself, leading to a dangerous shortage in the groundwater supply.
- **Agricultural needs require a large amount of groundwater:** A large amount of groundwater goes to farming, but the availability of groundwater is steadily declining.
- **Groundwater depletion can also occur naturally:** The activities that lead to groundwater depletion come mostly from humans, but a portion of it also comes from changes in our climate and can speed up the process.

### Effects Of Groundwater Depletion

- **Lowering of the water table:** The most severe consequence of excessive groundwater pumping is that the water table, below which the ground is saturated with water, can be lowered. For water to be withdrawn from the ground, water must be pumped from a well that reaches below the water table.
- **Increased costs for the user:** As the depth to water increases, the water must be lifted higher to reach the land surface. If pumps are used to lift the water (as opposed to artesian wells), more energy is required to drive the pump. Using the well can become prohibitively expensive.
- **Reduced Surface Water Supplies:** Groundwater and surface water are connected. When groundwater is overused, the lakes, streams, and rivers connected to groundwater can also have their supply diminished.
- **Land Subsidence:** Land subsidence occurs when there is a loss of support below ground. This is most often caused by human activities, mainly from the overuse of groundwater, when the soil collapses, compacts, and drops.
- **Water Quality Concerns:** Excessive pumping in coastal areas can cause saltwater to move inland and upward, resulting in saltwater contamination of the water supply.

### Solutions To Prevent Groundwater Depletion

- As aquifers and other groundwater sources are depleted at a rate greater than the recharge rate, **artificial recharge is needed** to maintain a lasting water supply to prevent complete withdrawal of groundwater in the near future.
- **To combat overpumping of groundwater** and achieve stability in the water table, artificial recharge is another water source that will help alleviate the stress on groundwater supply.
- For arid climates with little precipitation, recharging groundwater can be achieved through **using treated wastewater, natural runoff, and runoff from irrigation.**
- **Other methods and techniques for groundwater recharge:** Roof Top Rain Water, runoff harvesting through Recharge Pit, Recharge Trench, Tubewell, Recharge Well.
- **Rain Water Harvesting** through Gully Plug, Contour Bund, Gabion Structure, Percolation tank, Check Dam, Cement Plug, Nala Bund, Recharge shaft, Dugwell Recharge Ground Water Dams, Subsurface Dyke.

**Ground Water Depletion And Cropping Intensity In India**

- India is the second-largest producer of wheat in the world, with over 30 million hectares in the country dedicated to producing this crop. But with severe groundwater depletion, the **cropping intensity or the amount of land planted in the winter season may decrease by up to 20% by 2025.**
- The international team **studied India's three main irrigation types** on winter cropped areas: **dug wells, tube wells, canals**, and also analysed the groundwater data from the Central Ground Water Board.
- They found that 13% of the villages in which farmers plant a winter crop are located in **critically water-depleted regions**. These villages may lose 68% of their cropped area in future if access to all groundwater irrigation is lost. The results suggest that these losses will largely occur in **northwest and central India**.
- **Alternative sources:** The results showed that **“switching to canal irrigation has limited adaptation potential** at the national scale. Even if all regions that are currently using depleted groundwater for irrigation will switch to using canal irrigation, **cropping intensity may decline by 7% nationally.**

1. SUPACE Portal, recently in news, was intended to facilitate which of the following?

- a) Air pollution tracking
- b) Monitoring of Tigers
- c) Assist Supreme Court in AI driven research
- d) Registration of complaints related to sexual harassment of women.

**Answer: C**

**Explanation:**

- The **Supreme Court** has unveiled its **Artificial Intelligence (AI) portal SUPACE**, designed to make research easier for judges, thereby easing their workload.
- **Supreme Court Portal for Assistance in Court's Efficiency (SUPACE)** is a tool that collects relevant facts and laws and makes them available to a judge.
- This AI tool is unique because it **produces results customized to the need of the case** and the way the judge thinks.
- It is not designed to take decisions, but only to process facts and to make them available to judges looking for an input for a decision.
- It fully retains the autonomy and the discretion of the judge in deciding the case, though at a much, much faster pace because of the readiness with which the information is made available by the AI.

2. EatSmart Cities Challenge and Transport 4 All Challenge, recently in news, was launched by?

- a) Ministry of Housing & Urban Affairs
- b) NITI Aayog
- c) Ministry of Road Transport and Highways
- d) None of the above

**Answer: A**

**Explanation**

Ministry of Housing & Urban Affairs launched the EatSmart Cities Challenge and Transport 4 All Challenge at an online event. All the Smart Cities Mission cities, capitals of states and union territories (UTs), and all cities with a **population of over 5 lakhs**—are eligible for both the Challenge.

**EatSmart Cities Challenge**

- The EatSmart Cities Challenge aims to motivate **Smart Cities to develop a plan that supports a healthy, safe and sustainable food environment** supported by institutional, physical, social, and economic infrastructure along with the application of 'smart' solutions to combat food related issues.
- The EatSmart Cities Challenge is envisioned as a competition among cities to recognize their efforts in adopting and scaling up various initiatives under **Eat Right India**.



- d) looking into specific complaints regarding deprivation of rights and safeguards of minorities and taking up such matters with the appropriate authorities;
  - e) getting studies to be undertaken into the problems arising out of any discrimination against minorities and recommending measures for their removal;
  - **Composition:** The Commission consists of: a Chairperson, a Vice- Chairperson and Five Members. i.e. **total of 7 persons** to be nominated by the Central Government from amongst persons of eminence, ability and integrity.
  - **Tenure:** Each Member holds office for a period of **three years** from the date of assumption of office.
4. Anamaya is an initiative of:
- a) **Ministry of Tribal Affairs.**
  - b) **Ministry of Skill Development and Entrepreneurship.**
  - c) **Ministry of Culture.**
  - d) **None of the above.**

**Answer: A**

**Explanation:**

- To address the tribal health challenges in India, the Centre recently launched a 'Tribal Health Collaborative' (THC) - Anamaya.
- The Collaborative is a multi-stakeholder initiative of **Ministry of Tribal Affairs (MoTA)** supported by **Piramal Foundation and Bill and Melinda Gates Foundation (BMGF)**.
- It brings together governments, philanthropists, national and international foundations, NGOs/CBOs to end all preventable deaths among tribal communities of India.
- It aims to build a sustainable, high-performing health eco-system to address the key health challenges faced by the tribal population of India.
- THC will begin its operations with 50 tribal, Aspirational Districts (with more than 20% ST population) across 6 high tribal population states.
- Over a 10-year period, the work of the THC will be extended to 177 tribal Districts as recognised by the MoTA.

#### **Other Initiatives For Tribal Health**

- The Tribal Ministry has created a roadmap to address tribal health issues through the **Tribal Health Action Plan**. The roadmap proposes to establish 500 Primary Health Centres and 100 Community Health Centres over the next 2 years in THC states.
- It is also proposed to launch the Sickle Cell Disease plan in June. Besides plans for integration of 5000 tribal healers with the health system there are plans to establish a tele-medicine facility in the remotest tribal blocks.



- Early diagnosis and treatment of malaria reduces disease and prevents deaths. It also contributes to reducing malaria transmission.

### **Malaria Control Efforts In India**

#### **National Vector Borne Disease Control Programme**

- In 2003, malaria control was integrated with other vector borne diseases under the National Vector Borne Disease Control Programme (NVBDCP).
- NVBDCP is concerned with prevention and control of vector borne diseases namely **Malaria, Filariasis, Kala-azar, Dengue and Japanese Encephalitis (JE)**.
- The Directorate of NVBDCP is the nodal agency for programme implementation in respect of prevention and control of these vector borne diseases.

#### **National Framework for Malaria Elimination (NFME)**

- Later, in 2016, the Indian government intensified malaria elimination efforts with the launch of the National Framework for Malaria Elimination (NFME) 2016-2030 with the goal of eliminating malaria (zero indigenous cases) throughout the entire country by 2030.
- Under NFME, all States/UTs have been grouped into *four categories*. Based on their malaria burden, specific objectives have been established for each of these categories and various implementation measures are devised.
- NFME is implemented by the Directorate of National Vector Borne Disease Control Programme.

#### **National Strategic Plan (NSP) for Malaria Elimination (2017-2022)**

- NFME was followed by the national strategic plan for malaria elimination (2017-22). Launched in 2017, the goals of NSP strategy are phased elimination of malaria in India.
- **Objectives of NSP**
  - Achieve universal coverage of case detection and treatment services in endemic districts to ensure 100% diagnosis of all suspected malaria cases and complete treatment of all confirmed cases.
  - Provide effective programme management and coordination at all levels to deliver a combination of targeted interventions for malaria elimination.

### **6. Which of the following are zoonotic pathogens:**

- |              |                     |
|--------------|---------------------|
| a) Bacteria  | b) Virus            |
| c) Parasites | d) All of the above |

**Answer: D**

#### **Explanation:**

- The World Health Organization (WHO), World Organization for Animal Health and the United Nations Environment Programme have laid down fresh guidelines for governments to reduce the risk of transmission of zoonotic pathogens in food production and marketing chains.

- The call for action comes as the world is dealing with a resurgence of Covid cases, although there is no evidence that consumption of food is implicated in the transmission of the pandemic.

### **Zoonosis**

- A zoonosis (zoonotic disease or zoonoses -plural) is an infectious disease that jumps from animals to humans. Zoonotic pathogens may be **bacterial, viral or parasitic**.
- They can spread to humans through direct contact with animals or through food, water and the environment.
- According to the United Nations Environment Programme (UNEP), 60% of all infectious diseases in humans are zoonotic, and about 75% of all emerging infectious diseases are zoonotic in nature.
- Among zoonoses that emerged or re-emerged recently, the UNEP counts Ebola, Bird flu, Middle East Respiratory Syndrome (MERS), Rift Valley fever, Severe Acute Respiratory Syndrome (SARS), West Nile virus, Zika virus disease, and COVID-19.

### **Guidelines**

- Suspension of trade in live caught wild animals of mammalian species for food or breeding, as well as a shutdown of food markets that sell them.
- Governments should bolster regulations to improve standards of hygiene and sanitation in traditional food markets.
- Conduct risk assessments to provide the evidence base for developing regulations to control the risks of transmission.
- Food inspectors should be adequately trained to ensure that businesses comply with regulations to protect consumers' health and are held accountable.
- Developing and implementing food safety information campaigns. These campaigns should communicate the principles of food safety and the risks of transmission of zoonotic pathogens.
- Strengthening animal health surveillance systems for zoonotic pathogens to include both domestic and wild animals. This will provide an early warning for pathogen emergence and help expedite development of control measures.

### **7. National Commission for Scheduled Castes is a:**

- |                        |                      |
|------------------------|----------------------|
| a) Constitutional Body | b) Executive Body    |
| c) Statutory Body      | d) None of the above |

**Answer: A**

### **Explanation:**

- The Centre recently launched the Online Grievance Management Portal of National Commission for Scheduled Castes (NCSC).
- The portal is designed in collaboration with the Bhaskaracharya Institute for Space Applications and Geoinformatics (**BISAG-N**), a Centre of Excellence under the **Ministry of Electronics and Information Technology**.



- The Prime Minister is the ex-officio chairman of the PM CARES Fund and **Minister of Defence, Minister of Home Affairs, and Minister of Finance**, Government of India are ex-officio Trustees of the Fund.
- The fund consists entirely of voluntary contributions from individuals/organizations and **does not get any budgetary support.**
- **Objectives**
  - Undertake and support relief or assistance of any kind relating to a public health emergency or any other kind of emergency.
  - Give financial assistance, provide grants of payments or take such other steps for the affected population.

#### **Additional Information**

##### **Oxygen Production In The Country**

- Oxygen has applications in the iron and steel industry, hospitals, pharmaceutical units that manufacture vials, and the glass industry. According to industry experts, India has the capacity to produce more than 7,000 metric tonnes of medical oxygen.
- Last year, during the first wave of the pandemic, smaller manufacturers that produced industrial oxygen were allowed to produce medical oxygen by changing certain specifications.
- Currently, most states have diverted their entire oxygen production for medical use. Several manufacturers have also stopped nitrogen and argon gas production and diverted all resources for oxygen production.
- This has helped to expand the medical oxygen production capacity.

##### **Issues In Oxygen Transport**

- Manufacturers prepare liquid oxygen with 99.5% purity, which is stored in jumbo tankers, and transported to distributors in cryogenic tankers at a specified temperature. **Cryogenic tanks** are designed for storage and transport at sub- zero temperatures.
- At distributor level, a **process of regasification** is followed to convert the oxygen into gaseous form and fill it in jumbo cylinders. These cylinders then go to smaller suppliers or directly to hospitals.
- Now the problem is that **India does not have enough cryogenic tankers** to ensure 24x7 road transport of medical oxygen. The problem is worse in rural areas, which are going through a rise in Covid cases but have no large storage tankers, and in smaller nursing homes, which **rely on daily supply of oxygen cylinders.**
- Smaller suppliers have also complained they do not have enough jumbo cylinders to keep the supply steady.
- Also, when oxygen is being transported from one state to another, the travel time it takes from the manufacturer to a patient's bed has increased from 3-5 days to 6-8 days. It takes even longer to transport oxygen in remote locations.

- The increase in cost for transport and logistics has increased the cost of refilling cylinders. A cylinder that would earlier cost Rs 100-150 for refiling, now costs Rs 500-2000.

**9. Consider the following statements regarding Stand-Up India scheme:**

1. Only SC and ST entrepreneurs are eligible under the scheme.
2. Only greenfield projects are eligible under the scheme.
3. Stand-Up India scheme covers all branches of Scheduled Commercial Banks.

Which of the statements given above is/are correct?

- |                 |                 |
|-----------------|-----------------|
| a) 1 only       | b) 2 only       |
| c) 1 and 3 only | d) 2 and 3 only |

**Answer: D**

**Explanation:**

- The Ministry of Finance recently released the performance data of the Stand Up India scheme.
- Government has sanctioned more than Rs 25,586 crore to over 1,14,322 accounts since the beginning of the scheme.
- Women entrepreneurs are the biggest beneficiaries of the scheme with 93,094 applications involving Rs 21,200 crore sanctioned.
- The number of accounts and the amount sanctioned has increased by 25.2 % and 25 % respectively over last year.

	NO OF ACCOUNTS	SANCTIONED AMOUNT (CRORE)
<b>SC</b>	16,258	Rs 3,335.87
<b>ST</b>	4,970	Rs 1,049.72
<b>Women</b>	93,094	Rs 21,200.77
<b>TOTAL</b>	114,322	Rs 25,586.37

As on 23.03.2021

**Stand-Up India Scheme**

- The scheme was launched in 2016 to promote entrepreneurship amongst **women, Scheduled Castes (SC) & Scheduled Tribes (ST) categories** above 18 years of age.
- It provides loans for setting up **greenfield enterprises in manufacturing, services or the trading sector & activities allied to agriculture**. In this context, green field signifies the first enterprise of the beneficiary.
- The scheme facilitates bank loans between Rs 10 lakh to Rs 1 crore to at least one Scheduled Caste/ Scheduled Tribe borrower and at least one woman borrower per bank branch of Scheduled Commercial Banks.
- The scheme, which covers all branches of Scheduled Commercial Banks, can be accessed in three potential ways: Directly at the branch, Through Stand-Up India Portal, and Through the Lead District Manager (LDM).
- The scheme has been extended up to 2025.

**10. The RBI recently launched G-SAP. Which of the following statements are true regarding G-SAP?**

- a) The RBI will sell government securities under G-SAP.
- b) The RBI will purchase government securities under G-SAP.
- c) The RBI will sell and purchase government securities under G-SAP.
- d) None of the above.

**Answer: B**

**Explanation:**

- The RBI has launched a Government Securities Acquisition Programme (G-SAP).
- G-secs are tradable debt securities issued by RBI on behalf of the central government and can have a tenure ranging from a few days to 40 years. Since they are issued by the government, they carry no risk of default.
- Under, G-SAP, RBI will commit to a specific amount of open market purchases of government securities.
- For the first quarter of the financial year 2021-22, RBI will conduct a G-SAP of Rs 1 lakh crore. The aim is to ensure stable financial conditions for the economic recovery to accelerate.

**Impact of G-SAP**

- Market participants have always wanted to know RBI's Open Market Operations (OMO) purchase calendar. OMO refers to the buying and selling of government securities by the central bank of a country.
- The RBI has purchased Rs. 3.13 trillion worth of bonds from the secondary market in FY21. However, it was carried out in an ad hoc manner with the market waiting for RBI purchase announcements on a weekly basis.
- Now that RBI will announce its purchase decisions beforehand under G-SAP, market participants will be able to plan their borrowing programme.
- It will also provide certainty to the bond (securities) market and reduce volatility in bond prices.

**Variable Rate Reverse Repo Auctions**

- The central bank also announced that it will conduct 14-day Variable Rate Reverse Repo (VRRR) auctions of longer maturity.
- Reverse repo operations are conducted by RBI to borrow money from banks. It is used to control liquidity (amount of money) and inflation in the economy. VRRR auctions will be conducted to remove excess liquidity from the markets.
- Moreover, as banks will keep surplus funds with RBI at close to the reverse repo rate for longer periods, the incentive to lend at lower rates will reduce.
- The amount and duration of these auctions will be decided based on the evolving liquidity and financial conditions.



- The Seed Fund will be disbursed to eligible startups through eligible incubators across India. Grants of up to **Rs 5 Crores** shall be provided to the eligible incubators selected by the EAC.
- The selected incubators would provide grants of **up to Rs 20 lakhs** for validation of Proof of Concept, or prototype development, or product trials to startups.
- Furthermore, investments of **up to Rs 50 lakhs** would be provided to the startups for market entry and commercialization.

**Impact**

- Startup India Seed Fund Scheme will act as a bridge between ideas and their implementation.
- It will create a strong startup ecosystem, particularly in Tier 2 and Tier 3 towns of India, which are often deprived of adequate funding.
- Independent & ambitious thinking in the startup ecosystem will encourage entrepreneurship and create a culture that will recognise innovation. These startups will also help create huge employment opportunities.

**Startup India Scheme**

Launched in 2016, by the Ministry of Commerce and Industry (DPIIT), Startup India is a flagship initiative of the government that aims to:

- ✓ Build a strong ecosystem that supports the growth of startup businesses.
- ✓ Drive sustainable economic growth.
- ✓ Generate large scale employment opportunities.

**12. The National Company Law Appellate Tribunal (NCLAT) can hear appeals from which of the following?**

- a) National Company Law Tribunal.
- b) Insolvency and Bankruptcy Board of India.
- c) Competition Commission of India.
- d) All of the above

**Answer: D**

**Explanation**

- The National Company Law Appellate Tribunal (NCLAT) recently gave its decision in an appeal moved by the Enforcement Directorate (ED) against an order of the National Company Law Tribunal (NCLT).
- The NCLAT held that rules and actions under the Insolvency and Bankruptcy Code (IBC) would hold precedence over other laws such as attachment of property by the ED under the Prevention of Money Laundering Act (PMLA).
- This is not the first time the NCLAT has held that laws of IBC would hold precedence over others such as attachment of properties under PMLA. Earlier, during the insolvency resolution of Bhushan

Steel and Power Limited, the NCLAT had held that the ED cannot attach the properties of the company.

- Attachment is a legal process in which a particular law enforcement agency takes control of the property during the course of the trial.

### **Insolvency and Bankruptcy Code**

- The Insolvency and Bankruptcy Code (IBC), 2016 provides a time bound process for resolving insolvency in companies and also among individuals.
- **Insolvency** is a situation where individuals or companies are unable to repay their outstanding debt.
- If a default (failure to repay debt) occurs, the IBC allows the creditors of the company or the company itself to initiate a Corporate Insolvency Resolution Process (CIRP) by filing an application before the National Company Law Tribunal (NCLT).
- Under IBC, a **resolution professional** is appointed that conducts the insolvency resolution process, takes over the management of a company, assists creditors in the collection of relevant information, and manages the liquidation process.
- **Liquidation** is the process of bringing a business to an end by selling its assets.

### **Background Of The Current Case**

- In February 2019, the NCLT had asked the resolution professional of Sterling SEZ Infrastructure Limited and Sterling International Enterprises Limited to take control of the properties of the companies and deal with them as per the rules of IBC.
- The NCLT had taken this decision even though the ED had attached the assets of both the companies in May 2018.
- The ED challenged the NCLT order claiming the assets had been attached under the right provisions of PMLA and that the rules of IBC would not be applicable in criminal proceedings under PMLA.
- But as mentioned above, the NCLAT held that rules and actions under the Insolvency and Bankruptcy Code (IBC) would hold precedence over attachment of property by the ED under PMLA.
- If properties of the debtor (company) would not be available, then the resolution/sale under IBC would not be possible. Therefore, any obstruction to this will have to be removed.
- The issue of IBC's precedence over actions under all other laws is **pending in the Supreme Court** as the ED had approached the Supreme Court in July, 2020 to seek clarification on it.

### **NCLT**

- Established under Companies Act 2013 and constituted in 2016, the NCLT is the adjudicating authority for insolvency resolution process of companies under the Insolvency and Bankruptcy Code.
- NCLT bench is chaired by a Judicial member who is supposed to be retired/Serving High Court Judge and a Technical member who is from Indian Corporate Law Service, ICLS Cadre.
- Decisions of NCLT may be appealed to the National Company Law Appellate Tribunal, the decisions of which may further be appealed to the Supreme Court.

**NCLAT**

- The National Company Law Appellate Tribunal (NCLAT) is a tribunal which was formed by the central government under the Companies Act, 2013.
- The tribunal is responsible for hearing appeals from the orders of National Company Law Tribunal (NCLT) and Insolvency and Bankruptcy Board of India.
- It also hears appeals from any direction issued, decision made, or order passed by the Competition Commission of India (CCI).
- The NCLAT includes a Chairperson, a judicial member, and a technical member.

**13. Consider the following statements about Asian Development Bank (ADB):**

1. ADB is headquartered in Tokyo.
2. All the members of ADB are from Asia.

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: D**

**Explanation:**

- The Asian Development Bank has recently released the Asian Development Outlook 2021. It is an annual publication produced by the Asian Development Bank (ADB).
- It analyses economic and development issues in developing countries in Asia. This includes forecasting the inflation and gross domestic product growth rates of countries.

**Highlights Of The Report**

- Growth is gaining momentum across developing Asia, but new Covid outbreaks show the pandemic is still a threat. Assuming that Covid outbreaks are brought under control, domestic demand and economic activity will continue to strengthen this year and the next year.
- Developing Asia's growth is forecast to rebound to 7.3% in 2021, and moderate to 5.3% in 2022.
- Inflation in developing Asia is projected to fall to 2.3% in 2021 due to low food price pressures and is expected to rise by 2.7% in 2022.
- New Covid outbreaks or delayed vaccine rollouts could increase disruptions to mobility and economic activity, deepening the crisis in some economies.
- Other risks to the outlook include geopolitical tensions, production bottlenecks, limited vaccine effectiveness, and financial troubles due to tightening financial conditions.

**Highlights From India**

- The Outlook has raised its forecast for India's growth in 2021-22 to 11%, from 8% earlier. The growth is expected to moderate down to 7% in 2022-23.

- Government's expenditure and supportive financial policies, along with the vaccine roll-out programme this year, would aid India's revival.
- The recent fiscal stimulus in the US, India's largest export market, will also support India's revival, but a severe second Covid wave is threatening the recovery.
- Inflation is projected to moderate as good harvests and supply chain recovery reduce domestic food inflation. However, increasing oil prices may increase the pressure on inflation. India's average inflation rate would slow down to 5.2% this year from 6.2% last year, and further fall down to 4.8% in 2022-23.
- The second wave of Covid cases in India could impact growth, especially if vaccine roll-out fails to reduce the spread of Covid. Another risk is a further tightening of global financial conditions.
- There could also be an impact on private investment, as rising bad loans could discourage India's banks from fresh lending.

#### **Asian Development Bank (ADB)**

- The Asian Development Bank (ADB) is a regional development bank established in 1966. It is headquartered in **Manila, Philippines**.
- From 31 members at its establishment in 1966, ADB has grown to 68 members—of which 49 are from within Asia and the Pacific and 19 outside.
- ADB assists its members, and partners, by providing loans, technical assistance, grants, and equity investments to promote social and economic development.
- ADB maximizes the development impact of its assistance by facilitating policy dialogues, providing advisory services, and mobilizing financial resources through co-financing operations.

#### **14. In India, Mutual Funds are regulated by:**

- a) RBI
- b) SEBI
- c) SIDBI
- d) None of the above

**Answer: B**

#### **Explanation**

Securities and Exchange Board of India (SEBI) has issued a circular regulating fund manager compensation. The new rule makes it compulsory for top officials of mutual funds to invest 20 % of their salaries in their own schemes. This rule will be effective July 1, 2021.

#### **Background**

- Last year, Franklin Templeton had closed six funds. An audit alleged that some employees of the mutual fund sold their holdings in these funds just before the closure of the six schemes.
- It has also been found that some funds houses take excessive risks for higher returns.
- With the current change, SEBI wants to ensure that the interests of the fund managers are aligned to those of the mutual fund unit holders (investors).

## New Rules On Compensation

- A minimum 20% of the compensation of mutual fund managers and other key personnel in a mutual fund house should be in the form of units of the mutual fund schemes they manage.
- Key personnel refers to chief executive officer, chief investment officer, research analysts and some others who are directly involved in running each scheme.
- Moreover, the 20% compensation will be proportionate to the assets under management of the schemes in which the key employee of the fund house has a role or oversight.
- For example, a CEO who has overall oversight will have 20% of her compensation spread across all the schemes.
- On the other hand, a fund manager who manages only one fund will have at least 50% of this type of compensation in the scheme she manages. The other half would be from funds whose risk profile (as defined by SEBI) are the same or higher.

### SKIN IN THE GAME JULY ONWARDS

<p>➤ Sebi's latest directive affects a fund house's <b>MD, CEO, CIO, COO, fund managers and research analysts</b></p> <p>➤ It will be effective from July 1, 2021, with the issued units having a <b>three-year lock-in</b></p>	 <p>➤ The <b>lock-in rule will not be applied if the executive retires</b> from the fund house</p> <p>➤ Fund houses can have a policy of <b>loan against the units</b> in case the executive faces any medical emergencies, or on humanitarian grounds</p>
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## Conditions For Holding The Units

- These units allotted to key employees must be **locked in for three years**. The lock-in rule will continue even if the person leaves the fund house.
- If the employee retires at the age of superannuation, then the units can be redeemed. The units cannot be sold if the employee retires before the age of superannuation.
- Key employees are however allowed to borrow from the fund house in case of medical emergency or humanitarian grounds against the units held in lock-in.

## Benefits

- The current change will ensure that fund houses actually link the pay of fund managers to performance.
- It will boost transparency in fund house compensations and increase accountability.
- It will give a lot of psychological comfort to investors, as the fund manager will share the risks and rewards associated with the fund.

## Concerns

- The mutual fund sector is concerned that the current change will lead to conflicts in the personal finance goals of the fund managers.
- This could lead to a situation where talented fund managers move out of the mutual fund sector, which will impact the long-term prospects of the sector.

## Regulation Of Mutual Funds

- In India, Mutual Funds are regulated by SEBI. The objectives of SEBI are – to protect the interest of investors in securities and to promote the development of and to regulate the securities market.



- It also helps to build trust among importers as the food ordered by them, is in accordance with the required specifications.

#### **Codex Alimentarius Commission**

- The Codex Alimentarius Commission (CAC) was established in 1963 by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) to implement the joint **FAO/WHO** Food Standards Program.
- The purpose of the Program is to protect the health of consumers, ensure fair practices in the food trade and coordinate international food standardization work.
- The CAC is an *intergovernmental body*, with 189 Codex Members made up of 188 Member Countries and 1 Member Organization (The European Union). **India** became a member in 1964.

#### **Codex Committee on Spices and Culinary Herbs (CCSCH)**

- CCSCH was formed in 2013, to develop and expand worldwide standards for spices and culinary herbs. CCSCH is chaired by India and Spices Board India is its Secretariat.
- It is mandated to develop science-based quality standards for spices and culinary herbs.
- In its past four sessions, the committee developed and finalized Codex standards for four spices, viz. dried or dehydrated forms of black/white/green pepper, cumin, thyme, and garlic.

#### **16. MACS1407 is a variety of:**

- a) Wheat
- b) Rice
- c) Soybean
- d) None of the above

**Answer: C**

#### **Explanation:**

- MACS- Agharkar Research Institute (ARI), Pune, an autonomous institute of the Department of Science & Technology, in collaboration with Indian Council of Agricultural Research (ICAR), has developed a new variety of soybean called MACS 1407.
- India is striving to be among the world's major producers of soybean. In 2019, India produced around 90 million tons of soybean, widely cultivated as oil seeds as well as a cheap source of protein for animal feed and many packaged meals.

#### **MACS1407**

- MACS 1407 was developed using the conventional cross breeding technique, which gives 39 quintals per hectare making it a high yielding variety. It is also resistant to major insect-pests.
- Its thick stem, higher pod insertion (7 cm) from ground, and resistance to pod shattering make it suitable even for mechanical harvesting.
- It is highly adaptive to sowing from 20 June to 5 July without any yield loss. This makes it resistant to the vagaries of monsoon as compared to other varieties.







**Benefits**

- The certification of hatcheries will help farmers easily identify good quality seed producers.
- Overall, certified aquaculture products will help exporters to export their consignments to markets under stringent food safety regulations without the fear of getting rejected.

**MPEDA**

- Headquartered in Kochi, MPEDA was established in 1972 under the Marine Products Export Development Authority Act (MPEDA), 1972.
- It is a statutory body that functions under the **Ministry of Commerce and Industry**.
- MPEDA acts as a nodal agency to develop, expand and improve the quality of seafood industry by collaborating with other governments and meeting the requirement of the seafood across the globe.

**20. Which of the following countries are OPEC members?**

1. Qatar.
2. Nigeria.
3. Iraq.
4. Venezuela.
5. Indonesia.

Choose the correct option using the codes below:

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

**Answer: A**

**Explanation:**

India has asked its State refiners (HPCL, IOCL etc.) to review contracts for buying crude oil from Saudi Arabia and negotiate more favourable terms.

**Contract Purchase**

- Indian firms buy two-third of their purchases on term or fixed annual contracts. The term contracts ensure assured supplies to the buyer, but the pricing favours only the suppliers.
- While buyers have to purchase all the contracted quantity, Saudi and other producers have the option to reduce supplies in case OPEC decides to keep production artificially low to boost prices.
- Moreover, under term contracts, the buyers have to pay an average official price announced by the producer.

**Spot Purchase**

- In contrast, in case of spot purchase, the pricing is done on the day of the loading. This helps the buyer to get the advantage of any drop in international oil rates.

- Spot purchase offers flexibility in managing demand and also creates an opportunity to procure oil at lower prices.

### **Steps Planned By India**

- Due to the above-mentioned reasons, the government has asked state-run refiners to reduce dependence on Saudi oil and diversify sources.
- Indian refiners are also planning to reduce crude shipments under term contracts, including from Saudi Arabia, and are looking to increase spot purchase to manage demand in a better way.
- Indian refiners have already raised spot purchases from 20 per cent a decade back to 30-35 per cent of the total oil bought now.
- India is the third-largest consumer of oil, and it hopes to change the terms of engagement with big suppliers by using its collective buying power.

### **Future Outlook**

- A reduction in crude oil imports from Saudi Arabia would likely lead to increased imports from other gulf countries and the United States.
- Saudi Arabia will, however, continue to be one of the largest sources for the import of crude oil for India due to its geographical proximity and India's large crude oil requirements.

### **OPEC**

- The Organization of the Petroleum Exporting Countries (OPEC) is an intergovernmental organization, founded in 1960 in Baghdad by the first five members (Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela), and headquartered since 1965 in **Vienna, Austria**.
- The current OPEC members are Algeria, Angola, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, the Republic of the Congo, Saudi Arabia (the de facto leader), the United Arab Emirates and Venezuela.
- Its **mission** is to ensure the stabilization of oil markets, in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers, and a fair return on capital for those investing in the petroleum industry.
- The organization is also a significant provider of information about the international oil market.

### **21. Consider the following statements regarding PM KUSUM scheme:**

- 1. PM KUSUM was launched by Ministry of Power.**
- 2. Units under PM KUSUM can only be established on uncultivable land.**

**Which of the statements given above is/are correct?**

- |                        |                           |
|------------------------|---------------------------|
| <b>a) 1 only</b>       | <b>b) 2 only</b>          |
| <b>c) Both 1 and 2</b> | <b>d) Neither 1 nor 2</b> |

**Answer: D**

**Explanation**

The *first farm-based solar power plant* under the Prime Minister's **Kisan Urja Suraksha Evum Utthan Mahabhiyan (KUSUM) scheme** was recently established in Jaipur district's Kotputli tehsil with a provision for production of 17 lakh units of electricity every year.

**PM KUSUM**

- The PM KUSUM scheme was launched by **Ministry of New and Renewable Energy (MNRE)** in 2019, to increase the **income of farmers and provide sources for irrigation**.
- The scheme aims to add solar and other renewable capacity of 30.8 gigawatt (GW) by 2022 with total central financial support of Rs 34,035 crore.
- State Nodal Agencies (SNAs) of MNRE coordinate with States/UTs, discoms and farmers for implementation of the scheme.

**Scheme Components**

- **Component A:** 10,000 MW of decentralized Ground Mounted Grid Connected Renewable Power Plants of individual plant size up to 2 MW.
- **Component B:** Installation of 20 lakh standalone Solar Powered Agriculture Pumps of individual pump capacity up to 7.5 HP.
- **Component C:** Solarisation of 15 lakh Grid-connected Agriculture Pumps of individual pump capacity up to 7.5 HP.

**Scheme Benefits**

- The scheme will open a stable and continuous source of income to the rural land owners for a period of 25 years by utilisation of their dry/uncultivable land.
- Further, in case cultivated fields are chosen for setting up solar power project, the farmers will continue to grow crops as the solar panels are to be set up above a minimum height.
- It would ensure that sufficient local solar/ other renewable energy based power is available for feeding rural load centres and agriculture pump-set loads, which require power mostly during the day time.
- As these power plants will be located closer to the agriculture loads or to electrical substations in a decentralized manner, it will result in reduced transmission losses for discoms.
- The solar pumps will save the expenditure incurred on diesel for running diesel pump and provide the farmers a reliable source of irrigation through solar pump apart from preventing harmful pollution from running diesel pump.

**22. e-SANTA was launched by:**

- a) Ministry of Commerce and Industry.**
- b) Ministry of Electronics and Information Technology.**
- c) Ministry of Micro Small and Medium Enterprises.**
- d) None of the above.**

**Answer: A**

**Explanation:**

- The Ministry of Commerce and Industry recently inaugurated e-SANTA, an electronic marketplace providing a platform to connect aqua farmers and the buyers.
- e-SANTA is a web portal, which stands for **Electronic Solution for Augmenting NaCSA farmers' Trade in Aquaculture**.
- **National Centre for Sustainable Aquaculture (NaCSA)** is an extension arm of Marine Products Export Development Authority (MPEDA), Ministry of Commerce & Industry.
- The objectives of NaCSA are to encourage and uplift the small and marginal farmers through organization of clusters and maintaining best management practices in shrimp culture.
- In traditional aqua farming, farmers face monopoly and exploitation. Further, exporters face inconsistency and quality gaps in the products purchased, and traceability is a big issue in international trade.

**Benefits of e-SANTA**

- It will revolutionize traditional aquafarming by providing cashless, contactless and paperless electronic trade platform between farmers and exporters.
- The farmers have the freedom to list their produce and quote their price while the exporters have the freedom to list their requirements and also to choose the products based on their requirements such as desired size, location, harvest dates etc.
- This enables the farmers and buyers to have greater control over the trade and enables them to make informed decisions.
- It will enable the farmers to get a better price by eliminating the middlemen. The exporters will be able to directly purchase quality products from the farmers enhancing traceability, a key factor in international trade. By doing so, it will enhance India's reputation in the global trade.
- The platform provides detailed specification of each product listing and it is backed by an end to end electronic payment system.
- The platform is available in many languages, which will help the local population.

**23. Which of the following is correctly paired?**

1. Puthandu: Kerala
2. Bohag Bihu: Assam
3. Vishu: Tamil Nadu

**Choose the correct answer from the codes given below:**

- |                 |                 |
|-----------------|-----------------|
| a) 1 only       | b) 2 only       |
| c) 1 and 3 only | d) 2 and 3 only |

**Answer: B**

**Explanation:**

- The Vice President recently greeted the people on the festivals of 'Ugadi, Gudi Padava, Chaitra Sukladi, Cheti Chand, Vaisakhi, Vishu, Puthandu, Vaishkhadi and Bohag Bihu'.
- These festivals mark the beginning of traditional New Year and reflect the country's composite culture and rich heritage.
- People of Andhra Pradesh and Telangana call it 'Ugadi', and in Karnataka, it is 'Yugadi'.
- In Maharashtra, it is celebrated as 'Gudi Padwa', and in Tamil Nadu, it is observed as 'Puthandu'.
- In Kerala the occasion is celebrated as 'Vishu' and Punjab celebrates it as 'Vaisakhi' and in Odisha, it is called 'Pana Sankranthi'.
- In West Bengal, 'Poila Boishakh' ushers in the new year and in Assam, 'Bohag Bihu' marks the beginning of the new year.

**24. Consider the following statements regarding Trachoma:**

- I. Trachoma, caused by viral eye infection, is a leading cause of blindness worldwide.
- II. Recently, Gambia became the first African state to eliminate Trachoma.

Which of the above statements is/are Correct?

- |                  |                     |
|------------------|---------------------|
| a) I Only        | b) II Only          |
| c) Both I and II | d) Neither I nor II |

**Answer – D**

**Explanation**

- The Gambia has eliminated trachoma, one of the leading causes of blindness worldwide.
- It has become the **second African state** to achieve this feat, after **Ghana did in 2018**.
- Trachoma is a **bacterial eye infection** that damages the eyelids and causes the eyelashes to turn inwards.
- **It is one of 20 neglected tropical diseases** that the WHO says disproportionately affect the world's poorest people. If not corrected with surgery, it can lead to irreversible vision loss and blindness.

**25. Zhurong, recently seen in news, is the name of**

- |                                   |                             |
|-----------------------------------|-----------------------------|
| a) China's Space Station          | b) China's First Mars rover |
| c) China's Anti-Satellite Missile | d) None of the above        |

**Answer – B**

**Explanation**

- China has announced the name of its **first Mars rover as Zhurong**.



**India Specific Observation**

- India has fallen 28 places in the report. It has now been **ranked 140** among 156 countries. [In 2020, India's rank – 112/153.]
- India is the **third-worst performer** in the South Asian region, having closed 62.5 per cent of its gap. Only Pakistan and Afghanistan ranked below India.
- Because of its large population, India's performance has a substantial impact on the region's overall performance
- **Performance on Political Empowerment**
  - It noted that **most of the decline was seen on the Political Empowerment** sub-index, where India went back 13.5 percentage points. The report attributed this to the fall in the share of women among ministers.
  - As per the report, the share of women among ministers in India declined from 23.1% in 2019 to 9.1% in 2021. The **share of women in parliament remains stagnant** at 14.4% and the share of the last 50 years in which a woman has been head of state is 15.5%.
  - **Bangladesh is the only country** where more women have held head-of-state positions than men in the past 50 years.
  - India is **one of the worst performers in South Asia**, trailing behind neighbours Bangladesh, Nepal, Bhutan, Sri Lanka and Myanmar.
- **Education, Health and Survival**
  - In the **index of education** attainment, **India has been ranked at 114**. But the two indices where India has fared the worst are “**Health and Survival**”, which includes the sex ratio, and **economic participation of women**.
  - In the **Health and Survival index that India has fared the worst**, ranking at 155 — the only country to have fared worse is China. The report points to a skewed sex ratio as a major factor for this performance.
- **Economic Empowerment**
  - The report notes that the economic participation gender gap actually **widened in India by 3 percent this year**. The share of women in professional and technical roles declined further to 29.2 per cent.
  - The share of women in senior and managerial positions also is at 14.6 per cent and only 8.9 per cent firms in the country have top female managers.
  - The estimated **earned income of women in India is only one-fifth of men's**, which puts the country among the bottom 10 globally on this indicator.

**Additional Information**

Reasons behind the existing gap:

**1. Occupational Segregation:**

- Preference is given to male workers while recruiting or promoting to senior roles.

- The rate of female participation in the paid labour market is generally low, and is primarily concentrated in rural areas in the agricultural sector.
  - Women's participation is also higher in light industries and the unorganized sector, where the wages are usually lower.
2. **Cultural Barriers:**
- Women are not promoted to seek gainful employment outside their home.
  - Due to role stereotyping, childcare, cooking etc. is viewed primarily as a women's job.
  - It leads to interrupted careers of women (career-breaks women take for certain personal and societal reasons)
3. **Education and Training:**
- Biased socialisation processes do not encourage women to pursue higher education or to upgrade their skills.
  - The literacy rate for women in India is far lower than the rate for men, and it has been observed that many girls drop out of school and fail to fully complete their education.
4. **Unpaid Work:** According to the Human Development Report 1995, women spend about two-thirds of their working time on unpaid work, while men spend only one-fourth of their time towards unpaid labour.

While dealing with questions related to women empowerment, following dimensions should be analysed:

- A. **Economic participation and opportunity** - Labour force participation; Wage equality for similar work; Estimated earned income; Legislators, senior officials and managers; Professional and technical workers
- B. **Educational attainment** - Literacy rate; Enrolment in primary education; Enrolment in secondary education; Enrolment in tertiary education
- C. **Health and survival** - Sex ratio at birth; Life expectancy
- D. **Political empowerment** - Women in parliament; Women in ministerial positions; Years with female head of state

28. E9 is a forum of nine countries that aims at achieving the goals of UNESCO's Education For All (EFA) initiative. Which of the following countries is not part of E9 initiative?

- a) Indonesia,
- b) Oman
- c) Mexico
- d) Nigeria

**Answer – B**

**Explanation**

- India attended a consultation meeting of Education Ministers of E9 countries. India was represented by Minister of State for Education Sanjay Shamrao Dhotre.

- **Theme - 'E9 initiative: Scaling up digital learning to accelerate progress towards SDG4'**
- The consultation was the first of a three-phased process to co-create an initiative on digital learning and skills, targeting marginalized children and youth, especially girls.

#### **About E9 countries**

- E9 is a forum of nine countries that aims at achieving the goals of **UNESCO's Education For All (EFA) initiative**. **Nine countries** are - Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan
- These countries represent more than half of the world's population and 70% of the world's illiterate adults.
- At the **EFA Summit in New Delhi**, the E9 initiative was **launched in 1993**. The partnership is aimed at working towards the achievement of SDG4-Education 2030.

#### **About Education For All**

- An international initiative which was first launched at the **World Conference on Education for All** by international organizations - UNESCO, UNDP, UNFPA, UNICEF and the World Bank - in Thailand in the year 1990.
- The Education for All initiative was adopted by the **Darkar Framework in April 2000** with the goal in mind that all children would receive primary education by 2015.

**29. Recently, International Virtual Election Visitors Programme (IEVP) 2021 for Election Management Bodies was held. It was hosted by**

- |   |  |
|---|--|
| <b>a) Election Commission of India</b>  | <b>b) Association of World Election Bodies</b> |
| <b>c) Election Commission of Malawi</b> | <b>d) Election Commission of Malaysia</b>      |

**Answer – A**

#### **Explanation**

- Election Commission of India hosted IEVP 2021 for Election Management Bodies (EMBs)/Organisations from 26 countries and three International Organisations.
- IEVP 2021 provided the participants an overview of the large canvas of Indian electoral process, the new initiatives taken by ECI on voter facilitation, transparency and accessibility of electoral system, ECI's response to the changing needs of training and capacity building and the new formats necessitated by COVID-19.
- It also provided insights into the elections underway in the states of Assam, Kerala, Tamil Nadu, West Bengal and the Union Territory of Puducherry.
- On the sidelines of IEVP 2021, the Chief Election Commissioner released the **maiden issue of A-WEB Journal of Elections today**. This academic journal would bridge the gap between academics and practice in electoral landscape.
- The journal highlights research papers, articles, book reviews, etc. in the area of Elections and Electoral Democracy.



- When a vote is taken and all Member States vote the same way, the decision is unanimous. **When a decision is taken by consensus, no formal vote is taken.**
- Consensus (or acclamation) is understood as the **absence of objection** rather than a particular majority.
- The concept of '**adoption without a vote**' is very close to consensus. The distinction between the two methods is often blurred. For this method, the President asks the Assembly if it wishes to adopt a draft resolution or decision, and if no representative objects he/she declares 'it is so decided'."

#### **About UN ECOSOC**

- It is one of the **six principal organs** of the UN (six principal organs of UN include - the General Assembly, Security Council, ECOSOC, Trusteeship Council, International Court of Justice, and the UN Secretariat), established in 1945 by UN Charter.
- It is responsible for coordinating the social and economic fields of the organization, specifically in regards to the 15 specialized agencies, the five regional commissions under the jurisdiction, the eight functional commissions.
- It also serves as a central forum to discuss the international social and economic issues and formulating policy recommendations addressed to the member states and the United States system.

#### **31. Consider the following statements regarding the Organization for the Prohibition of Chemical Weapons (OPCW):**

1. **Despite its extensive efforts to eliminate chemical weapons, OPCW is yet to achieve a Noble Peace Prize**
2. **OPCW is an intergovernmental organization which works to achieve the vision of a world free of chemical weapons.**
3. **It is based in The Hague, Netherlands.**

**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**

#### **Explanation**

- India's Comptroller and Auditor General (CAG), **G C Murmu**, has been appointed as **External Auditor** of the Organization for the Prohibition of Chemical Weapons (OPCW).
- He has been **appointed for a three-term** year starting 2021. India's election was a recognition of its standing among the international community which was reflected by the overwhelming support it got during election process.
- India has also been **elected as the member** state of the **Executive Council of the OPCW in the Asia regional group for another two-year term.**

**About OPCW:**

- OPCW is an **intergovernmental organisation** and the implementing body for the Chemical Weapons Convention (entered into force in April 1997).
- The organization aims to eliminate and destroy chemical weapons by prohibiting any development, acquisition, stockpiling, production, or use of chemical weapons.
- It has 193 member states and is based in **The Hague, Netherlands**.
- OPCW was **awarded the 2013 Nobel Peace Prize** "for its extensive efforts to eliminate chemical weapons".

**32. Consider the following activities:**

1. **Internet Exchanges through which the internet data is exchanged amongst ISP's, Data Centers and CDNs.**
2. **.IN Registry, managing and operation of .IN country code domain and. BHARAT IDN domain for India.**
3. **IRINN, managing and operating Internet protocol (IPv4/IPv6).**

**Which of the above activities come under the mandates of the National Internet Exchange of India (NIXI)?**

- |                 |                 |
|-----------------|-----------------|
| a) 1 and 2 Only | b) 2 and 3 Only |
| c) 1 and 3 Only | d) 1, 2 and 3   |

**Answer – D**

**Explanation**

- Three new initiatives/services of NIXI has been inaugurated by the Ministry of Electronics and Information Technology (MeitY).
- These initiatives are **IP Guru, NIXI Academy, NIXI-IP-INDEX**. These have been launched to facilitate adoption of IPv6 and create an environment to ensure smooth transition from IPv4 to IPv6.

**About the Initiatives:****1. IPv6 Expert Panel (IP Guru)**

- It is a group to **extend support** to all the Indian entities who are finding it technically challenging to **migrate and adopt IPv6**.
- It is a joint effort of DOT, MeitY & community to promote IPv6 and the service offered by this group will be free.

**2. NIXI Academy**

- To educate technical/non-technical people in India to learn and relearn technologies like IPv6. The academy comprises an IPv6 training portal in order to provide mass training to the community.
- Successful candidates (after passing examination) can take a certificate from NIXI, which will be useful to find/upgrade jobs in the Industry.

**3. NIXI-IP-INDEX**

- NIXI-IP-INDEX portal will showcase the IPv6 adoption rate in India and across the world.
- It can be used to compare IPv6 Indian adoption rate with other economies in the world.

**About NIXI**

NIXI is a not-for-profit organization (section 8 of the Companies Act 2013) working since 2003 for spreading the internet infrastructure to the citizens of India through the following activities:

- a) Internet Exchanges through which the internet data is exchanged amongst ISP's, Data Centers and CDNs.
- b) .IN Registry, managing and operation of .IN country code domain and. BHARAT IDN domain for India.
- c) IRINN, managing and operating Internet protocol (IPv4/IPv6).

**33. Consider the following Pairs**

Name of Exercise	Participating Countries
1. Exercise La Pérouse	- India & France
2. Exercise SHANTIR OGROSHENA 2021	- India & Bangladesh
3. Exercise Khanjar	- India & Kyrgyzstan
4. Exercise VARUNA 2021	- India & France

Which of the above pair(s) is/are Not Correctly Matched?

- |                 |                     |
|-----------------|---------------------|
| a) 1 and 2 Only | b) 1, 2 and 3 Only  |
| c) 1 and 3 Only | d) All of the above |

**Answer – A**

**Explanation****Exercise La Pérouse**

- Indian Navy Ships **INS Satpura** and **INS Kiltan** alongwith **P8I Long Range Maritime Patrol Aircraft**, participated for the first time in multilateral maritime exercise **La Pérouse**.
- La Perouse is an **initiative of France** and named after the 18<sup>th</sup> century French Naval explorer. The exercise was conducted in the **Eastern Indian Ocean Region**.
- The exercise completes the QUAD force representation in the French led naval exercise. Previously in 2019, La Perouse exercise saw the participation of the US, Japanese and Australia to showcase their **common goal of maritime security in the Indian Ocean and Asia-Pacific region**.
- **Naval Significance of Indo-Pacific**
  - The Indo-Pacific is slowly turning into a serious **Naval Theatre for multi-national activities** with a vision to establish a free, open, inclusive and a rule-based ordering of the Indo-Pacific to support the freedom of navigation and peaceful cooperative use of the seas.

- The goal is to respect and adhere to the international laws like the **United Nations Convention on the Law of the Sea (UNCLOS)** and peaceful resolution of territorial sea disputes instead of coercive actions to subdue a lesser developed nation.
- Indian Navy has always maintained a tactical advantage over the IOR to ensure **compliance to the internationally established Rules of the Road (ROR)** for the seas.
- On the other hand, **China** endeavours to establish a defensive perimeter around its seas (Yellow Sea, East China Sea and part of South China Sea) by **following a sea denial policy in these regions**.
- **QUAD+ France Pacific Ocean Concerns:**
  - The region of Pacific Islands **stretches from Hawaii in the north to Tonga in the south**, and Easter Island in the east to New Caledonia in the west.
  - In this region too, China is emerging as an important economic influencer in the small and remote Pacific Island nations.

#### **Exercise SHANTIR OGROSHENA 2021**

- It was a Multinational Military Exercise **organised by Bangladesh** to commemorate the birth centenary of Bangladesh's 'Father of the Nation' Bangabandhu Sheikh Mujibur Rahman and mark glorious 50 years of liberation.
- The aim of the exercise was to strengthen the procedures and enhance interoperability amongst neighbourhood countries to ensure robust peace keeping operations in the region.
- It was a UN (United Nations)- mandated counterterrorism exercise.
- Indian Army participated in Multinational Military Exercise namely '**Shantir Ogroshena**' 2021, along with contingents of **Bhutan, Sri Lanka and Bangladesh Armies**.
- Military observers from the **USA, UK, Turkey, Saudi Arabia, Kuwait and Singapore** were also in attendance throughout the exercise.

#### **Exercise Khanjar**

- **India and Kyrgyzstan**, recently, conducted a two-week **military exercise** named "Khanjar" in **Bishkek with a focus on counter-terror drills**.
- Initiated first in 2011, it was the **eight edition of the India-Kyrgyz Joint Special Forces Exercise**.

#### **Exercise VARUNA 2021**

- The 19th edition of the Indian and French Navy bilateral exercise 'VARUNA-2021' was conducted in the Arabian Sea.
- Navies of both the countries have been conducting bilateral maritime exercises since 1993. Since 2001, these exercises have been called 'VARUNA'.
- This edition of the exercise also saw the **participation of the United Arab Emirates (UAE) Navy for the first time**, making it a trilateral naval exercise.
- **Other Indo-French Joint Exercises** - Garuda (Air exercise), Shakti (Army exercise)



**Answer: A**

**Explanation**

- Scientists have developed an **electronic nose** with **biodegradable polymer** and **monomer** that can detect **hydrogen sulphide (H<sub>2</sub>S)**, a **poisonous, corrosive, and flammable gas** produced from **swamps and sewers**.
- H<sub>2</sub>S is the **primary gas** produced from the **microbial breakdown** of organic matter in the absence of oxygen, and this necessitates easy detection of its emission from sewers and swamps.
- Responding to this challenge, scientists from the **Centre for Nano and Soft Matter Sciences (CeNS), Bangalore**, an autonomous institute of the **Department of Science & Technology**, Government of India, in collaboration with their counterparts from **Saudi Arabia**, have developed an exceptionally sensitive and selective H<sub>2</sub>S Gas sensor developed by impersonating the neuron responsible for the identification of airborne molecules or olfactory receptor neuron (ORN).
- The **fabricated sensor** consists of a heterostructure consisting of **two layers** – the top layer a monomer and is realized with a **novel chemical tris (keto-hydrazone)**, which is both porous and contains H<sub>2</sub>S specific functional groups, and the **bottom layer** is the active channel layer which plays a key role in altering the current and mobility of charge carriers.

**36. Narrow-Line Seyfert, recently seen in the news, is related to**

- a) COVID-19 Vaccine
- b) Frog- species
- c) Plant-species
- d) Galaxy

**Answer: D**

**Explanation**

- Astronomers have discovered a **new active galaxy identified** as the **farthest gamma-ray emitting galaxy** that has so far been stumbled upon. This active galaxy called the **Narrow-Line Seyfert 1 (NLS1) galaxy**, which is about **31 billion light-years away**, opens up avenues to explore more such gamma-ray emitting galaxies that wait to meet us.
- Ever since 1929, when **Edwin Hubble** discovered that the **Universe is expanding**, it has been known that most **other galaxies are moving away from us**. Light from these galaxies is shifted to **longer (and this means redder) wavelengths** - in other words, it is red-shifted.
- Scientists from **Aryabhata Research Institute of Observational Sciences (ARIES)**, an **autonomous institute of the Department of Science & Technology (DST)**, in collaboration with researchers from other institutions, studied around 25,000 luminous **Active Galactic Nuclei (AGN)** from the **Sloan Digital Sky Survey (SDSS)**.
- AGN is a **major optical imaging** and spectroscopic survey of astronomical objects in operation for the last 20 years and found a unique object that emits **high-energy gamma rays** located at a **high redshift (more than 1)**. They identified it as a gamma-ray emitting NLS1 galaxy, which is a rare entity in space.



- The **Royal Swedish Academy of Sciences** notes that the foundation of the lithium-ion battery was laid during the **oil crisis of the 1970s**, around which time **Whittingham** started working on developing methods that could lead to fossil-fuel-free energy technologies.

#### **Applications and Limitations**

- Today, most **Electrical Vehicles** (EV) use Li-ion batteries as well but are slowly reaching their **theoretical limits** of being able to provide roughly up to 300-watt hour per kilogram of energy. These batteries can also be used to **store solar and wind power**, which means that with their widespread use it may even be possible to live in a fuel free society.
- Even so, some of the **disadvantages** of Li-ion batteries include their susceptibility to overheating and their being prone to damage at high voltages since they are made with flammable and combustible materials. Such batteries also start losing their capacity over time — for instance, a laptop battery in use for a few years does not function as well as a new one.

#### **Alternatives to Li-ion Batteries**

- Earlier in January 2020, researchers from Australia claimed that they developed the **world's most efficient lithium-sulfur (Li-S) battery**, capable of powering a smartphone for five continuous days — the equivalent of an electric car being able to drive a distance of over 1,000 km.
- While the materials used in the **Li-S batteries** are not different from those in **Li-ion batteries**, the Australian researchers reconfigured the design of the **sulfur cathodes** (a type of **electrical conductor** through which electrons move) to accommodate higher stress without a drop in overall capacity.
- **Li-S batteries** are generally considered the **successors of Li-ion** batteries because of their lower cost of production, energy efficiency and improved safety. Their cost of production is lower because sulfur is abundantly available.

#### **38. Identify the particle based on the given statements**

1. It is also known as the 'fat electron'.
2. It is produced copiously in the Fermilab experiments and occurs naturally in cosmic ray showers.
3. Like the electron, it has a magnetic moment because of which, when it is placed in a magnetic field, it spins and precesses, or wobbles slightly, like the axis of a spinning top.

Select the correct code

- |            |              |
|------------|--------------|
| a) Neutron | b) Proton    |
| c) Muon    | d) neutrinos |

**Answer: C**

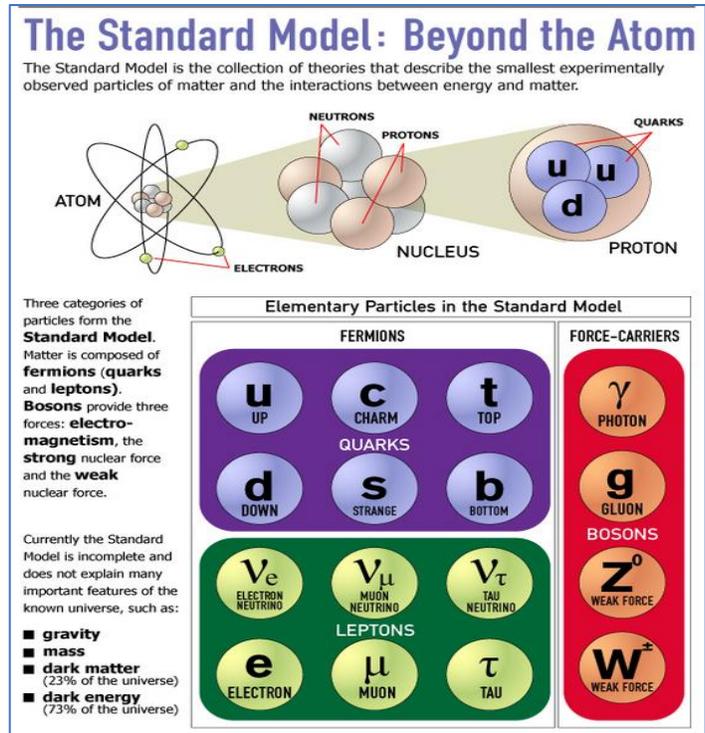
**Explanation**

- Newly published results of an international experiment hint at the **possibility of new physics governing the laws of nature**, scientists say.

- The results of the experiment, which studied a **subatomic particle called the muon**, do not match the **predictions of the Standard Model**, on which all particle physics is based, and instead reconfirm a discrepancy that had been detected in an experiment 20 years previously.

**The Standard Model**

- The Standard Model is a rigorous theory that predicts the behaviour of the building blocks of the universe. It lays out the **rules for six types of quarks, six leptons, the Higgs boson, three fundamental forces**, and how the **subatomic particles** behave under the **influence of electromagnetic forces**.
- The muon is one of the **leptons**. It is similar to the **electron**, but 200 times larger, and much more unstable, surviving for a fraction of a second. The experiment, called **Muon g-2 (g minus two)**, was conducted at the US Department of Energy’s Fermi National Accelerator Laboratory (Fermilab).



**The Experiment**

- The **Muon g-2 experiment** measured a quantity, called **g-factor**, a measure that derives from the **magnetic properties** of the muon. A g-factor (also called g value or dimensionless magnetic moment) is a dimensionless quantity that characterizes the magnetic moment and angular momentum of an atom, a particle or the nucleus.
- Because the **muon is unstable**, scientists study the effect it leaves behind on its surroundings.
- **Muons** act as if they have a **tiny internal magnet**. In a **strong magnetic field**, the direction of this magnet “**wobbles**” — just like the axis of a spinning top. The rate at which the muon wobbles is described by the g-factor, the quantity that was measured. This value is known to be close to 2, so scientists measure the deviation from 2. Hence the **name g-2**.
- The muon is also known as the ‘**fat electron**’. It is produced **copiously in the Fermilab experiments** and occurs naturally in cosmic ray showers.
- **Findings of the Experiment**
  - ✓ The accepted **theoretical values for the muon are (Standard Model)**:
    - g-factor: 2.00233183620
    - anomalous magnetic moment: 0.00116591810
  - ✓ **The new experimental results (combined from the Brookhaven and Fermilab results)**:
    - **g-factor: 2.00233184122**
    - **anomalous magnetic moment: 0.00116592061**





- The **30kg NEO-01 robot** was developed by Shenzhen-based **Origin Space**.
- Since the establishment of the **world's first asteroid mining company Planetary Resources in 2009**, more than a dozen firms across the world have entered the fledging sector, including 3D Systems of the United States and Japan's Astroscale.
- Unlike Astroscale's technology, which uses magnets to gather up space junk, **NEO-01 will use a net to capture debris** and then burn it with its **electric propulsion** system.

Approximately **3,000 defunct satellites** remain in orbit around Earth, along with millions of smaller pieces of space debris, which can still cause severe damage upon impact due to the velocity at which they orbit.

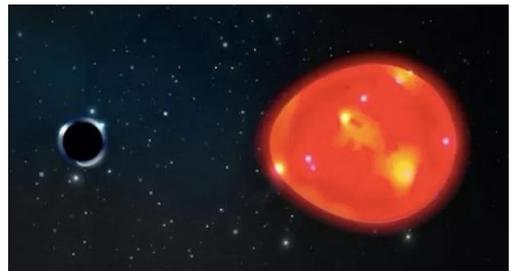
**42. Scientists have discovered what may be the smallest-known black hole in the Milky Way galaxy and the closest to our solar system, it was named as**

- a) **Holmberg Black Hole**
- b) **NGC 1281 Black Hole**
- c) **Unicorn Back Hole**
- d) **Messier Black Hole**

**Answer: C**

**Explanation:**

- Scientists have discovered what may be the **smallest-known black hole** in the **Milky Way galaxy** and **closest to our solar system**, an object so curious that they **nicknamed it 'the Unicorn.'**
- It is nicknamed as **'the Unicorn'** partly because **V723 Mon** is in the **Monoceros constellation**, which **translates to unicorn**, and partly because it is a very **unique system** in terms of the black hole's mass and relative closeness to Earth
- It is roughly **three times the mass of our sun**, testing the lower limits of size for these **extraordinarily dense objects** that possess gravitational pulls so strong not even light can escape. A **luminous star** called a red giant orbits with the black hole in a so-called **binary star system named V723 Mon**.
- The black hole is located about **1,500 light years** — the distance light travels in a year, **9.5 trillion km** — from Earth. While it may be the closest one to us, it is still far away. By way of comparison, the closest star to our solar system, **Proxima Centauri, is 4 light years away**.
- Black holes like this one form when **massive stars die** and their cores collapse.
- **'The Unicorn'** falls into what the researchers called a **"mass gap"** between the **largest-known neutron stars** - objects similarly formed by a large star's collapse - at around 2.2 times the mass of our sun and what previously had been considered the **smallest black holes** at around five times the sun's mass.
- Its **strong gravity alters the shape** of its companion star in a phenomenon known as **tidal distortion**, making it elongated rather than spherical and causing its light to change as it moves along its orbital path. It was these effects on the companion star, observed using Earth-based and orbiting telescopes, that indicated the black hole's presence.



- Unlike some other black holes **orbiting with a star, this one was not observed to be drawing material** from its companion, which is 173 times more luminous than our sun. The only smaller potential black hole is one with a mass 2.6 times that of our sun that was spotted in another galaxy

There are **three categories of black holes**:

- i. The **smallest, like 'the Unicorn,'** are so-called stellar mass black holes formed by the **gravitational collapse** of a single star.
- ii. There are **gargantuan 'supermassive' black holes** like the one at our galaxy's center, 26,000 light years from Earth, which is four million times the sun's mass.
- iii. A few **intermediate-mass black** holes also have been found with masses somewhere in between.

**43. Navegaon-Nagzira Tiger Reserve, recently in news, was located in**

- |                |                   |
|----------------|-------------------|
| a) Maharashtra | b) Andhra Pradesh |
| c) Odisha      | d) Madhya Pradesh |

**Answer: A**

**Explanation:**

- Three labourers were killed and two others injured during an operation to douse a forest fire at Navegaon-Nagzira Tiger Reserve (NNTR) in Maharashtra.
- Navegaon-Nagzira is **fifth tiger reserve** of Maharashtra and 46th of the country.
- It is close from Nagpur city of state.
- This tiger reserve is connected with many surrounding tiger reserves like Pench, Kanha, Tadoba Andhari Tiger Reserve, Indravati Tiger Reserve etc. Such wildlife corridor play vital role in movements of wild animals and maintaining genepool or genetic diversity.

**44. 'Global Forest Goals Report 2021', recently in news, was released by which among the following?**

- a) Department of Economic and Social Affairs of the United Nations
- b) International Union of Forest Research Organizations
- c) World Resources Institute
- d) World Conservation Monitoring Centre

**Answer: A**

**Explanation:**

- Recently **Department of Economic and Social Affairs of the United Nations** has released Global Forest Goals Report 2021.

- It provides an initial overview of progress towards achieving the six Global Forest Goals and their 26 associated targets as contained within the **United Nations Strategic Plan for Forests 2030**.
- **United Nations Strategic Plan for Forests 2030**: It was created with a mission to promote sustainable forest management and enhance the contribution of forests and trees to the 2030 Agenda for Sustainable Development. The Plan recognizes that in order to create a world in which forests could provide economic, social, environmental and cultural benefits for present and future generations, they will be needed by humanity in the first place.

### Key Findings Of The Report

- COVID-19 pandemic has aggravated the challenges faced by countries in managing their forests.
- Some of the most vulnerable segments of society, especially the rural poor and indigenous people, have **turned to forests for their most essential subsistence needs**. This has increased pressures on forest systems.
- Climate change & biodiversity crisis are other big threats to forest ecosystems besides the pandemic.
- The 'Global Assessment Report on Biodiversity and Ecosystem Services' of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) had highlighted that **one million species were at risk of extinction** and that 100 million hectares of tropical forest were lost from 1980-2000.
- The report called for a future course of action that included **greater sustainability and a greener and more inclusive economy** to tackle the threats of COVID-19, climate change and the biodiversity crisis faced by forests.

45. 'Middle East Green Initiative', recently in news, was launched by which among the following?

- a) Qatar
- b) Saudi Arabia
- c) Kuwait
- d) None of the above

**Answer: B**

### Explanation

To combat climate change, **Saudi Arabia** has launched the Saudi Green Initiative and Middle East Green Initiative.

### Saudi Green Initiative

- The Saudi Green Initiative aims to **raise the vegetation cover, reduce carbon emissions, combat pollution and land degradation**, and preserve marine life.
- As part of the initiative, **10 billion trees will be planted in the Kingdom**.
- It aims to **reduce carbon emissions by more than 4% of global contributions**, through a renewable energy programme that will generate **50% of Saudi's energy from renewables by 2030**.
- With the understanding that the need of the hour is to do more than enough, Saudi Arabia is working towards **raising the percentage of its protected areas to more than 30% of its total land area**, representing roughly 6,00,000 sq km, exceeding the global target of 17%.

**Middle East Green initiative**

- As part of the Middle East Green initiative, Saudi Arabia will work with the **Gulf Cooperation Council** countries and regional partners to **plant an additional 40 billion trees in the West Asian region**.
- It represents **5% of the global target of planting one trillion trees** and reducing 2.5% of global carbon levels.
- Saudi Arabia has been sharing its expertise and know-how with its neighbouring countries to reduce carbon emissions resulting from hydrocarbon production in the region by 60% and globally by 10%.
- **Saudi Arabia currently operates the largest carbon capture and utilisation plant in the world**, turning half a million tonnes of CO<sub>2</sub> annually into products such as fertilizers and methanol.
- To ensure momentum and continuity, Saudi Arabia will convene an annual summit called the Middle East Green Initiative which will host leaders from the government, scientists and environmentalists to discuss the details of implementation. The aim is start implementing the plan in the fourth quarter of this year and continue for the next two decades.

46. 'State of the Global Climate for 2020', recently in news, was released by which among the following?

- a) United Nations Environment Programme                      b) Global Green Growth Institute (GGGI)  
c) World Meteorological Organization (WMO)                      d) Global Alliance on Health and Pollution

**Answer: C**

**Explanation**

**WMO** has released its annual State of the Global Climate for 2020 on April 20, 2021.

**Highlights of the Report**

- Extreme weather combined with COVID-19 is a double blow for millions of people in 2020. However, the pandemic-related economic slowdown failed to put a brake on climate change drivers and accelerating impacts.
- 2020 was one of the three warmest years on record, despite a cooling La Niña event. The global average temperature was about 1.2° Celsius above the pre-industrial (1850-1900) level. The six years since 2015 have been the warmest on record. 2011-2020 was the warmest decade on record.

**WMO Report Listed Five Key Indicators Of Irreversible Changes In Global Climate****1. Greenhouse Gases**

- a. Notwithstanding the economic slowdown due to the COVID-19 pandemic, **emission of major greenhouse gases increased in 2019 and 2020**. More to it, the level of greenhouse gas emission will be higher in 2021.
- b. Concentrations of the major greenhouse gases continued to increase in 2019 and 2020. Globally averaged mole fractions of carbon dioxide (CO<sub>2</sub>) have already exceeded 410 parts per million (ppm), and if it follows the same pattern as in previous years, it could reach or exceed 414 ppm in 2021.

**2. Oceans**

- a. In 2019, the oceans had the **highest heat content on record**. Over 80 per cent of the ocean area experienced at least one marine heatwave in 2020.
  - b. The percentage of the ocean that experienced “strong” marine heat waves (45 per cent) was greater than that which experienced “moderate” marine heat waves (28 per cent).
3. **Sea-level Rise:** Since record-taking started in 1993 using the satellite altimeter, sea-level has been rising. However, there was a blip in summer of 2020 that recorded a drop in sea level. The WMO report says it is due to the **La Niña induced cooling**. Sea level has recently been rising at a higher rate partly due to the increased melting of the ice sheets in Greenland and Antarctica.
  4. **The Arctic:** In 2020, the Arctic sea **ice extent came down to second lowest on record**. The 2020 Arctic sea-ice extent minimum after the summer melt was 3.74 million square kilometre, marking only the 2<sup>nd</sup> time on record that it shrank to less than 4 million sq km.
  5. **The Antarctica:** The Antarctic sea-ice extent remained close to the long-term average. However, the Antarctic ice sheet has exhibited a **strong mass loss trend** since the late 1990s. This trend accelerated around 2005, and currently, Antarctica loses approximately 175 to 225 Gt per year.

**47. Consider the following statements with regard to Sulphur Dioxide**

1. Sulfur dioxide appears as a colorless gas with a suffocating odor.
2. It is released naturally by volcanic eruptions.
3. It is corrosive and can cause damage to buildings and other materials.

Which of the statements given above is/are correct?

- |                 |                 |
|-----------------|-----------------|
| a) 1 and 2 only | b) 2 and 3 only |
| c) 1 and 3 only | d) 1, 2 and 3   |

**Answer: D**

**Explanation**

- Sulphur dioxide (SO<sub>2</sub>) emissions from **La Soufriere volcano eruption in the Caribbean** have reached all the way to India, sparking fear of increased pollution levels in the northern parts of the country and acid rain.
- **La Soufrière volcano on St Vincent Island in the West Indies** started erupting on April 9 after spewing out lava into a dome and threatening to erupt since December 2020. The last time the volcano had erupted was in 1979.
- NASA scientists have found evidence for the entry of sulphate aerosol particles (precursors for sulphuric acid) in the stratosphere, the second layer of the Earth's atmosphere.
- **Volcanic emissions reaching the stratosphere** can have a **cooling effect** on global temperatures. The most significant climate impacts from volcanic injections into the stratosphere come from the **conversion of sulphur dioxide to sulphuric acid**, which condenses rapidly in the stratosphere to form fine sulphate aerosols.

**About Sulphur Dioxide**

- Sulphur dioxide appears as a **colorless gas** with a choking or suffocating odor. Boiling point  $-10^{\circ}\text{C}$ ; **Heavier than air**.
- **Very toxic by inhalation** and may irritate the eyes and mucous membranes.
- Used to manufacture chemicals, in paper pulping, in metal and food processing.
- In nature, sulphur dioxide can be **released to the air from volcanic eruptions**.
- The gas is quite corrosive and can cause also damage to buildings and other materials.

**48. Consider the following statements with reference to Biomineralisation.**

1. It is the process by which living organisms produce minerals, often to harden or stiffen existing tissues.
2. Only Coral reefs exhibits Biomineralisation.

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**

**Explanation**

- A study by researchers at Rutgers University suggests that **stony coral could survive climate change**. Predicting the survival of corals based on how they adapted to global climate change over millions of years requires understanding, among other things, how they build reefs by **secreting calcium carbonate**. That process is called **biomineralisation**.
- Researchers said that It's important to understand the **mechanisms of coral biomineralisation** and how these invaluable animals persist during the era of anthropogenic climate change.
- The findings suggest that corals will withstand climate change caused by human activities, based on the precision, robustness and resilience of their impressive process for forming rock-hard skeletons.
- The scientists showed that several proteins work together to create optimal conditions for biomineralisation. These proteins are not located randomly but are well-organized spatially, which the scientists detailed for the first time. The scientists revealed the spatial patterns as new mineral is formed between the living tissue of the animal and its base or an older skeleton.

**About Biomineralisation**

- Biomineralization is the process by which **living organisms produce minerals**, often to harden or stiffen existing tissues. Such tissues are called mineralized tissues.
- It is an **extremely widespread phenomenon**; all six taxonomic kingdoms contain members that are able to form minerals, and over 60 different minerals have been identified in organisms. Examples include **silicates in algae and diatoms**, **carbonates in invertebrates**, and calcium phosphates and carbonates in vertebrates.

### **Article 244(A) Of The Constitution And Its Relevance To The Assam Hill Tribes**

Recently, Congress leader Rahul Gandhi promised to implement Article 244 (A) of the Constitution to safeguard the interests of the people in Assam's tribal-majority districts.

#### **What is Article 244(A) of The Constitution**

Article 244(A) allows for creation of an '**autonomous state**' within Assam in certain tribal areas. Inserted into the Constitution in 1969, it also has a provision for a Legislature and a Council of Ministers. There has been a demand across three hill districts namely Karbi Anglong, West Karbi Anglong, and Dima Hasao.

#### **How Is It Different From The Sixth Schedule Of The Constitution?**

- The Sixth Schedule of the Constitution — **Articles 244(2) and 275(1)** — is a special provision that allows for greater political autonomy and decentralised governance in certain tribal areas of the Northeast through **autonomous councils** that are administered by elected representatives. In Assam, the hill districts of Dima Hasao, Karbi Anglong and West Karbi and the Bodo Territorial Region are under this provision.
- Article 244(A) accounts for more autonomous powers to tribal areas. Among these the most important power is the **control over law and order**. In Autonomous Councils under the Sixth Schedule, they do not have jurisdiction of law and order.

#### **Demand For A Separate Hill State-Background**

- In the 1950s, a demand for a separate hill state arose around certain sections of the tribal population of undivided Assam. In 1960, various political parties of the hill areas merged to form the **All Party Hill Leaders Conference**, demanding a separate state. After prolonged agitations, **Meghalaya gained statehood in 1972**.
- The leaders of the Karbi Anglong and North Cachar Hills were also part of this movement. They were given the **option to stay in Assam or join Meghalaya**." They stayed back as the then Congress government promised more powers, **including Article 244 (A)**. Since then, there has been a demand for its implementation.
- In the 1980s, this demand took the form of a movement with a number of Karbi groups resorting to violence. It soon became an **armed separatist insurgency demanding full statehood**.
- While in February 2021, 1,040 militants of five militant groups of Karbi Anglong district ceremonially laid down arms at an event in Guwahati in the presence of Chief Minister, the entire political discourse here still revolves around the demand for grant of 'autonomous state' status to the region.

### **De-Criminalizing Begging In India**

The Supreme Court has asked the Centre and four States to file their response within three weeks on a plea seeking a direction to repeal the **statutes/provisions criminalising begging** as they were **violative of constitutional rights**.

### **Laws Governing Begging In India**

- In India, there is **no central law** which penalises begging. Although, **22 states** (including few Union Territories) have their anti-begging laws. The Act which functions as the derivative figure for all the state anti-begging law is Bombay Prevention of Begging Act, 1959.
- The petition has sought directions to declare as “illegal and void” all provisions, except some sections, of the Bombay Prevention of Begging Act, 1959, Punjab Prevention of Beggary Act, 1971, Haryana Prevention of Begging Act, 1971 and Bihar Prevention of Begging Act 1951. It has also sought to declare all other similar Acts prevailing in any part of the country as illegal.
- Under various laws, punishment can be anywhere **between 1 to 3 years**, depending upon the age and character of the beggar, the circumstances and conditions in which the beggar was living etc.

### **Arguments for Decriminalizing Begging**

- The plea has referred to the August 2018 verdict of the **Delhi High Court which had decriminalised begging in the national capital** and said provisions of the Bombay Prevention of Begging Act, 1959, which treats begging as an offence *cannot sustain constitutional scrutiny*.
- The provisions of the statutes criminalising the act of begging put people in a situation to make an **unreasonable choice between committing a crime or not committing one and starving**, which goes against the very spirit of the Constitution and violates Article 21 i.e. Right to Life.
- Referring to the Census 2011, the plea has said the total **number of beggars in India is 4,13,670** and the number has increased from the last census. The government has the **mandate to provide social security** to everyone and ensure that all had basic facilities, as embedded in the Directives Principles of State Policy in the Constitution. However, the presence of beggars is evidence that the **state has failed** to provide these basic facilities to all its citizens.

Thus instead of working on its failure and examining what made people beg, criminalising the act of beggary is irrational and against the approach of a socialist nation as embedded in the preamble of our Constitution.

- Neither the Indian Penal Code nor the Act explain what is meant by “soliciting alms” or what constitutes a “public place” – leading to **ambiguity, inconsistency and abuse in the practical implementation of the law**.

The Abolition of Begging and Rehabilitation of Beggars Bill 2018 had been introduced in the Lok Sabha but “till date, this bill is not passed and is wedged in length parliamentary procedures, that has resulted in thousands of poor facing more hardships because of present arbitrary statutes”.

### **Association For Democratic Reforms Report On Criminalization Of Politics**

The National Election Watch and Association of Democratic Reforms (ADR) have analysed the self-sworn affidavits of 6,318 out of 6,792 candidates who contested in the current Assembly Elections.

#### **Key Findings**

- Out of 6,318 candidates contesting in Assembly elections in four states and a UT, **18 % have declared criminal cases against themselves**, according to a report by poll rights group ADR (Association for Democratic Reforms), and **632 (10%) candidates have declared serious criminal cases** against themselves. **As many as 1,317 (21%) are crorepatis**.

- The report further said that there are 191 (31%) out of 621 constituencies having 3 or more candidates with declared criminal cases which it called '**Red Alert Constituencies**'.
- About 74 of these Red Alert Constituencies were in Tamil Nadu, 75 in Kerala, 21 in West Bengal, 13 in Assam and eight in Puducherry.

#### **Additional Information**

##### **Various Committee On Criminalization Of Politics**

- **Santhanam Committee Report, 1963:** It referred to political corruption as more dangerous than corruption of officials and recommended for Vigilance Commission both at the Centre and in the States.
- **Vohra Committee Report, 1993:** It studied the problem of the criminalization of politics and of the nexus among criminals, politicians and bureaucrats in India.
- **Padmanabhaiah Committee on Police Reforms:** It found that Corruption is the root cause of both politicization and criminalization of the police. It was also of the opinion that it is the criminalization of politics, which has produced and promoted a culture of impunity

#### **The Tribunals Reforms (Rationalisation and Conditions of Service) Ordinance, 2021**

The Tribunals Reforms (Rationalisation and Conditions of Service) Ordinance, 2021, issued by the Ministry of Law and Justice, was notified on April 4.

##### **Salient Features Of The Ordinance**

- It has **made amendments to** the Cinematograph Act, Copyright Act, Customs Act, Patents Act, Airports Authority of India Act, Trade Marks Act, Geographical Indications of Goods (registration and protection) Act, Protection of Plant Varieties and Farmers Rights Act, Control of National Highways (land and traffic) Act, and Finance Act.
- **The Finance Act, 2017** empowered the central government to notify rules on: (i) **qualifications of members of tribunals**, (ii) **terms and conditions of their service**, and (iii) **composition of search-cum-selection committees** for 19 tribunals (such as the Customs, Excise, and Service Tax Appellate Tribunals).
- The Ordinance amends the 2017 Act to include provisions related to the composition of search-cum-selection committees and term of office of tribunal members in the Act itself.
- **Search-cum-selection committees:** The 2017 Act specifies that the Chairperson and Members of the Tribunals will be appointed by the central government on the recommendation of a Search-cum-Selection Committee. The Ordinance specifies that these Committees will consist of:
  - i) **Chief Justice of India**, or a Supreme Court Judge nominated by him, as the Chairperson (with casting vote),
  - ii) **Two Secretaries** nominated by the central government,
  - iii) **The sitting or outgoing Chairperson**, or a retired Supreme Court Judge, or a retired Chief Justice of a High Court, and
  - iv) **The Secretary of the Ministry** under which the Tribunal is constituted (with no voting right).

- **Term of office:** The Ordinance specifies that the term of office for the **Chairperson of the tribunals will be of four years or till the attainment of the age of seventy years**, whichever is earlier. For other members of the tribunals, the term will be of four years or till the age of sixty-seven years, whichever is earlier.
- Further, the Ordinance includes the **National Consumer Disputes Redressal Commission** established under the Consumer Protection Act, 2019 **within the purview of the Finance Act, 2017**.
- The Ordinance removes the following bodies from the purview of the Finance Act, 2017: (i) the Airport Appellate Tribunal established under the Airports Authority of India Act, 1994, (ii) the Appellate Board established under the Trade Marks Act, 1999, (iii) the Authority of Advanced Ruling established under the Income Tax Act, 1961, and (iv) the Film Certification Appellate Authority established under the Cinematograph Act, 1952.

### **Sankalp Se Siddhi**

- **TRIFED**, under Ministry of Tribal Affairs, has launched “Sankalp se Siddhi” - **Village & Digital Connect Drive**.
- This 100 day drive will entail 150 teams (10 in each region from TRIFED and State Implementation Agencies/Mentoring Agencies/Partners) visiting ten villages each. 100 villages in each region and 1500 villages in the country will be covered in the next 100 days.
- The visiting teams will also identify locations and shortlist potential **Van Dhan Vikas Kendras** for clustering as **TRIFOOD**, and Scheme of Fund for Regeneration of Traditional Industries- **SFURTI** units as larger enterprises.
- **TRIFOOD aims to enhance the income of tribals** through better utilization of and value addition to the Minor Forest Produce collected by the tribal forest gatherers.
- They will also identify tribal artisans and other groups and empanel them as suppliers so that they can have access to larger markets through the Tribes India network - both physical outlets and TribesIndia.com.
- It is expected that Sankalp Se Siddhi will aid in effecting a complete transformation of the tribal ecosystem across the country.

### **Chandler Good Government Index (CGGI)**

- **India has been ranked 49th** in the first edition of Chandler Good Government Index (CGGI), which classifies 104 countries in terms of **government capabilities and outcomes**. It has been released by Chandler Institute of Governance, a private non-profit organization headquartered in Singapore.
- **Finland has topped the CGGI list**, in which each country is measured across over 50 open data points.
- The **BRICS countries** ranking are China (40th), Russia (48th), India (49th), Brazil (67th) and South Africa (70th).
- The ranking among the **South Asian nations** are India (49th), Nepal (92nd), Pakistan (90th) and Sri Lanka (74th).

- The index focuses on **seven pillars**: leadership and foresight; robust laws and policies; strong institutions; financial stewardship; attractive marketplace; global influence and reputation; and helping people rise.
- **Civil service innovation and capacity building** is a key focus for the Indian government. The Chandler Good Government Index shows the importance of measuring and investing in governance capabilities that matter.
- It highlights a key **need for ‘pracademics’ in government** – people who combine a rigorous understanding of research and data with a practical and grounded sense of what governments need to do to succeed.”

### **World Press Freedom Index 2021**

- The 2021 World Press Freedom Index, produced by **Reporters Without Borders (RSF)**, a French NGO, has again placed **India at 142nd rank** out of 180 countries.
- In 2016, India’s rank was 133 which has steadily climbed down to 142 in 2020. Fearing such an adverse assessment, in February 2020, on the directions of Cabinet Secretary, the **Index Monitoring Cell** was set up in 18 Ministries to find ways to improve the position on 32 international indices.
- **Information and Broadcasting Ministry** was delegated to look at the freedom of press index.

### **Highlights Of The Report**

- The latest index ranks 180 countries, topped, yet again, by **Norway** followed by Finland and Denmark, while **Eritrea** is at the bottom. **China is ranked 177**, and is only above North Korea at 179 and Turkmenistan at 178.
- **India is ranked 142, same as last year**, after it had consistently slid down from 133 in 2016. In the **South Asian neighbourhood**, Nepal is at 106, Sri Lanka at 127, Myanmar (before the coup) at 140, Pakistan at 145 and Bangladesh at 152.
- The report stated that India shares the “**bad**” **classification with Brazil, Mexico and Russia**.
- The RSF report says **India is one of the world’s most dangerous countries for journalists** trying to do their job properly. They are **exposed to every kind of attack, including police violence against reporters**, ambushes by political activists, and reprisals instigated by criminal groups or corrupt local officials.
- The RSF representatives questioned the **extended Internet ban in Jammu and Kashmir** from August 5, 2019 which went on to nearly a year.
- It highlighted that criminal prosecutions are meanwhile “**often used to gag journalists critical of the authorities**” with sections for sedition also used.

### **National Panchayati Raj Day**

- Ministry of Panchayati Raj commemorates 24th April of every year as the National Panchayati Raj Day (NPRD), as the **73rd Constitutional Amendment came into force on this date**.

- Every year, on this occasion, Ministry of Panchayati Raj has been awarding the best performing Panchayats/States/UTs across the country under the Incentivization of Panchayats in recognition of their good work for improving delivery of services and public goods.
- Towards the objectives of socio-economic empowerment of the rural mass and making them self-reliant, a **Central Sector Scheme**, “*Survey of Villages and Mapping with Improvised Technology in Village Areas*’ (SVAMITVA) was launched by the Prime Minister on 24th April 2020. Prime Minister has dedicated the Scheme of SVAMITVA to the entire nation on 24th April 2021.

### About SVAMITVA Scheme

- As a new initiative of **Ministry of Panchayati Raj**, it aims to provide rural people with the **right to document their residential properties** so that they can use their property for economic purposes.
- The scheme is for surveying the land parcels in rural inhabited area using **Drone technology**.
- **Objectives**
  - **To bring financial stability to the citizens** in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.
  - **Creation of accurate land records** for rural planning.
  - **Determination of property tax**, which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer.
  - **Creation of survey infrastructure** and GIS maps that can be leveraged by any department for their use.
  - To support in preparation of **better-quality Gram Panchayat Development Plan (GPDP)** by making use of GIS maps.
  - **To reduce property related disputes** and legal cases
- **Coverage:** There are about 6.62 lakh villages in the country which will be eventually covered in this scheme. The survey shall be done across the country in a phase wise manner over the period 2020 -2025.

### Aahaar Kranti

- The government has recently launched Aahaar Kranti, a mission dedicated to spread awareness about nutrition. It is designed to address the peculiar problem of hunger and diseases in abundance, being faced by India and the world.
- Vijnana Bharati, Global Indian Scientists and Technocrats Forum, Vigyan Prasar, and Pravasi Bharatiya Academic and Scientific Sampark have come together to launch this mission. More organisations are in the pipeline to join the Mission as it proceeds.

### Need of The Mission

- Studies estimate that India produces as much as two times the amount of calories it consumes. However, many in the country are still malnourished. The root cause of this strange phenomenon is a lack of nutritional awareness.



- Today when the country is dealing with the pandemic, a balanced diet serves as a special tool to reduce the impact of the pandemic. At such a time, the need to create awareness about the importance of a balanced diet has become more vital than ever before.
- Keeping this in mind, Aahaar Kranti has been launched with the motto of **Uttam Aahaar- Uttam Vichaar or Good Diet-Good Cognition**.
- The movement proposes to address the problem by working to awaken the people to the richness of India's traditional diet, to the healing powers of local fruits and vegetables, and to the miracles of a balanced diet.

### **Implementation Strategy**

- The mission will work on multiple dimensions simultaneously. In terms of objectives, it will seek to promote better awareness, better nutrition and better agriculture.
- The messages will be imparted through a curriculum or through games or as instructions. The content will be provided both online and offline, in all vernacular languages besides English and Hindi.
- The programme will focus on training teachers, who, in turn, will pass on the message to the multitudes of students, and through them to their families and finally the society at large.

### **Bridging Trials Exemption**

- The Centre has enabled faster access to foreign-made vaccines by removing the need for bridging trial studies before granting emergency authorisation for vaccines approved by regulators of certain countries.
- Foreign-manufactured vaccines granted emergency approval by drug regulators of the US, the EU, Japan and the UK or those listed in WHO (Emergency Use Listing) will be given the exemption.
- The move comes at a time when vaccine shortages are being reported from various parts of the country. So far, India has granted emergency use authorisation to three vaccines - Covishield, Covaxin and Sputnik V.

### **Rules On Regulatory Approvals For Foreign Covid-19 Vaccines**

- As per The New Drugs & Clinical Trials Rules, 2019, whenever a foreign manufacturer applies for emergency use authorisation of vaccines, it has to submit the result of local (Indian) clinical trials. These trials are called **bridging trials**, in which the manufacturers conduct phase 2/3 studies to collect safety and immunogenicity data.
- Since the efficacy data is already established at a foreign site, limited participants are enrolled (around 1,000) and a clinical trial is conducted to see if the vaccine is safe in the Indian population.
- On the basis of this rule, Serum Institute conducted a bridging trial of Covishield and Dr Reddy's conducted a bridging trial of the Sputnik V vaccine from Russia.
- The Rules also empower the regulator to relax the rules if the vaccine has been approved by the national regulator of another country. This clause has now been invoked to remove the pre-condition to conduct phase 2-3 trials in India.

### **Special Condition**

- The Centre has however introduced a special condition, under which foreign manufactures have to assess the safety of the vaccine in the first 100 beneficiaries for seven days before it is approved for Covid vaccination programme in India.
- After approval, a **parallel bridging clinical trial** will continue and the manufacturers have to submit the safety data to the regulator.

### **Implications**

- The change in rules will fast-track the approval process to increase availability of Covid vaccines in India. It will also facilitate quicker access to such foreign vaccines.
- Thus, vaccines manufactured by Pfizer and Moderna with high efficacy and other such vaccines can quickly become a part of the vaccination programme in India.
- It is expected to encourage imports, including import of bulk drug material. This, in turn, will give a boost to vaccine manufacturing capacities in India.

### **WHO Emergency Use Listing (EUL)**

- The WHO EUL pathway involves a rigorous assessment of late phase 2 and 3 trial data as well as substantial additional data on safety, efficacy, quality, and a risk management plan.
- These data are reviewed by independent experts and WHO teams who consider the current evidence, the plans for monitoring the vaccine's use, and plans for further studies.
- As part of the WHO's EUL process, the vaccine manufacturer continues to generate data to enable full licensure and WHO prequalification of the vaccine.
- The **WHO prequalification process** assesses the additional clinical data generated from trials and deployment on a continuous basis to ensure the vaccine meets the necessary standards of quality, safety, and efficacy for broader availability.
- A vaccine listed on WHO EUL can be rolled out globally through the COVAX programme. Vaccines developed by Pfizer, Moderna, AstraZeneca/Oxford etc. have already been listed on WHO EUL and several other vaccines will be listed on WHO EUL in the near future.

### **Integrated Health Information Platform**

- The Ministry of Health & Family Welfare, recently launched an advanced system for disease surveillance - Integrated Health Information Platform (IHIP).
- IHIP is the next generation highly refined version of the presently ***used Integrated Disease Surveillance Programme (IDSP)***.

### **IHIP**

- IHIP will track 33 diseases as compared to 18 diseases earlier and will ensure near-real-time data in digital mode. It will provide analyzed reports on mobile or other electronic devices.
- Data will be provided in real time through the grassroots healthcare workers through their gadgets (tablets); the doctors at the PHC/CHC/SHD/DH when the citizens seek healthcare; and the diagnostic labs which will provide data on the tests carried out.

- IHIP is in **sync with the National Digital Health Mission** and fully compatible with the other digital information systems presently being used in India.

#### **Benefits**

- With IHIP, collection of authentic data will become easy as it comes directly from the village/block level; the last mile from the country.
- It will help in real time data collection, aggregation & further analysis of data that will aid and enable evidence-based policy making and move towards 'One Health' approach.
- It will help in identifying the earliest signs of disease spread in the smallest of villages and blocks in the country which will help to prevent any potential outbreak or epidemic.

#### **Integrated Disease Surveillance Programme**

- The IDSP was launched by the **Ministry of Health and Family Welfare in 2004**.
- The programme is assisted by the **World Bank**.
- The main **objective** of the programme is to detect and respond to disease outbreaks quickly.

#### **Immunisation Agenda 2030**

- Global agencies like the WHO, UNICEF and Gavi, the Vaccine Alliance have endorsed a new global vision and strategy, called the Immunization Agenda 2030 (IA2030), to address these challenges over the next decade.
- The IA2030 is based on learnings from **Global Vaccine Action Plan (GVAP)**. It also aims to address the unmet targets of the GVAP that were initially to be fulfilled as part of the global immunisation strategy of the 'Decade of vaccines' (2011–2020).
- IA2030 envisions a world where everyone, everywhere, at every age, fully benefits from vaccines to improve health and well-being. It aims to ensure that the benefits of immunisation are shared equitably among and within countries.
- It intends to **reduce the number of zero-dose children by 50 %**. Zero-dose children are those who have received no vaccines through immunisation programmes. It hopes to do this by extending immunisation services to 13 million such children. These constitute 65 % of more than 20 million infants who do not receive a full course of even basic vaccines and miss out on new vaccines.
- This, in turn, will contribute to achieving the SDGs, specifically SDG3. "Ensure healthy lives and promote well-being for all at all ages".

#### **Guidelines For Non-Bank Payment Operators**

To encourage non-bank financial institutions such as mobile wallets and payments banks, Reserve Bank of India recently announced various changes.

#### **RTGS and NEFT for non-bank Payment Operators**

- Money transfer facilities such as NEFT and RTGS have been extended to non-bank payment system operators.

- (RBI) has proposed to enable, in a phased manner, payment system operators like mobile wallets to take direct membership of Centralised Payment Systems (CPS), such as RTGS and NEFT.
- Membership in CPS -- RTGS and NEFT -- was so far limited to banks and a few other institutions.
- Thus, mobile wallets like Google Pay, Mobikwik, PayU, Ola Money, PhonePe and Amazon Pay can provide NEFT and RTGS facilities to their customers.
- This is expected to minimise settlement risk in the financial system and enhance the reach of digital financial services to all user segments.
- These entities will, however, not be eligible for any liquidity facility from the RBI to facilitate settlement of their transactions in these CPSs.

### **Cash Withdrawal**

- The RBI has now proposed to allow the facility of cash withdrawal to non-bank entities — full-KYC PPIs of non-bank PPI issuers.
- Currently, cash withdrawal is allowed only for full-KYC PPIs issued by banks and this facility is available through ATMs and PoS terminals.
- Holders of such PPIs, given the comfort that they can withdraw cash, are less incentivised to carry cash and consequently more likely to perform digital transactions.
- With the RBI now allowing non-banks to withdraw cash (subject to the limit of Rs 2 lakh), dependence on banks is likely to come down.

### **Hike in Cash limits**

- The RBI has decided to increase the limit of outstanding balance in PPIs of non-banks from the current level of Rs 1 lakh to Rs 2 lakh.
- This will facilitate and incentivise online transfer and cash withdrawal from non-banks and enable them to go for full KYC compliance and interoperability.
- Interoperability of the PPI wallet will expand the market size and will be beneficial to the end consumers.

### **Impact on Banks**

- The opening up of fund transfer and cash withdrawal through non-banks is certainly a sign of a changing banking horizon. Traditional brick-and-mortar banking is slowly disappearing with non-banks entering the space.
- As per RBI, India is on the way to becoming Asia's top FinTech hub with an 87% FinTech adoption rate as against the global average of 64%.
- The FinTech market in India was valued at Rs 1.9 lakh crore in 2019 and is expected to reach Rs 6.2 lakh crore by 2025 across diversified fields such as digital payments, digital lending, peer-to-peer (P2P) lending, crowd funding, block chain technology, distributed ledgers technology, big data, RegTech and SupTech.
- FinTech companies are leading in terms of the volume of digital transactions and playing a more active role in the banking and finance industry.

- Thus, it is important that commercial banks adapt to the technological changes and work in tandem with these entities so that in future they are part of the ecosystem rather than competing with FinTech companies for business.

### **World Heritage Day**

- Every year, the United Nations marks April 18 as the International Day for Monuments and Sites, in many countries also celebrated as World Heritage Day.
- Globally, the day is promoted by the International Council on Monuments and Sites (**ICOMOS**). The theme for this year is “Complex Pasts: Diverse Futures”.
- In 1982, ICOMOS decided to celebrate the day and it was approved by UNESCO in 1983.
- The day is dedicated to recognising sites of historical importance, raising awareness regarding them, and stressing the need to restore and preserve them.

### **World Heritage Sites in India**

- Currently, there are 38 World Heritage Sites located in India, out of the 1121 such spots identified around the world. So far, only China, Italy, Spain, Germany, and France have more locations on the list than India.
- Of these, 30 are ‘cultural’, such as the Ajanta Caves, Fatehpur Sikri, Hampi monuments and the Mountain Railways of India.
- 7 are ‘Natural’, including Kaziranga, Manas and Nanda Devi National Parks and 1 is classified as ‘Mixed’, the Khangchendzonga National Park.

### **ICOMOS**

- ICOMOS is a professional association that works for the conservation and protection of cultural heritage places around the world.
- Now headquartered in France, ICOMOS was founded in 1965 in Warsaw as a result of the Venice Charter of 1964, and offers advice to UNESCO on World Heritage Sites.

### **Sarala Das**

- The Vice President recently addressed the 600th birth anniversary event of Adikabi Sarala Das.
- Sarala Dasa (born as Siddheswara Parida) was a **15th-century poet and scholar of Odia literature**.
- He was the first scholar to write in Odia. As an originator of Odia literature, he earned the title of ‘The Father of Odia Language’.
- He is best known for three Odia books — Mahabharata, Vilanka Ramayana and Chandi Purana. He also wrote the book Laxmi Narayana Vachanika.
- Sarala Dasa started writing his Mahabharata in the reign of Kapileswar, otherwise known as Kapilendra Deva, the famous Gajapati king of Odisha (AD 1435–67).

**The Suez Canal Crisis**

A container ship named the ‘Ever Given’ was stranded in the **Suez Canal in Egypt**. It remained there for six days thereby blocking other vessels from transiting one of the world’s most important waterways.

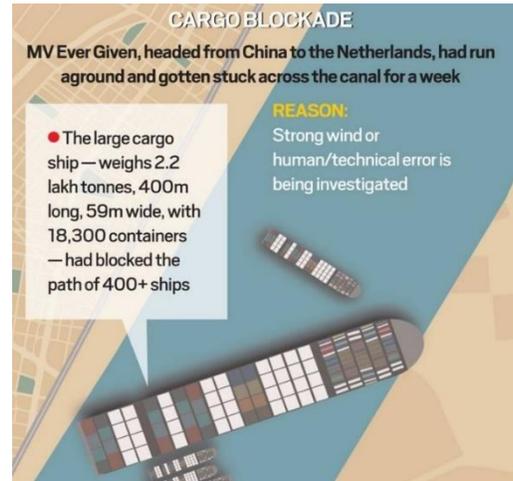
**About Suez Canal**

- The canal connects **Port Said** on the Mediterranean Sea to the Indian Ocean **via the Egyptian city of Suez on the Red Sea**.
- In 1858, the Universal Suez Ship Canal Company was tasked to construct the canal. The **French and British** held most of the shares in this company.
- The 193 km long canal was opened for international navigation in 1869. **Until 1956, British powers controlled the canal** after which it gave the control to the Egyptian government.
- In 2015, Egypt announced plans to further expand the Suez Canal, aiming to reduce waiting times and double the number of ships that can use the canal daily by 2023.



**Importance of Suez Canal**

- **The canal carries** – 12% of world trade, 7% of world’s oil, 30% container - ship daily. Since, the canal has no locks, it can even **handle aircraft carriers**.
- The canal provides direct shipping route between Europe and Asia by eliminating the need to circumnavigate Africa. This saves the fuel and brings down the transportation cost thereby making the international trade cheaper.
- It contributed **2% of Egypt’s GDP** pre-pandemic. More than 18,800 ships passed in 2020.
- The canal’s location makes it a **key link for shipping crude oil and other hydrocarbons** from countries such as Saudi Arabia to Europe and North America.
- The unprecedented halt in the Suez Canal, due to March 2021 blockade, had put temporary stress on trade, resulting in higher transportation costs, tighter supplies, and delay in delivery of goods not just to the producers but the consumers as well.
- The recent blockage was a grim reminder to the fact that **such incidents can also be triggered maliciously**, causing huge impacts on global or local trade.



**Importance For India**

- Indian trade worth \$200 billion to/from North America, South America and Europe is carried out using this route.
- The recent blockage affected the import and export of ethane with the US, and the imports of crude from Latin America.

### **NATO to Exit Afghanistan Along With U.S.**

- Foreign troops under NATO command will withdraw from Afghanistan in coordination with a U.S. pull-out. US has already announced its decision to withdraw all its troops from Afghanistan by September 11, 2021, the 20th anniversary of the 9/11 attacks.
- There are about 2,500-3,500 US troops in Afghanistan at present, plus a NATO force of under 8,000.

#### **Reason for Coordinated Withdrawal**

- A key reason for a coordinated withdrawal is the fact that **NATO relies on U.S. airlift capabilities and shipping** to move valuable equipment back home out of landlocked Afghanistan.
- NATO also wants to avoid any hardware falling into the hands of militants, as happened after the U.S. withdrawal from Iraq.

#### **NATO's Current Mission: Resolute Support**

- The aim of this mission is to train and equip Afghan security forces fighting the Taliban.
- Taliban was ousted from power by a U.S. invasion in late 2001. It has since waged an insurgency.

[Also refer the topic "**Joe Biden's Afghanistan Peace Plan**" from March 2021 edition of CA magazine]

### **Jordan Crisis**

- King Abdullah's half-brother, Prince Hamzah, was put under de facto house arrest for his alleged role in a conspiracy to undermine Jordan's national security. Hamzah had been attending tribal meetings critical of the king.
- Later, after mediation, Prince Hamzah signed a letter promising to abide by the traditions and approaches of the ruling monarchy, de-escalating the crisis.



#### **Analysis**

- This crisis was the result of **deep-rooted rifts and rivalries** within the royal family. Also, there is growing public resentment over the government's failure to implement successful political and economic reforms.
- The events put a spotlight on Jordan's unique position as one of the most stable countries in the Arab world. So far, Jordan's governing institutions proved to be robust and reliable in the face of myriad domestic and external challenges over the years.
- It had survived even the Arab Spring. However, recent events demonstrated that Jordan, too, is not immune to domestic instability.

#### **Why Stability of Jordan is Important?**

- For West and countries in the Gulf, Jordan is a **strategic partner** which can be relied upon for furthering political objectives in the region. This includes **war-torn Syria and Iraq** as well as **conflict-prone Israel and Palestine**.
- The support of Jordanian intelligence has proven critically important in the **fight against terrorism**.

- Jordan has served as a **haven for refugees** in the conflict-ridden region. It has also welcomed refugees after the 2003 US invasion of Iraq, and currently hosts over 10 lakh from Syria.
- Jordan is also considered important to any **future peace deal between Israel and Palestine**.

### Australia Cancels Belt and Road Deals

- Australia has cancelled two Chinese Belt and Road infrastructure building initiative deals with a state government. The two deals were struck by its **state of Victoria with China** under Beijing's flagship Belt and Road Initiative. These deals were struck in 2018 and 2019.
- In 2020, Australia had introduced new law. This law allowed it to **cancel any agreements between state authorities and foreign countries** which deemed to threaten the national interest.
- Using this law, the federal government of Australia announced that stated that these deals were inconsistent with its foreign policy.

### **Strain In Bilateral Relations Between Australia and China:**

- Bilateral ties were strained in 2018 when **Australia became the first country** to publicly **ban Chinese tech giant Huawei from its 5G network**.
- Relations worsened in 2020, when Australia called for an **independent probe into the origins of the coronavirus outbreak**. In return, China imposed a **series of trade sanctions on Australian exports** ranging from wine to coal.
- China was **Australia's largest trading partner** and **biggest source of overseas universities students** before the pandemic led the country to close its borders.

### Russia Plans to Launch Own Space Station

- Russia has announced that it plans to **build and manage its own floating laboratory** that will be launched into orbit by 2030 and its decision to **withdraw from International Space Station** in 2025.
- The announcement came with tensions soaring over **espionage claims, a Russian troop build-up along Ukraine's borders** and the deteriorating health of President Vladimir Putin's imprisoned critic Alexei Navalny.
- As Russia plans to develop the Arctic sea route as the ice melts, this station will be very helpful. It would also help Russia tide over challenges associated with the ageing ISS.
- Astronauts, presently, conduct experiments and adapt the latest technology to a hardware architecture that is over two decades old.

### **About International Space Station (ISS)**

- A space station is essentially a large spacecraft that **remains in low-earth orbit** for extended periods of time. It is like a large laboratory in space.
- The ISS has been in space since 1998. It orbits the earth at an altitude of 430 km, with an inclination of 52° with an orbital velocity of 7.7 km/s. It circles the Earth in **roughly 93 minutes, completing 15.5 orbits per day**.

- ISS has been known for the **exemplary cooperation between the five participating space agencies** that have been running it: **NASA** (United States), **Roscosmos** (Russia), **JAXA** (Japan), **ESA** (Europe), and **CSA** (Canada).
- The station is divided into two sections: the **Russian Orbital Segment (ROS)** is operated by Russia, while the **United States Orbital Segment (USOS)** is run by the United States as well as many other nations.
- For over 20 years since its launch, humans have continuously lived and carried out **scientific investigations on ISS under microgravity conditions**, being able to make breakthroughs in research not possible on Earth.
- So far, the floating laboratory has hosted more than **3,000 research and educational investigations**, carrying out cutting edge research in various disciplines, including biology, human physiology, and physical, material and space science.

### **Why Russia is Quitting ISS?**

- Relations between the **West and Russia have been going from bad to worse**. The US has blamed the Kremlin for carrying out the “**SolarWinds**” hack and interfering in the 2020 election.
- Recently, Russia received flak from the NATO alliance after it was accused by the Czech Republic of being involved in a 2014 explosion at an arms depot.
- US-Russia space rivalry has also been increasing. In 2020, the US accused Russia of carrying out a weapons test after a projectile was said to have been fired from a Russian satellite. Russia, in return, blamed the US for **treating space as a “military theatre”**.
- Last year, the US started to use the **SpaceX system**, developed by Elon Musk, for transporting astronauts to the ISS. This ended the reliance on **Russian Soyuz passenger vehicle**. The Russian transport vehicle served as the only way for transporting astronauts ever since the **US retired its Space Shuttle Program in 2011**.

### **EU’s Indo-Pacific Strategy**

Recently, the European Union adopted its strategy for Indo-Pacific. The strategy represents a balanced effort of 27 European countries to formulate a common position in the evolving debate on the Indo-Pacific.

#### **Key Highlights**

1. The promotion of cooperation stands at the core of the EU’s approach to the Indo-Pacific. This also includes **cooperation with third countries** for mutual benefit as well as enhancing cooperation within **regional multilateral organizations** such as ASEAN and ASEM.
2. **China Is In:** The strategy believes that if China is part of the problem, it is also part of the solution. The need to work with China is implicit through the reference to the China-EU Comprehensive Agreement on Investment (CAI) and the ASEM process, of which Beijing is part.
3. The strategy document **avoids naming and shaming**. Rather, it points out challenges for regional stability in the form of “geopolitical competition,” “tensions on supply chains and the existence of threats to the “universality of human rights.”

4. **Strong on Soft Issues:** The need to address global issues such as climate change, biodiversity loss, and the socioeconomic impact of the COVID-19 pandemic is among the top priorities for Europe and part of its highest added value for the region.
5. **Maritime Security:** Free, open, and secure maritime supply routes are a vital strategic interest of EU. Besides France and the U.K., Germany and the Netherlands are considering boosting their naval presence in the region, serving the interest and enhancing the maritime awareness of all EU member states.
6. **High Quality and Sustainable Connectivity:** Connectivity is a growing, multidimensional agenda that is likely to become more prominent in the future. EU is allocating more resources, multiplying partnerships with like-minded countries (Japan, India, ASEAN) and connecting with existing initiatives in the region.
7. **Assertive on Trade:** Following free trade agreements concluded with Japan, South Korea, Singapore, and Vietnam, EU is determined to deepen economic ties with other regional partners to level the playing field in the Indo-Pacific. *Diversification of supply chains* for a more resilient European economy and WTO reforms are also on the agenda.
8. **Transnational Security At Heart:** EU has demonstrated its lead in promoting digital governance, data protection, and cooperation in cyberspace, which will continue under the new strategy. The strategy aims to connect with its existing initiatives at the geographical margins of the Indo-Pacific in addressing transnational issues such as ocean governance, disaster prevention and recovery, piracy, cybercrime, and trafficking.
9. **EU As A Principled Security Player:** The promotion of democracy, rule of law, human rights, and international law are not only seen as crucial for the stability and resilience of local societies, but also as a contribution to the EU's long-term strategic interests in the region and its role as a global security player.

#### **Importance of Indo-Pacific for EU**

- EU is **not a traditional security actor** in the Indo-Pacific. However, this region is home to five of its top 10 trading partners. The sea lanes of this region ship a large volume of the EU's international trade.
- **France** considers itself an **Indo-Pacific power** due to its overseas territories located in this region, including **French island of Reunion** in the Indian Ocean and **French Polynesia** in the South Pacific.. Also, EU companies have made impressive footholds in this region.

A **strategic partner like India** can become an important pillar of the EU's Indo-Pacific strategy. India has offered continuity and sophistication over the years. In the post-Brexit scenario, the India-EU Summit will provide a platform for the consolidation of strategic partnership and provide an opportunity to enhance policy convergence on Indo-Pacific.

#### **ASEAN's Initiative on Myanmar**

- The Association of Southeast Asian Nations (ASEAN) has released a five-point statement on Myanmar crisis.
- It is an important framework for the way forward in tackling the fallout of the February 1 military coup in Myanmar.

**Five – Point Framework Include:**

- End violence
- Organise a constructive dialogue among all parties
- Appoint a special ASEAN Envoy to facilitate the all-party dialogue
- Acceptance of aid
- The Special ASEAN Envoy will visit Myanmar with the Military leader

**Analysis**

- Many experts believe the first step has been taken but the road towards a resolution will be tortuous.
- However, the consensus is **silent on the release of political prisoners** or the future role of the National Unity government. The consensus is also silent on the timeline to implement democracy. Hence, consensus is being criticised that ASEAN is encouraging military coup.
- **India**, however, **has endorsed the ASEAN initiative** and pledged that its diplomatic engagement with Myanmar will be aimed at strengthening these efforts.

[For detailed analysis, please refer the topic **“Myanmar Coup”** from February 2021 edition of CA magazine]

**Ecocide Bill of France**

- The French National Assembly has approved the **creation of an “ecocide” offence**. It is aimed at protecting the environment and tackling climate change.
- If it becomes law, it will apply to “the most serious cases of environmental damage at national level. Transgressors will be liable to up to **10 years in prison** and a **fine of 4.5 million euros** (\$5.4 million).
- The Assembly also gave the green light to an **offence of endangering the environment**, on the model of endangering life, punishable by three years in prison and a 300,000 euro fine.

**New Russian Legislation Approved by Putin**

- Russian President Vladimir Putin signed the legislation that may be able to keep him in power until 2036. Putin, a former KGB officer, completes his ongoing six-year tenure — his fourth as President — in 2024. Before the new legislation was signed, a **President could serve a maximum of two consecutive six-year terms**.
- That **term limit remains even in the new legislation**. What has changed is that Putin’s previous terms will not be counted once the new legislation comes into effect.

[For detailed discussion, please refer the topic **“Constitutional Amendments in Russia”** from July 2020 edition of CA magazine]

**U.K. Help to Hong Kong Migrants**

- The British government is setting up a 43-million-pound (\$59 million) fund to help migrants from Hong Kong settle in the country. Migrants are escaping the increasing political repression in Hong Kong.

- The offer extends to **holders of British National (Overseas) passports** who have been offered special visas, opening a path to work, residency and eventual citizenship to up to 5 million of Hong Kong's 7.4 million people.
- The integration program will provide funding to help arrivals access housing, education and jobs.

[Also refer the topic "**China Accused for Breaching Hong Kong Treaty**" from **November 2020** edition of CA magazine]

### **China, Bhutan Discussion On Border Dispute**

- China and Bhutan have discussed a roadmap to expedite their boundary talks.
- They also agreed to continue to maintain peace and tranquility along their border pending final settlement of their dispute.

#### **Background**

- China and Bhutan do not have diplomatic relations but maintain contacts through periodic visits by officials.
- **Bhutan shares over 400-km-long border with China** and the two countries have held 24 rounds of boundary talks in a bid to resolve the dispute.
- The **Boundary Talks between Bhutan and China began in 1984**. Both the countries have **signed the Guiding Principles** on the Settlement of the Boundary Issues in 1988 and the Agreement on Maintenance of Peace and Tranquillity along the border areas in 1998.

[For detailed discussion on the issue, please refer the topic "***Bhutan Demarches China***" form July 2020 edition of CA magazine]

### **Easing of Guidelines for OCI Cardholders**

- The government has simplified the process of maintaining Overseas Citizens of India (OCI) cards.
- Now, the OCI cardholders will be **required to get their document re-issued only once at the age of 20** instead of multiple times needed currently to be done.
- This will remove the confusion to many OCI cardholders on the process of renewing the card at the age of 20 and 50 and one doesn't have to go through the whole OCI card renewal process again.
- It will also encourage more overseas Indians to become OCIs and it will benefit India, through their travel, business and investment in India.
- So far India has issued about 37.72 lakh OCI cards.

#### **Facts:**

- OCI citizens are of Indian origin but they are foreign passport holders and are not citizens of India. India **does not allow dual citizenship** but provides them certain benefits under Section 7B(l) of the Citizenship Act, 1955 to the OCIs.
- As per norms, a foreigner of Indian origin or a foreign spouse of an Indian citizen or foreign spouse of an OCI can be registered as an OCI. OCI card is a **life-long visa for OCIs to stay in India**.

[Also refer the topic “**OCI Card Holders No Longer Required to Carry Old Passports for India Travel**” in prelims section of March 2021 edition of CA magazine]

### **Indian e-Visa Restored For 156 Countries**

- India has now **restarted e-visa facilities for 156 countries**. This facility is applicable for international tourists from 156 countries, who wish to visit for conferences, medical purposes, or business. The e-visa also extends to medical attendants.
- International air travel was **suspended by MHA** on March 23, 2020, to and from 107 immigration check-posts.

#### **About e-Visa**

- Visa restrictions were then relaxed and **later citizens from the U.S., the U.K., France, and Germany under air bubble schemes**.
- The **e-visa system was introduced** by the Indian government in 2014. Later, it was expanded in 2017-2018.
- e-Visa is given in **five categories**—tourist, business, conference, medical, and medical attendant. The Ministry of Home Affairs is the nodal ministry for issuing e-Visa.
- Entry through e-visas is allowed only at 28 designated international airports and five major seaports in India.

### **US Puts India on Currency Manipulator Watchlist**

- The US Treasury Department has put **India along with 10 other economies** including Singapore, Thailand and Mexico on the “Monitoring List”.
- This is the **second time since the start of the pandemic** that India has figured on the list, even as the RBI has purchased large quantities of dollars on account of huge capital inflows.

#### **Reason Highlighted In the Report:**

- India’s trade surplus with the United States had gone up by nearly \$5 billion in the financial year 2020/21 that ended on March 31.
- India’s bilateral trade surplus in goods with the United States totalled \$24 billion in 2020, along with a services trade surplus of \$8 billion.
- The report also highlighted that the RBI’s dollar **purchase stood at 5% of the GDP** exceeded the 2% threshold.

#### **India’s Response**

- India’s commerce said that the move is **an intrusion of the policy space** of the RBI as India’s central bank is not accumulating reserves and its activity in the foreign exchange market is perfectly balanced. RBI is mandated to provide stability in the currency, as a result of which central banks buy and sell foreign currency.
- India’s overall reserves have been fairly steady at \$500-600 billion. It is not accumulating reserves.

[For detailed discussion on criteria for inclusion in the list and possible impact, please refer the topic **“US Puts India on its Currency Watchlist”** from December 2020 edition of CA magazine]

### **Italy Launches Mega Food Park in India**

- Italy has launched its **first-ever mega food park and food processing unit in India**.
- The pilot project - **‘The Mega Food Park’** - was launched virtually.
- The project intends to promote agricultural and industrial growth of the two countries, focus on the research and development of new and enhanced technologies in these very sectors.

### **About Mega Food Park Scheme**

- Implemented by the Ministry of Food Processing.
- The scheme is now under Pradhan Mantri Kisan Sampada Yojana (PMKSY).
- The scheme aims at creating a value chain from the farms to the markets. The scheme ensures an increase in farmers’ income, creation of employment opportunities in the rural sector, reduction in wastage, and increase in value addition.
- The Indian Government had envisioned 42 Mega Food Parks under the Scheme of which 22 Mega Food Parks are operational in India.

[Also refer the topic **“India-Italy Virtual Summit”** from November 2021 edition of CA Magazine]

### **India-Netherlands Virtual Summit**

- PM Modi and his counterpart from Netherlands, Mr. Mark Rutte, co-chaired a Virtual Summit between India and the Netherlands in April 2021.
- The two leaders held an in-depth exchange of views on further deepening the bilateral relationship in wide-ranging areas of cooperation including trade and economy, water management and agriculture sector, smart cities and urban mobility, science & technology cooperation, public health & health care and space.

### **Key Highlights**

#### **1. Trade, Commerce and Investments**

- The two leaders noted the success of the **digital Trade Mission** between these two countries that took place virtually in February 2021.
- **The three specific domains** of the trade mission were: **water management** (water safety and security), **food chains** (solutions in food waste, horticulture, dairy and aqua culture) and **sustainable energy** (solar energy, hydrogen, biofuels and energy transition).
- Despite COVID 19 related constraints, the **Netherlands has become the 3rd largest FDI investor in India** and **India the fourth largest FDI investor in the Netherlands** in the year 2019-20.
- Both sides welcomed the joint announcement on setting up a bilateral **Fast Track Mechanism for investment facilitation and issue resolution**.

- They also acknowledged the progress made by the **StartUpLink initiative** (DPIIT, Invest India, Startup India and the Netherlands Embassy).

## 2. Towards a Strategic Partnership on Water

- Indo-Dutch partnerships in the field of water cover areas like tackling river water pollution, delta management, promoting water management, water quality issues and waste water recycling, decision support systems and introduction of new water technologies.
- Both sides agreed to launch '**Strategic Partnership on Water**'. They agreed to elevate **Joint Working Group on Water to Ministerial level**.
- On-going projects in the water sector includes:
  - ✓ The Dutch India Water Alliance for Leadership Initiative (*DIWALI*) platform for designing solutions to water challenges,
  - ✓ The Local Treatment of Urban Sewage Streams for Healthy Reuse (*LOTUS-HR*), and
  - ✓ The Indo-Dutch R&D projects under Namami-Gange Programme.
  - ✓ *Water4Change consortium* for designing integrated urban water systems (it was formed during the 2019 Technology Summit in which the Netherlands was a partner country).
- Both leaders also noted about a pilot project on '**Pollution and effective waste management of textile industrial cluster in Panipat, Haryana**' under collaborative approval.

## 3. Agriculture

- The two leaders reiterated commitment to successfully complete the establishment of all 25 *Centres of Excellence* (CoEs) sanctioned under the **Indo-Dutch Joint Action Plan on Agriculture** by 2025.
- The upcoming **Joint Agricultural Working Group** would provide an opportunity for both the countries to discuss further deepening of the cooperation in agriculture.
- Several initiatives taken recently include:
  - ✓ the production of **tempeh in Bangalore** as an alternative source of protein and
  - ✓ the development of the Biomass Initiative for the conversion from paddy straw to energy and fertilizers
- The two leaders look forward to India's participation at the **International Horticultural Expo Floriade in Almere in 2022**.

## 4. Smart Cities And Urban Mobility

- The two leaders welcomed the extension of MoU to promote technical cooperation in the fields of **Spatial Planning, Water Management and Mobility Management**.
- Under the MOU, India seeks to explore cooperation with the Netherlands in urban development, utilising its strength in integrated urban planning, including provision of adequate public spaces, pedestrianisation, cycling infrastructure and preservation of water bodies etc.
- India also invited the Netherlands to consider adoption of smart cities in India as well as to explore financial support for green projects in smart cities.

**5. Science and Technology**

- India and the Netherlands have agreed to launch two new calls on the **WAH! Agenda**. The WAH! Agenda focuses on societal challenges in the areas of *Water, Agriculture, and Health*.
- With an ambition to leverage advances in Big Data, IoT and AI, the two countries are also working on a **new partnership initiative** focused on **Digital Health, Diagnostics and Devices**.

**6. India-EU Cooperation**

- Both the leaders expressed their willingness to execute the actions as mentioned in the **EU-India Roadmap 2025**.
- They welcomed the **upcoming India-EU Leaders’ Meeting in Portugal** in May 2021 which will set a new milestone for India-EU Strategic Partnership.
- The two sides also welcomed the proposal for a **comprehensive Connectivity Partnership** between India and the EU with the aim to promote connectivity initiatives.

**India, France Cooperation on Gaganyaan Mission**

Space agencies of India and France have inked an agreement for cooperation for the **country’s first human space mission Gaganyaan**.

**What Would French Space Agency Do?**

- **Equipment** developed by French space agency CNES, tested and still operating aboard the International Space Station will be made available to Indian crews. The CNES will also be supplying fireproof carry bags made in France to shield equipment from shocks and radiation.
- CNES will train India's **flight physicians**. Flight physicians or surgeons are responsible for astronaut's health before, during and after the flight. Currently, all space physicians are from the Indian Air Force.
- The agreement provides for CNES to support the implementation of a scientific experiment plan on validation missions, exchange information on food packaging and the nutrition programme, and above all, the use of French equipment, consumables and medical instruments by Indian astronauts.

**Gaganyaan: Cooperation with Other countries**

- **Russia** - For the training of four astronauts shortlisted for the Gaganyaan mission.
- It is also in talks with **Australia** to have a **ground station at the Cocos Islands** for the Gaganyaan mission.

**India - France Space Cooperation**

- France and India share robust ties in the area of space cooperation. The **first space agreement** between France and India **dates back to 1964**.
- Existing partnerships between the two nations cover almost all areas of space activity. ISRO will also be launching the joint **Oceansat 3-Argos** mission this year.
- In March 2018, India and France had **unveiled a joint vision for space cooperation**.
- The two nations have also agreed to work on **inter-planetary missions to Mars and Venus**.

**India-Seychelles High Level Virtual Event**

- PM Modi took part in a high-level virtual event with the President of Seychelles to inaugurate a range of Indian projects in Seychelles.
- This included:
  - Joint e-inauguration of the new Magistrates' Court Building in Seychelles;
  - Handing over of a Fast Patrol Vessel to Seychelles Coast Guard;
  - Handing over of a 1 MW Solar Power Plant;
  - Inauguration of 10 High Impact Community Development Projects (HICDPs).
- The new Magistrates' Court Building in the capital city Victoria, is **India's first major civil infrastructure project** in Seychelles built with grant assistance.
- Seychelles occupies a central place in the Prime Minister's vision of '**SAGAR**' - '**Security and Growth for All in the Region**'.
- The inauguration of these key projects demonstrates India's privileged and time-tested role as a reliable partner of Seychelles for meeting its infrastructural, developmental and security requirements and is a testimony to the deep and friendly ties between the people of India and Seychelles.

**India's COVID-19 Assistance**

- Seychelles received over **four tonnes of life-saving medicines including 50,000 HCQ** tablets under Mission 'SAGAR' in May last year.
- It was the first African country to receive 50,000 doses of Covishield vaccine doses from India on January 22 under India's **Vaccine Maitri initiative**.

**Australia-India Indo-Pacific Oceans Initiative Partnership**

- Australia has launched the **Australia-India Indo-Pacific Oceans Initiative Partnership (AIPOIP) grant program** to help support a free, open and prosperous Indo-Pacific underpinned by the rule of law and respect for sovereignty.
- Under this grant programme, **Australia announced a Rs 8.12 crore grant**. To apply for the grant, the company or organization should be located in either India or Australia and have partners in either of the 2 countries.

**About The Program**

- The AIPOIP will help shape maritime cooperation in the Indo-Pacific to support an open, inclusive, resilient, prosperous and rules-based maritime order.
- It is a practical initiative under the **Australia-India Joint Declaration on a Shared Vision for Maritime Cooperation** in the Indo-Pacific, as part of the Australia-India Comprehensive Strategic Partnership announced during the Virtual Summit in June 2020.
- The AIPOIP will help develop the **Indo-Pacific Oceans Initiative (IPOI)** announced by India at the **14th East Asia Summit** at Bangkok.
- This is the first phase of the four-year (2020-2024) grant program under this Partnership.

### About IPOI

- IPOI seeks to ensure security and stability of the regional maritime domain. IPOI is an open, **non-treaty-based initiative** for countries to work together for cooperative and collaborative solutions to common challenges in the region.
- IPOI draws on existing regional architecture and mechanisms to focus on seven pillars: Maritime Security, Maritime Ecology, Maritime Resources, Capacity Building and Resource Sharing, Disaster Risk Reduction and Management, Science, Technology and Academic Cooperation, and Trade Connectivity and Maritime Transport

[Also refer the topic “**India-Australia virtual summit**” from June 2020 edition of CA magazine]

### India, Germany Agreement on Combating Plastic Entering the Marine Environment

- India and Germany have signed a Memorandum of Understanding on “**Cities Combating Plastic Entering the Marine Environment**”.
- The project’s outcomes are completely in line with the objectives of **Swachh Bharat Mission-Urban** focusing on **sustainable solid waste management** and to **phase out single use plastic by 2022**.
- The project, aimed at enhancing practices to prevent plastic entering the marine environment, will be undertaken at the **national level, select states** (Uttar Pradesh, Kerala and Andaman & Nicobar Islands) and in the **cities of Kanpur, Kochi and Port Blair** for a period of three and a half years.

### India and Marine Litter

- Currently, **India is the twelfth largest source** of marine litter in the world. By 2025, it is expected to become the **fifth largest source of marine litter**.
- India consumes 16.5 million tonnes of plastics annually. Of this, 43% are single use plastic material.
- It is estimated that **15-20% of all plastics are entering oceans via riverine ecosystems** of which 90% are contributed by 10 of the world’s most polluting rivers. **Two of these river systems are located in India, namely Ganga and Brahmaputra**.

### UN Food Systems Summit 2021

- The United Nations Secretary General has called for the first ever UN Food Systems Summit to be held in September 2021. The term “food system” refers to the constellation of activities involved in producing, processing, transporting and consuming food.
- The aim of this summit would be to strategize the actions for positive change in **Agri-food systems** in the World to realize the vision of the 2030 Agenda for Sustainable Development.

### Key Highlights

- The Summit 2021 is planned to hold **consultations for the five Action Tracks** related to safe and nutritious food, sustainable consumption patterns, nature-positive production, advance equitable livelihoods, and resilience to vulnerabilities, shocks and stress.
- The Summit will focus on levers and pathways to shape food systems nationally and globally to accelerate progress in the SDGs.

### **India's Role**

- India with close to 18% humanity on the Globe owes paramount stake in this Food System Summit.
- India has volunteered to the **Action Track 4: Advance Equitable Livelihoods for the UN Food System Summit 2021**. It has constituted a high level Interdepartmental Group under the Chairmanship of Prof. Ramesh Chand, Member, NITI Aayog.
- This group will conduct National Dialogues with all the stakeholders of agri-food systems for exploring national pathways towards creating sustainable and equitable food systems in India.
- The **first National Level Dialogue** on Agri-Food Systems-Advancing Equitable Livelihoods was conducted in April, 2021.

### **Second World Ocean Assessment**

To help decision-makers navigate the complex issues surrounding ocean waters, the United Nations released the **Second World Ocean Assessment (WOA II)**. This report describes the current state of our marine environment.

#### **Background:**

- The **first World Ocean Assessment was released at the end of 2015**. This assessment (the first of its kind) aimed to cover all environmental, social and economic aspects related to the ocean.
- Its purpose was to provide a baseline on the state of the ocean, including human uses, and the relationships between humans and the ocean.
- Following the release of the first assessment, a **second group of experts** was brought together to deliver an updated assessment of the world's ocean – WOA II – that would reflect this improved understanding.

#### **Key Highlights:**

- WOA II provides scientific information on the **state of the marine environment** to support decisions and actions for the achievement of Sustainable Development Goals, in particular goal 14, as well as the implementation of the **United Nations Decade of Ocean Science for Sustainable Development**.
- As per report, the **number of dead zones** in the oceans have doubled (400 in 2008 to 700 in 2019). It also highlighted that 90% of the **Mangrove Seagrass and marsh plant** species are facing extinction.
- The **heat content in the oceans** has more than doubled since 1990 thereby affecting the marine lives.
- It provided an updated assessment at a global scale of the conservation status and main threats to marine turtles, snakes and iguanas. As per the report, marine turtle populations have experienced **positive growth rates** since WOA I, but overall, **trends are still decreasing** and many threats remain for these animals.
- Bycatch, unregulated harvesting, marine pollution, habitat loss, coastal development, disease and climate change are common threats to the marine reptiles.

### **G20's Green Light to IMF for Fresh SDR Issue**

- G20 nations and the international monetary and financial committees of the International Monetary Fund (IMF) has given their nod to **issuing fresh Special Drawing Rights (SDR) worth \$650 billion**.
- This step has been taken to help poor countries fight the economic fallout of the coronavirus pandemic. It would help **boost reserves of all nations**, and **avoid pushing low-income countries (LICs) into further distress**.

#### **India's Stand**

- Initially, India was opposed to the idea of general allocation of SDR. Later, it softened its stand on the proposal at the last minute during the latest G20 meeting.
- India was opposed to this idea as it firmly believed that the **general allocation of SDR is not a substitute for structural quota and governance reforms**.
- SDR allocations are asymmetrical, with as much as 62% going to advanced economies and only 3% to LICs. Hence, India was in favour of a limited SDR allocation targeted at LICs.
- Economists all over the world are in agreement with India's observation. The fresh SDR issue will lead to **skewed allocations towards developed countries** who need it the least, with the **US, EU and the UK receiving about half the funds**, while low-income countries are expected to get only about \$21 billion worth of liquidity.
- Analysts have also opposed this move by saying that SDR provides an **unconditional cash injection** to those economies that have been **delaying debt payments and are in need of structural reforms**.

A supermajority vote at the IMF for **major policy decisions requires 85% of votes**. India has a voting right of 2.6%.

As per an IMF resolution, the **16th General Review of Quotas should be concluded by December 15, 2023**.

#### **How The Latest SDR Issue Is Going to help?**

- For countries with low forex reserves, SDR provides a great way to pump in liquidity. The latest SDR allocation has been made in the wake of the COVID-19 pandemic to facilitate the recovery efforts of developing economies.
- Further, it is very challenging for debt-ridden economies to find lenders and thus, SDR provides them a great way to tide over financial crisis situations.
- Meanwhile, SDRs can be used to further fiscal stimulus efforts by richer countries.

#### **What Is SDR?**

- It is an international reserve asset (also known as paper gold of IMF) created in 1969 to supplement the official reserves of its member countries.
- The value of SDR is based on five currencies of the world - US dollars, Japanese Yen, Chinese Renminbi, British pound sterling and Euro.
- In 2009, the IMF allocated 182.6 billion USD of SDR in the wake of global financial crisis.

### **Indian Army Closes Military Farms**

- After a service of 132 years, Indian Army has **decided to close the military farms**.

- Military farms in India are spread over more than 20,000 acres of prime defence land across the country in cities like Ambala, Kolkata, Srinagar, Agra, Pathankot etc.
- The farms were **established by the British Army** for the **production and supply** of hygienic, wholesome and **fresh cow milk to troops** located in various garrisons across India.
- First military farm was established on February 1, 1889 in the then Allahabad. By independence, a total of 130 farms were established.
- **Reasons for closing down military farms:**
  - The proliferation of dairy business in the country had ensured that **fresh milk could be procured in every corner of the country** and there was no longer any forced dependence on Military Farms.
  - Spread over 20,000 acres of land across the country, these military farms had become a liability for the force as they were **occupying a substantial amount of land** which could be used for other purposes.
  - The **Indian Army will save Rs 280 crore** that was spent on the maintenance of acres of land, cattle and salaries to the staff.

### Joint Logistics Node in Mumbai

- Chief of Defence Staff (CDS), General Bipin Rawat, has operationalised the **third Joint Logistics Node (JLN) in Mumbai**. The other two JLN's are in **Guwahati** and tri-services, **Andaman and Nicobar Command, Port Blair**.
- This even marks an important step towards **better integration** between the Army, the Navy and the Air Force.
- Under the CDS, the **theaterisation of commands** is being planned, and the Air Defence Command and the Maritime Command are likely to be set up later this year.

### **Significance of JLN**

- It will provide **integrated logistics cover** to the armed forces for their small arms ammunition, rations, fuel, general stores, civil hired transport, aviation clothing, spares and also engineering support in an **effort to synergise their operational efforts**.
- It would result in saving of manpower, economical utilisation of resources leading to financial savings.
- Establishment and operationalisation of JLN's is a very **important first step** in the direction of **logistics integration of our three services**.
- It would bring better synergy among the three forces as they will accept each other's limitations and learning from each other's strengths and best practices.

### India's First Chief of Defence Staff

- General Bipin Rawat was appointed as the **country's first** CDS in December 2019.
- The **other countries** that hold Chief of Defence Staff in the world includes **Italy, France, China, Spain, UK, Canada and Japan**.

**Role of CDS**

- The CDS will act as the **Principal Military Adviser** to the defence minister on tri-service matters. The three service chiefs will continue to advise the defence minister on matters exclusively concerning their respective forces.
- The CDS will handle all tri-Service issues and push for greater jointness among the Army, Navy and IAF.
- Though a **four-star general** like the three chiefs, the CDS will be the '**first among equals**' in the hierarchy. But the Army, Navy and IAF chiefs will have operational command of their forces.

**Govt. To Reboot Dated Opium Strategy**

- Central Government is mulling ways to boost yield from poppy. For this, it has decided to **rope in the private sector** to commence **production of concentrated poppy straw** from India's opium crop.
- It will boost the yield of alkaloids, used for medical purposes and exported to several countries.

**Current System**

- India currently only **extracts alkaloids from opium gum at facilities controlled by the Revenue Department in the Finance Ministry.**
- This entails farmers extracting gum by manually lancing the opium pods and selling the gum to government factories.
- **Uttar Pradesh, Rajasthan and Madhya Pradesh** are the **three traditionally opium growing States**, where poppy crop cultivation is allowed based on **licences issued annually by the Central Bureau of Narcotics.**

**Switching to New Technologies**

- A field trial report showed **higher extraction of alkaloids** using the **Concentrated Poppy Straw (CPS)**. Alkaloid extraction from the current opium crop using the CPS was found more than opium gum.
- If CPS varieties of seeds are used, it is possible to have two-three crop cycles in one year. CPS varieties of seeds can be grown in indoor greenhouses too.

**Steps Necessary to Implement the Change:**

- Roping in private players to partner with the government in producing CPS and extracting alkaloids from it is likely to **require amendments to the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985.**
- Govt. will have to frame the modalities for this endeavour, with an appropriate model including public-private partnership (PPP).

**Nagaland's Version of NRC**

- The Nagaland government has reportedly been trying to revive the **Register of Indigenous Inhabitants of Nagaland (RIIN)** exercise. It is widely being seen as a variant of Assam's National Register of Citizens.

- This exercise was **launched in July 2019** with the stated **objective** of preventing outsiders from obtaining fake indigenous certificates for seeking jobs and benefits of government schemes.

### **Background**

- The State government had formed a three-member panel headed by retired bureaucrat Banuo Z. Jamir. This panel would study, examine, and recommend and advise on the implementation of RIIN.
- RIIN committee had been tasked with determining the eligibility criteria to be an indigenous inhabitant, place of registration as indigenous inhabitant, the basis of claims of being indigenous, and the nature of documents that will be acceptable as proof of being indigenous.
- However, this exercise was **suspended following protests** from community-based and extremist organisations.

### **RIIN Exercise: Facing Opposition**

- Many Naga tribal groups are **protesting December 1, 1963** – the day **Nagaland attained statehood** – **as the cut-off date** for determining the “permanent residents” of the State.
- As per them, this date is likely to **exclude Nagas who have come from beyond the boundaries of Nagaland.**
- Also, they fear that the **non-indigenous Nagas** could be treated as “illegal immigrants” and their lands and property confiscated. In this process, the idea of the Nagas as a people to live together and their aspiration to live with self-determination will be irreparably damaged.
- Naga tribes living in Assam, Manipur and Arunachal Pradesh in India and in Myanmar have a legitimate claim to their ancestral homeland. After the RIIN exercise, they would lose their claim.

### **Paris Call for Trust and Security in Cyberspace**

Microsoft president has urged India and US to join the Paris Call for Trust and Security in Cyberspace to deal with new cybersecurity threats facing the world.

#### **Reasons Cited:**

- The world’s technology majors have been moving their supply chains out of China over the past 18 months. This creates an opportunity for India to become a **hardware manufacturing location.**
- Also, the recent spate of cyberattacks is a wake-up call for tech companies as well as governments.
- There is simply a shortage of cybersecurity professionals in the workplace. For this, there is need for a global initiative to really accelerate all kinds of training to put more cybersecurity professionals in place.

#### **About Paris Call for Trust and Security in Cyberspace:**

- It is a nonbinding declaration which deals with new cybersecurity threats facing the world.
- It calls states, private sector and civil society organizations to work together to promote security in cyberspace and to counter disinformation.

<b>2021 Norton cyber–Safety Insights Report</b>
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| <ul style="list-style-type: none"><li>• Report has been released by The NortonLifeLock.</li></ul> |
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- As per the report, **59% of Indians**, that is, **more than one in two adults** in the country have **experienced cyber-crime in the last twelve months**.
- The **remote work atmosphere** created by COVID-19 has **made it easier** for the hackers and cybercriminals.
- The report highlights the fact that around **52% of the adults in India do not know** how to protect themselves from cybercrime. More than 27 million Indian adults experienced **identity theft in the past 12 months**.

### **Nirav Modi's Extradition**

- The U.K.'s Home Department has approved the **extradition of diamond merchant Nirav Modi to India** in connection with the ₹13,758-crore **Punjab National Bank (PNB) fraud**.
- Modi now has the legal recourse of approaching the U.K. High Court within 14 days. If he failed to appeal within the stipulated time, he will be extradited within 28 days of the Secretary of State's decision to order extradition.

### **Background**

- In February 2021, the Westminster Magistrates Court had found sufficient grounds warranting Mr. Nirav Modi's trial in India.
- A special court, in December 2019, declared Nirav Modi a **fugitive economic offender**, on a plea of the Enforcement Directorate.

### **Who are Fugitive Economic Offenders (FEO)**

- An FEO is defined by **The Fugitive Economic Offenders (FEO) Act, 2018**.
- A fugitive economic offender is a person against whom an arrest warrant has been issued in relation to a scheduled offence and who has left India to avoid criminal prosecution or one who refuses to return to the country to face criminal prosecution.
- The FEO Act aims to provide for measures to deter fugitive economic offenders from evading the process of law in India by staying outside the jurisdiction of Indian courts.

### **Why Was Such A Law Required**

- Economic offences relate to fraud, counterfeiting, money-laundering, tax evasion, etc. Among the laws available for prosecuting these offences are: The Prevention of Money-Laundering Act (PMLA), 2002, The Benami Properties Transactions Act, 1988, and The Companies Act, 2013.
- Sections of The Indian Penal Code, 1860 and The Code of Criminal Procedure, 1973, also cover offences such as forgery and cheating.
- However, it was observed that **existing civil and criminal laws did not contain specific provisions to deal with such offenders**.
- Also, it was also argued that procedures under these laws were **time-consuming**, led to roadblocks in investigation and **impacted the financial health of banks**.

## **SIPRI Report in Military Spending**

- The Stockholm International Peace Research Institute (SIPRI) has released its report on trends in global military expenditure in 2020.
- The report found that the **world's top military spenders** — the US, China and India — **saw their military spending go up compared to 2019**, even during a pandemic year.

### **Key Highlights**

- The global military expenditure **rose to \$1981 billion** last year, an **increase of 2.6 per cent** in real terms from 2019. The increase in spending came in a year when the global GDP shrank by 4.4 per cent due to the economic impacts of the Covid-19 pandemic.
- As a result, the **military burden** (military spending as a share of GDP), reached a global average of 2.4 per cent in 2020, up from 2.2 per cent in 2019. This was the biggest year-on-year rise in the military burden since the global financial and economic crisis in 2009.
- The **five biggest spenders** in 2020, were the United States, China, India, Russia and the United Kingdom, accounting for 62 percent of the total military expenditure across the world.
- In 2020, the **United States' military spending** was **3.7 per cent** of its GDP while the corresponding numbers for **China and India** were **1.7 per cent** and **2.9 per cent** respectively.
- In 2020, US military expenditure reached an estimated \$778 billion. As the **world's largest military spender, the USA** accounted for 39 per cent of total military expenditure in 2020.
- The **top five global arms exporters** were US, Russia, France, Germany and China in 2016-2020.

### **India's Military Expenditure**

- India's military expenditure in 2020 was 2 percent higher at \$72.9 billion over 2019.
- This increase is largely due to India's ongoing conflict with Pakistan over Kashmir and renewed border tensions with China, as well as India's more general rivalry with China as the main regional power in Asia and Oceania.
- India's annual military expenditure, includes a huge pension bill for veterans and defence civilians. For instance, in the 2021-2022 defence budget, the pension bill was Rs 1.15 lakh crore out of the total Rs 4.78 lakh crore outlay.
- Moreover, India has a weak domestic defence-industrial base. This makes India the **world's second-largest arms importer** just behind Saudi Arabia. India accounted for 9.5% of the total global arms imports during 2016-2020.
- **Arms imports by India decreased by 33 per cent** between 2011–15 and 2016–20. **Russia was the most affected supplier**, although India's imports of US arms also fell, by 46 per cent.
- The report attributed the fall **not to the government's push to make India self-reliant in defence manufacturing**, but to factors including reducing the dependence on Russian arms, and the complex procurement procedure.

**Tejas To Carry Python-5 Missile**

- Indigenously-developed light combat aircraft Tejas has been cleared to carry **fifth generation Python-5 air-to-air missile** as part of its weapons package.
- Tejas, manufactured by **Hindustan Aeronautics Ltd**, is a **single engine** and highly agile **multi-role supersonic fighter aircraft** capable of operating in high-threat air environments.
- The aircraft is a **potent platform for air combat and offensive air support missions** while reconnaissance and anti-ship operations are its secondary roles.
- Python-5 missile has been developed by the **Israeli defence company Rafael Advanced Defense Systems**.

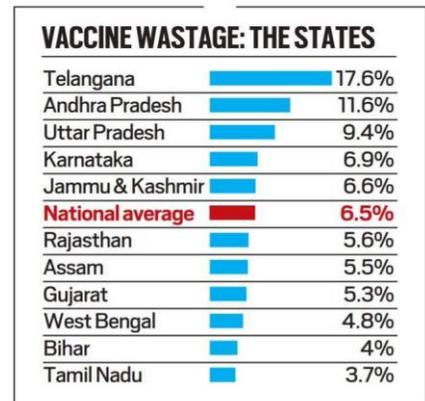
**B.1.617**

- The **‘double mutant’** virus that scientists had flagged last month as having a bearing on the spread of the pandemic in India, has a formal **scientific classification: B.1.617**.
- The B.1.617 variant of SARS-CoV-2 carries **two mutations, E484Q and L452R**. Both are separately found in many other coronavirus variants, but they have been reported together for the **first time in India**.
- According to the INSACOG, B.1.617 was first detected in India in **December 2020**. However, it is yet to be classified as **‘Variant of Concern (VOCs)’**.
- So far, only **three global VOCs** have been identified: **the U.K. variant (B.1.1.7), the South African (B.1.351) and the Brazilian (P.1) lineage**.

*To read more about Mutated Novel Coronavirus, please refer to The Recitals- February 2021.*

**Vaccine Wastage**

- Prime Minister has **raised concerns on vaccine wastage** emerging from the Covid-19 inoculation drive.
- Vaccine wastage is an **expected component of any large vaccination drive**, and a vaccine is procured from the maker with an estimated wastage.
- For each vaccine type, the wastage has to be within recommended limits. In general, high vaccine wastage inflates vaccine demand and increases unnecessary vaccine procurement and supply chain costs
- Vaccine wastage is directly linked to vaccine usage, which is the proportion of vaccines administered against vaccines issued to a vaccination site. The **vaccine wastage rate is defined as 100 minus the vaccine usage rate**.
- The **wastage rate directly determines the “wastage factor”** that needs to be established for each vaccine in the immunisation schedule to accurately plan vaccine needs.
  - **Wastage Multiple Factor (WMF) = 100/(100 – wastage).**



- In the Centre’s operational guidelines on Covid-19 vaccination, **WMF has been calculated at 1.11** after assuming an allowable programmatic wastage of 10%.  
 $WMF = 100 / (100 - 10) = 1.11$ .
- Wastage occurs at three levels: during transportation; during cold chain point; and at a vaccination site — both at service and delivery levels.
- **Ways To Reduce Vaccine Wastage**
  - Proper planning of sessions at vaccination centre level
  - Adequate training of vaccinators
  - Open vial policy guidelines have to be strictly followed- Once COVID-19 vaccine vial opened, it needs to be used fully within four hours



**MANAS App**

- The Principal Scientific Adviser (PSA) to the Government of India launched the “**MANAS**” - **Mental Health and Normalcy Augmentation System- App** to promote wellbeing across age groups.
- MANAS was endorsed as a national program by the **Prime Minister’s Science, Technology, and Innovation Advisory Council (PM-STIAC)**. It was jointly executed by **NIMHANS Bengaluru, AFMC (Armed Forces Medical College), Pune and C-DAC (Centre for Development of Advanced Computing) Bengaluru.**
- **Motto:** Uttam Mann, Saksham Jan
- It is a comprehensive, scalable, and national digital wellbeing platform and an app developed to augment mental well-being of Indian citizens.
- It integrates the health and wellness efforts of various government ministries, scientifically validated indigenous tools with gamified interfaces developed/researched by various national bodies and research institutions.
- It is based on life skills and core psychological processes, with universal accessibility, delivering age-appropriate methods and promoting positive attitude focusing on wellness.

**Prime Minister’s Science, Technology, and Innovation Advisory Council (PM-STIAC)**

- It is an overarching council that facilitates the PSA Office to **assess the status in specific science and technology domains**, comprehend challenges in hand, formulate specific interventions, develop a futuristic roadmap and advise the Prime Minister accordingly.
- **Nine Missions Under PM-STIAC** -- Natural Language Translation, Quantum Frontier, Artificial Intelligence, National Biodiversity, Electric Vehicles, BioScience for Human Health, Waste to Wealth, Deep Ocean Exploration, and AGNI.

### **NanoSniffer**

- The **Indian Institute of Technology (IIT)-Bombay** incubated startup **NanoSniff Technologies** has developed the **world's first micro-sensor based explosive trace detector (ETD)** which will be marketed by IIT Delhi-incubated startup Vehant Technologies.
- To be branded and marketed as '**NanoSniffer**', the device has been developed for the first time in the world using a **micro-electromechanical system (MEMS)**, with its core technology being protected by patents in the US, Europe and India.
- A fully made in India product in terms of R&D and manufacturing, the indigenously developed ETD device can **detect explosives in less than 10 seconds** and it also identifies and categorizes explosives into different classes. It detects all classes of military, conventional and homemade explosives.
- **NanoSniffer** provides trace detection of **nano-gram quantities** of explosives and can accurately detect a wide range of military, commercial and homemade explosives threats.

### **AIM-PRIME**

- In a major push towards **deep technology and driving** the country to become a **digitally transformed** nation, **Atal Innovation Mission (AIM)**, **NITI Aayog** launched **AIM-PRIME (Program for Researchers on Innovations, Market-Readiness & Entrepreneurship)**.
- It is an initiative to promote and support **science-based deep-tech startups & ventures** across India. **Deep technology** is an outcome of very **intense research and development (R&D)** with high knowledge content.
- AIM has joined hands with **Bill & Melinda Gates Foundation (BMGF)** to launch this nationwide program which will be **implemented by Venture Center** - a non-profit technology business incubator.
- The **first cohort** of the program is **open to technology developers (early-stage deep tech startups, and scientists/ engineers/ clinicians)** with strong science-based deep tech business ideas. The program is also open to CEOs and Senior incubation managers of **AIM Funded Atal Incubation Centers** that are supporting **deep tech entrepreneurs**.
- The **benefits** of this program are aimed at addressing specific issues through **training and guidance** over a period of 12 months.
- Candidates selected for the program will get access to in-depth learning via a comprehensive lecture series, live team projects, exercises, and project-specific mentoring.

### **INS Sarvekshak**

- INS Sarvekshak, a **hydrographic survey ship**, is on a deployment to Mauritius for undertaking joint hydrographic surveys along with their Mauritian counterparts. The ship commenced the hydrographic survey of the '**Deep sea area off Port Louis**'.
- This will also include **training of Mauritian personnel** on advanced hydrographic equipment and practices.
- INS Sarvekshak is a specialised survey ship fitted with state-of-the-art survey equipment like **Deep Sea Multi-Beam Echo Sounder, Side Scan Sonars** and a fully automated digital surveying and

processing system. In addition, the ship carries an integral Chetak helicopter, which would be extensively deployed during the survey.

- Hydrography is the science that **measures and describes the physical features of the navigable portion of the Earth's surface** and adjoining coastal areas. Hydrographic surveyors study these bodies of water to see what the "floor" looks like.
- Hydrographic survey is the science of measurement and description of features **which affect maritime navigation, marine construction, dredging, offshore oil exploration/offshore oil drilling** and related activities.

### CHAFF Technology

- The **Defence Research and Development Organisation (DRDO)** has developed an **Advanced Chaff Technology** to safeguard naval ships against missile attack.
- Chaff is a passive **expendable electronic countermeasure technology** used worldwide to protect naval ships from enemy's radar and Radio Frequency (RF) missile seekers.
- The importance of this development lies in the fact that a **small quantity of chaff material**, when deployed in the air, **acts as a decoy and deflects the enemy's missiles**, thereby keeping India's ships safe.

### Quasars

- A group of international astronomers has **discovered 12 rare quasars**, each offering four distinct quadruple images, commonly called **Einstein's cross**. This discovery could help refine the existing understanding of our **universe's rate of expansion** and unravel mysteries surrounding **dark matter**.
- Scientists from the **Gaia Gravitational Lenses Working Group (GraL)** combined multiple telescope observations to confirm this discovery.
- The **first quadruple quasar** image was captured in **1985** and since then, only 50 such quasars have been identified. The latest finding has now increased the total confirmed Einstein's crosses by 25 %.
- There are **two ways of calculating the Hubble-Lemaître constant**, but both values do not match, thus creating discord. More discoveries of such quasar quadruples can help resolve this, thereby helping **accurately calculate** the rate at which our **universe is expanding**.



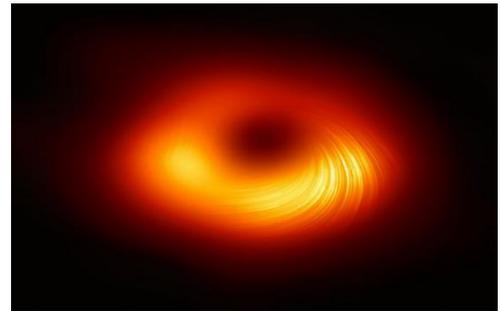
### **About Quasars**

- Quasars are **distant galaxies with extremely luminous nuclei**.
- They consist of **black holes, measuring many million times larger than our Sun**, surrounded by **thick gaseous matter**.
- Quasar observations are mainly used to study dark matter in determining the evolution of galaxies and to understand the rate of expansion of our universe, which is **measured using the Hubble-Lemaître constant**.

- The nearest known quasar to the Earth is about **600 million light-years away (Markarian 231)**.

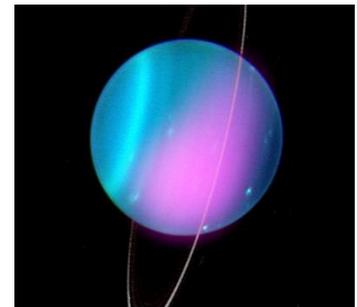
### First Image of a Black Hole's Magnetic Field

- There was a lot of excitement when the **Event Horizon Telescope (EHT)** collaboration showed the world the **first ever image of a black hole back in April 2019**.
- Weighing in at 6.5 million times the mass of our Sun, this **supermassive black hole** is located in the **galaxy Messier 87** (also known as **Virgo A** or **NGC 4486**, generally abbreviated to **M87**), some 55 million light years away from Earth.
- This was the **first direct evidence** that black holes exist. It also provided an extraordinary test of **Einstein's theory of gravity** and its underlying notions of space and time – probing gravity in its most extreme limits.
- The image showed a **bright ring** with a dark center, which is the black hole's shadow. In capturing this image, astronomers noticed a **significant amount of polarized** light around the black hole.
- **Polarized light waves** have a **different orientation and brightness** compared with unpolarized light. And, just like how light is polarized when it passes through some sunglasses, light is polarized when it's emitted in magnetized and hot areas of space.
- As polarization is a signature of **magnetic fields**, this image makes it clear that the **black hole's ring is magnetized**. This polarized view "tells us that the emission in the ring is most certainly produced by magnetic fields that are located very close to the event horizon.



### X-rays Detected From Uranus

- NASA astronomers have detected **X-rays from the seventh planet** of our solar system, **Uranus for the first time**.
- The results were obtained using **NASA's Chandra X-ray observatory**. However, the new study is not based on recent observations, **but from those taken in 2002 and 2017**.
- Emitting X-rays is not new in our solar system. **Venus, Saturn, even moons** of Jupiter emit X-rays and others. On **Earth and Jupiter**, X-rays are a result of electrons travelling down magnetic lines. Positively charged atoms and molecules raining down on polar regions of Jupiter is another reason.
- On Jupiter, **astronomers** have observed that the Sun is the source of X-rays. Astronomers note that it is similar to how the Sun's light is scattered on the moon.
- However, the X-rays detected from **Uranus** were not a **result of sunlight** scattering and pointed towards a possibility that there might be another source of X-rays present on the planet.
- Astronomers do not know from the source of these **X-rays** coming from Uranus but have come up with **two possible explanations**.



- The first one says that the **rings of Uranus** may be the reason behind this phenomenon as they may collide with charged particles like electrons and protons in the planet's nearby space environment. This could lead to rings glowing in X-rays.
- As per the second possible explanation, some of the X-rays may be coming from **auroras** on the planet. Auroras have previously been observed on Uranus at other wavelengths.

### **Baikal-GVD**

- **Russian** scientists have launched one of the **world's biggest underwater neutrino telescopes** called the **Baikal-GVD (Gigaton Volume Detector)** in the waters of **Lake Baikal**, the **world's deepest lake** situated in Siberia.
- The construction of this telescope, which **started in 2016**, is motivated by the mission to study in detail the elusive fundamental particles called **neutrinos** and to possibly determine their sources.
- **Neutrinos** are nearly **massless subatomic particles** with **no electrical charge**. Neutrinos are everywhere, but they **interact so weakly** with the forces around them that they're hugely challenging to detect.
- That's why scientists are looking **under Lake Baikal, which, at 5,577 feet (1,700 meters) deep**. Neutrino detectors are typically built underground to **shield them from cosmic rays** and other sources of interference. Clear freshwater and thick, protective ice cover make **Lake Baikal an ideal place to search for neutrinos**.
- Studying this will aid scientists' **understanding** of the **origins of the universe** since some neutrinos were formed during the Big Bang, others continue to be formed as a result of **supernova explosions** or because of nuclear reactions in the Sun.
- The **Baikal-GVD** is one of the **three largest neutrino detectors** in the world along with the **IceCube** at the **South Pole** and **ANTARES** in the **Mediterranean Sea**.

#### **Lake Baikal**

- Lake Baikal is a crescent shaped **rift lake located in southern Siberia, Russia**, between Irkutsk Oblast to the northwest and the Buryat Republic to the southeast.
- It is the **largest freshwater lake** by volume in the world, containing **22 to 23%** of the **world's fresh surface water**.
- With a maximum depth of 1,642 m (5,387 ft), Baikal is the **world's deepest lake**.
- The region to the east of Lake Baikal is referred to as **Transbaikalia** or as the Transbaikal, and the loosely defined region around the lake itself is sometimes known as Baikalia.
- UNESCO declared **Lake Baikal a World Heritage Site in 1996**.

### **Space Debris**

- **Indraprastha Institute of Information Technology (IIIT)**, Delhi, has received research funding from the **National Supercomputing Mission (NSM)** to develop a method to predict collision from **space debris**.

- Space debris poses a global **threat to the continued use of space-based technologies** that support critical functions like communication, transport, weather and climate monitoring, remote sensing.
  - The real amount of space debris is said to be between 500,000 and one million pieces as current sensor technology cannot detect smaller objects.
  - They all travel at speeds of up to 17,500 mph (28,162 kmph) fast enough for a relatively small piece of orbital debris to damage a satellite or a spacecraft.
- The outcome of this project will **directly support the Indian space sector**, valued at \$7 billion (Rs 51,334 crore) by providing an operationally flexible, scalable, transparent and indigenous collision probability solution. India has over 50 functional satellites in space. It's also planning to launch its own space station in the coming years.
- Predicting collision probability from these space objects is **crucial from the national security perspective** as well as for the **protection of public and private space assets** of Indian origin.
- To safeguard its space assets from space debris, Indian Space Research Organisation (**ISRO**) had set up a dedicated *Space Situational Awareness (SSA) Control Centre* named "**Netra**" in Bengaluru in December 2020.
  - Netra's key objective is to monitor, track and protect the national space assets and function as a hub of all SSA activities.
  - At present, **only the US, Russia and Europe have similar facilities** in place to track space objects and share collision warnings.
  - Once Netra is fully functional, India won't be dependent on the **North American Aerospace Defence Command (NORAD)** for tracking space objects.

### **Fusion Peptide**

- Using a new platform, scientists have developed a **Covid-19 vaccine** that could offer protection against not only **existing and future strains of the SARS-CoV-2** coronavirus, but also other coronaviruses.
- The vaccine, created by Zeichner and Virginia Tech's Dr Xiang-Jin Meng, targets a part of the virus's spike protein called the **fusion peptide**.
- It involves synthesising DNA that directs the production of a piece of the virus. This can **instruct the immune system on** how to mount an immune response against the virus.
- This compound is **essentially universal** among coronaviruses and has not been observed to differ at all in the many **genetic sequences of SARS-CoV-2** obtained from around the world.
- Other Covid-19 vaccines **do not appear** to be **specifically targeting** the fusion peptide and most vaccines in development target either the entire spike protein or just the **receptor-binding domain (RBD)**.
- While antibodies against the RBD can provide good neutralising activity, there can be mutations in the RBD that decrease somewhat the effectiveness of the antibodies.

### Liquid Oxygen

- Invoking the **Disaster Management Act**, the Centre ordered States that all liquid oxygen, including the existing stock with private plants shall be made available to the government and will be used for medical purposes only.
- **Liquid oxygen**, abbreviated **LOx, LOX or Lox** in the aerospace, submarine and gas industries, is the liquid form of molecular oxygen.
- **Liquid oxygen** has a **pale blue color** and is strongly **paramagnetic**: it can be suspended between the poles of a powerful horseshoe magnet.
- Liquid oxygen has a **density** of 1.141 g/cm<sup>3</sup>, slightly **denser than liquid water**, and is **cryogenic** with a freezing point of 54.36 K and a boiling point of 90.19 K at 101.325 kPa (760 mmHg).
- Liquid oxygen is also a very powerful oxidizing agent: organic materials will burn rapidly and energetically in liquid oxygen.
- It was used as the **oxidizer in the first liquid-fueled rocket invented in 1926 by Robert H. Goddard**, an application which has continued to the present.
- Because of its **cryogenic** nature, liquid oxygen can cause the materials it touches to become **extremely brittle**.
- Liquid oxygen is the most common **cryogenic liquid oxidizer propellant** for spacecraft rocket applications, usually in combination with liquid hydrogen, kerosene or methane.

### Oxygen Concentrators

- An **oxygen concentrator** is a **medical device** that concentrates oxygen from **ambient air**. Atmospheric air has about 78 per cent nitrogen and 21 per cent oxygen, with other gases making up the remaining 1 per cent.
- The oxygen **concentrator takes** in this air, **filters it** through a **sieve**, releases the nitrogen back into the air, and works on the remaining oxygen.
- This oxygen, **compressed and dispensed** through a **cannula**, is 90-95 per cent pure. A **pressure valve** in concentrators helps regulate supply, ranging from **1-10 litres per minute**.
- According to a **2015 report by the WHO**, concentrators are designed for continuous operation and can produce oxygen 24 hours a day, 7 days a week, for up to 5 years or more.
- While it is not as pure as **Liquid Medical Oxygen (LMO) (99%)**, experts say it is good enough for mild and moderate Covid-19 patients with oxygen saturation levels of 85% or above. It is, however, not advisable for ICU patients.

### **How Are Concentrators Different From Oxygen Cylinders And LMO?**

- **Oxygen concentrators** are the **easiest alternatives** to cylinders but can only supply 5-10 litres of oxygen per minute (critical patients may need 40-50 litres per minute) and are best suited for moderately ill patients.
- Concentrators are **portable** and unlike LMO that needs to be stored and transported in cryogenic tankers, need no special temperature. And unlike cylinders that require refilling, **concentrators only need a power source** to draw in ambient air.

### **African Swine Fever (ASF)**

- The **Mizoram government** has declared certain areas in four districts of the state as the "epicentre" of **African Swine Fever (ASF)**.
- Mizoram has 11 districts and shares **inter-state borders with Assam, Manipur and Tripura** and also **international boundary with Bangladesh and Myanmar**.
- African Swine Fever is a **severe viral disease** that affects **wild and domestic pigs** typically resulting in an acute haemorrhagic fever. It does **not affect humans** but can be catastrophic for pigs.
- The disease has a **case fatality rate (CFR) of almost 100%**. Its routes of transmission include **direct contact with an infected or wild pig (alive or dead)**, indirect contact through **ingestion of contaminated material** such as food waste, feed or garbage, or through biological vectors such as ticks.
- The disease is characterised by sudden deaths in pigs. Other manifestations of the disease include high fever, depression, anorexia, loss of appetite, haemorrhages in the skin, vomiting and diarrhoea among others.
- There is **no approved vaccine**, which is also a reason why animals are culled to prevent the spread of infection. While ASF is lethal, it is **less infectious than other animal diseases such as foot-and-mouth disease**.

### **Single Crystal Blade Technology**

- In a major technological breakthrough, the **Defence Research and Development Organisation (DRDO)** has developed **single crystal blade technology** and supplied 60 of such blades to the Hindustan Aeronautics Limited (HAL) as part of their **indigenous helicopter development** programme for helicopter engine application.
- It is part of a programme taken up by the **Defence Metallurgical Research Laboratory (DMRL)**, a laboratory of the DRDO, to develop five sets, 300 in number, of single crystal high pressure turbine (HPT) blades using a **nickel-based super alloy**.
- A single-crystal, or monocrystalline, solid is a material in which the **crystal lattice of the entire sample is continuous** and unbroken to the edges of the sample, with no grain boundaries.
- The absence of the defects associated with grain boundaries can give monocrystals unique properties, particularly mechanical, optical and electrical.
- These properties, in addition to **making some gems precious**, are industrially used in technological applications, **especially in optics and electronics**.

### **Ultra White Paint**

- Researchers from **Purdue University in the U.S.** have developed an '**ultra-white**' paint, which when painted onto buildings, can reflect the sunlight falling on them and lower the temperature indoors by 4.5 degrees Celsius than the surroundings.
- The paint has a high concentration of a chemical compound called **barium sulfate**, which makes it more white.

- The paint **can keep surfaces 19 degrees Fahrenheit cooler than their ambient surroundings at night** because the paint is so white. It can also cool surfaces 8 degrees Fahrenheit below their surroundings under strong sunlight during noon hours.
- This paint may be the closest equivalent to the blackest black paint called “**Vantablack**” that is able to absorb up to 99.9% of visible light.
- The researchers believe that the paint can alleviate global warming on two counts:
  - **Reducing carbon emissions** by reducing the need for air conditioning
  - Driving the sun’s incoming heat away to outer space – a principle called **radiative cooling**.

### **Iran Enriching Uranium to 60%**

- **Iran has started enriching its uranium supply to 60% purity** — the closest it has ever come to the level needed for a weapon — in response to the **sabotage of an Iranian nuclear site linked to Israel**.
- Uranium contains a **rare radioactive isotope, called U-235**, that can be used to power nuclear reactors at low enrichment levels and to fuel nuclear bombs at much higher levels.
- The **goal of uranium enrichment is to raise the percentage levels of U-235**, which is often done through the use of centrifuges — machines that spin **a form of unrefined uranium at high speeds**.
- Under the nuclear agreement, known as the **Joint Comprehensive Plan of Action**, Iran was allowed to **keep up to 300 kilograms of uranium enriched to 3.67%** for civilian nuclear power.
- Iran also agreed to stop enriching uranium beyond 5% and to idle hundreds of centrifuges.
- However, after U.S President Donald J. Trump **repudiated the Iran deal in 2018**, reimposed economic sanctions on Iran and added other penalties, Iran undertook a graduated series of steps away from compliance with the deal to retaliate —
  - increasing its 3.67% uranium supply
  - adding centrifuges
  - raising uranium purity in some of the supply to 20%
  - restricting international inspectors’ access to some nuclear sites.
- What makes the 60% enrichment level particularly threatening is that the **tricky process of enrichment becomes far easier and requires fewer centrifuges** as it moves into the higher purities.
- According to the **International Atomic Energy Agency (IAEA)**, the nuclear-monitoring arm of the United Nations, **Iran had amassed 2,967.8 kilograms of uranium** — roughly 14 times the limit under the nuclear accord and theoretically enough to power about three atomic bombs if refined to weapons grade. The stockpile includes 17.6 kilograms enriched to 20 percent — also forbidden under the accord until the year 2030.

#### **Joint Comprehensive Plan of Action (JCPOA)**

- The Iran nuclear agreement, formally known as the **Joint Comprehensive Plan of Action (JCPOA)**, is a landmark accord reached between **Iran** and the five permanent members of the **UN**

**Security Council (China, France, Russia, the United Kingdom, and the United States) and Germany**—collectively known as the P5+1.

- Under its terms, Iran agreed to limit its nuclear program in return for relief from crippling economic sanctions imposed by the.
- The deal, which came into force in **January 2016**, limited the number of centrifuges Iran could run and restricted them to an older, slower model.
- Iran also **reconfigured a heavy-water reactor so it couldn't produce plutonium**, and agreed to convert its enrichment site at Fordo into a research centre.
- It granted more access to inspectors from the IAEA, and allowed it to look at other sites.
- In exchange, the **UN, US and the EU lifted the economic sanctions** that had kept Iran away from international banking and the global oil trade.
- The deal allowed Iran to purchase commercial aircraft and reach other business deals. It also unfroze billions of dollars Iran held overseas.

### **Moon-Mars Occultation**

- Skygazers were able to watch a **rare celestial event** when the moon came between **Earth and Mars** on April 17th 2021.
- On that evening, people saw Mars, which is seen as a red dot in the night sky, next to the moon. The **phenomenon is known as occultation**.
- **Occultation** is a phenomenon when **one object passes** in front of another object which is much smaller, for example when the moon passes in front of a distant star.
- Occultations led to the discovery of **planet Uranus' rings** by Nasa's Kuiper Airborne Observatory when the planet occulted a star.
- If the closer body does **not entirely conceal** the farther one, the event is called a **transit**. Both transit and occultation may be referred to generally as occlusion; and if a **shadow** is cast onto the observer, it is called an **eclipse**.

### **NASA Mars Helicopter Ingenuity**

- Solar powered **Ingenuity**, attached to the underside of **NASA's Perseverance rover**, performed a successful takeoff and landing on Mars. It became the **first aircraft in history to make a powered, controlled flight on another planet**.
- The **first powered flight on Earth** was achieved by the Wright brothers in **1903** in Kitty Hawk, North Carolina.
- **Perseverance** landed at the **Jezero Crater of Mars** in February, 2021. It will remain on the Red Planet for about two years and look for finding past signs of life.
- The rover is designed **to study signs of ancient life, collect samples** that might be sent back to Earth during future missions and **test new technology that might benefit future robotic and human missions** to the planet.

- The **helicopter's mission** is experimental in nature and **to search for signs of extraterrestrial life**. It will help collect samples from the surface from locations where the rover cannot reach. It won't contribute to Perseverance's science mission.
- The success could **pave the way for new modes of exploration on Mars** and other destinations in the solar system, such as **Venus and Saturn's moon Titan**.
- The flight was challenging because **the air on Mars is so thin — less than 1% of the pressure of Earth's atmosphere**. That makes it much harder to achieve lift, even though it was partly aided by a gravitational pull that is a third of Earth's.

### Perseverance Produce Oxygen on Mars

- The **Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE)** aboard NASA's Perseverance rover was able to produce **oxygen from thin Martian atmosphere** for the first time.
- In its first operation since arriving on the Red Planet, MOXIE produced 5 grams of oxygen from carbon dioxide in the Martian atmosphere, enough for an astronaut to breathe for 10 minutes.
- MOXIE is designed to generate up to 10 grams of oxygen per hour, and is placed inside the Perseverance rover.
- **On Mars, carbon dioxide makes up ~96% of the gas** in the planet's atmosphere. **Oxygen is only 0.13%**, compared to 21% in Earth's atmosphere. MOXIE inhales carbon dioxide and exhales oxygen.
- To produce oxygen, **MOXIE separates oxygen atoms from carbon dioxide molecules**. It does so by **using heat at a temperature of around 800 degrees Celsius**, and in the process also produces carbon monoxide as a waste product, which it releases in the Martian atmosphere.
- **Significance of Producing Oxygen on Mars**
  - A substantial amount of oxygen supply on Mars is essential for crewed missions that plan to go there— not just **for astronauts to breathe** but **for rockets to use as fuel** while coming back to Earth.
  - As per NASA, for four astronauts to take off from Mars, a future mission would require around 7 metric tons of rocket fuel and 25 metric tons of oxygen— around the weight of an entire space shuttle. In contrast, **astronauts living and working on Mars would require far less oxygen to breathe, maybe around one metric ton**.
  - It will be an enormous challenge to haul the 25 metric tons of oxygen from Earth to Mars for the return journey, and it would become significantly easier if the liquified oxygen can be produced on Mars.

*To Read more about Mars Missions, Please refer to The Recitals - February 2021.*

### Crew-2 Mission

- **SpaceX** along with the **National Aeronautics and Space Administration (NASA)** launched four astronauts into the **International Space Station (ISS)** under the **Commercial Crew Program**.
- The mission is called **Crew-2** and is the second crew rotation of the SpaceX Crew Dragon and the first with international partners.

- The aim of this test flight was **to see if SpaceX capsules could be used on a regular basis to ferry astronauts to and from the ISS.**
- The central focus of this mission during this time will be to continue a series of **Tissue Chips** in Space studies.
  - Biomedical researchers have created small **systems of cells and tiny organoids** that grow on tissue chips and mimic the actions of those cells inside the human body.
  - Tissue chips **contain small groups of cells or tiny organoids** that help researchers mimic different kinds of diseases in order to test new treatments or better understand how specific bodily systems respond to spaceflight
  - According to NASA, these chips can potentially speed up the process of identifying safe and effective drugs and vaccines.
  - Scientists can use these tissue chips in space **to study diseases that affect specific human organs**, which would take months or years to develop on Earth.
- **Commercial Crew Program (CCP)**
  - It is a project in which NASA is working with business partners to build rockets and spacecraft.
  - The main objective of this program is **to make access to space easier in terms of its cost**, so that cargo and crew can be easily transported to and from the ISS, enabling greater scientific research. In this way, NASA can **focus on building spacecraft and rockets** meant for deep space exploration missions.
  - Through this program, NASA plans **to lower its costs by sharing them with commercial partners**, and also give the companies incentive to design and build the **Commercial Orbital Transportation Services (COTS).**
  - Boeing and SpaceX were selected by NASA in September 2014 to develop transportation systems meant to transfer crew from the US to the ISS.

### Tianhe Module

- China launched an **unmanned module of its permanent space station** that it plans to complete by the end of 2022. The module, named "**Tianhe**", was launched on the **Long March 5B**, China's largest carrier rocket.
- The new, **66-tonne, multi-module Tiangong station** is set to be operational for at least 10 years.
- **Tianhe is the core component of it.** It will provide power and propulsion and contains the life support technologies and living quarters required by visiting astronauts.
- Tianhe forms the main living quarters for three crew members in the Chinese space station.
- The Tianhe launch was the first of 11 missions needed to complete the space station, which will **orbit Earth at an altitude of 340 to 450 km (211-280 miles).**

### National Climate Vulnerability Assessment Report

**Department of Science and Technology** has released a report titled 'National Climate Vulnerability Assessment Report, which identifies the most vulnerable states and districts in India with respect to current climate risk and key drivers of vulnerability.

### Highlights Of The Report

- The report has identified **Bihar, Jharkhand, Orissa, West Bengal, Chhattisgarh, Assam, Mizoram, and Arunachal Pradesh as states highly vulnerable** to climate change. These states, mostly in the eastern part of the country, require prioritization of adaptation interventions.
- Vulnerability scores in all districts in India lies in a very small range. It shows that all districts & states are somewhat vulnerable with respect to current climate risk in India.
- Among all states, Assam, Bihar, and Jharkhand have over 60% districts in the category of highly vulnerable districts.
- Assessing vulnerability was the first step towards assessing climate risk. There are two other components like **Hazard and Exposure** that need to be also assessed to arrive at overall climate risk.

### Importance of Assessing Vulnerability

- The assessment will help policymakers in **initiating appropriate climate actions**. It will also **benefit climate-vulnerable communities** across India through development of better-designed climate change adaptation projects.
- The assessments will contribute to the development of **more targeted climate change projects** and that they will support the implementation and the potential revisions of the State Action Plans on Climate Change.
- While climate vulnerability assessments for various states and districts already exist, the states and districts cannot be compared to each other as the framework used for assessments are different, thereby limiting decision-making capabilities at the policy and administrative levels. This necessitated an **assessment using a Common Vulnerability Framework**.
- The assessments can further be used for India's reporting on the **Nationally Determined Contributions** under the Paris Agreement. And finally, these assessments will support India's National Action Plan on Climate Change.

### Draft Amendment To Forest Conservation Act 1980

The Union Ministry of Environment, Forest and Climate Change has proposed several amendments to the Forest (Conservation) Act, 1980 (FCA), which may enable infrastructure projects to come up in the forest areas more easily.

#### The Forest (Conservation) Act, 1980

- The FCA is the principal legislation that regulates deforestation in the country. It **prohibits the felling of forests for any "non-forestry" use** without prior clearance by the central government.
- The clearance process includes seeking consent from local forest rights-holders and from wildlife authorities. The Centre is empowered to reject such requests or allow it with legally binding conditions.
- In a landmark decision in 1996, the Supreme Court had expanded the coverage of FCA to all areas that satisfied the **dictionary definition of a forest**; earlier, only lands specifically notified as forests were protected by the enforcement of the FCA.

## Proposed Amendments

### 1. Concessions to Survey And Exploration

- A provision has been added to exempt application of FCA on forest land that is “used for underground exploration and production of oil and natural gas through Extended Reach Drilling (ERD) originating outside forest land.”
- Survey, reconnaissance, prospecting, exploration or investigation” for a future activity in the forest will not be classified as a “**non-forestry activity**”. This means such survey works would not require any prior permission from the government.

**2. Exemptions to Railways and Roads Inside Forests:** Land acquired by the railways for establishing a rail line or a road by a government agency before 25.10.1980 (the day the FCA was passed) would be exempted from seeking a forest clearance — if they put the land to the same use for which it was acquired.

### 3. Leases On Forest Land

- FCA requires the central government’s approval before *assigning forest lands on lease* to any private person / corporation / organisation not owned or controlled by the central government.
- This clause has been deleted in the proposed amendment. This may mean that state governments can issue leases for the use of forest land without the Centre’s prior approval.

**4. Exemptions to Plantations:** A new explanation to Section 2 proposes to exempt plantation of native species of palm and oil-bearing trees from the definition of “**non-forest purpose**”. This would effectively mean that anyone who wants to clear a natural forest to raise such plantations would not require any approval from the government.

**5. Exemptions to Wildlife Tourism, Training Infrastructure:** The FCA classifies activities related to wildlife conservation as “non-forestry” purposes, which means such activities — building checkpoints, communication infrastructure, fencing, boundary, etc — which include do not need a forest clearance. The proposed amendment claims to add to this list “forest and wildlife training infrastructure” and the “establishment of zoos and safaris” managed by the government or any authority under the Wildlife Protection Act.

**6. States may grant forest clearance for strategic / security projects:** The proposed Section 2A may empower the central government to provide for state government approval for projects on forest land for “strategic” or security projects of “national importance”.

**7. Creation of ‘No-Go’ areas:** The proposed amendment will allow the central government to delineate forest areas where conversion to specific non-forest uses would not be permitted for a fixed period of time. The delineation would be based on the basis of pre-defined criteria.

## Children's Vulnerability to Climate Change

Around **490 million children** under the age of 18 in 35 African countries are at the highest risk of suffering the impact of climate change, warned **Save the Children International**, a child rights non-profit organisation.

### **Key Findings**

- **Sub-Saharan Africa** has 35 of the 45 countries globally at highest climate risk. Chad, Somalia, Central African Republic, Eritrea and Democratic Republic of the Congo are the least capable of adapting to the impact of climate change.
- Of the 750 million children in 45 countries likely to be most affected by climate risk, **210 million** are in three South Asian nations — Pakistan, Bangladesh and Afghanistan.
- The analysis is based on the most recent **Notre Dame Global Adaptation Initiative (ND-GAIN) index**.
- ND-GAIN has **ranked the countries by their vulnerability to climate disruptions** and their readiness or capacity to adapt to climate change. The lower the capacity to adapt and cope, the higher the risk of impact on children.

### **Agriculture, Water And Health Risks**

- **Extreme weather events** — floods, droughts and hurricanes — will have impact on the vulnerable children and their families most.
- Children will be affected by food shortages, diseases and other health threats, water scarcity from rising water levels, or a combination of these factors.

For example, children in the Democratic Republic of Congo are suffering from **malaria and dengue attributed to climate change**. Increase in extreme weather events can exacerbate these new health risks while the public health system is already under a lot of pressure.

- Children of the poorest households will be the most-affected. In fact, there have been scientific evidences of the link between obesity, under-nutrition and climate change.

### **Leaders Summit on Climate**

- US President Joe Biden convened 40 world leaders in a virtual Leaders Summit on Climate in April 2021.
- The event **aims to accelerate actions to address the climate crisis**, including emissions reductions, finance, innovation and job creation, and resilience and adaptation.
- The **United States and other countries announced ambitious new climate targets** ensuring that nations accounting for half of the world's economy have now committed to the emission reductions needed globally to keep the goal of limiting global warming to 1.5-degrees C within reach.

### **India-US Clean Energy Agenda 2030**

- Prime Minister Narendra Modi and US President Joe Biden launched the India-US Clean Energy Agenda 2030 Partnership at the Leaders Summit on Climate.
- The Partnership will **aim to mobilize finance and speed clean energy deployment**; demonstrate and scale innovative clean technologies needed to decarbonize sectors including industry, transportation, power, and buildings; and build capacity to measure, manage, and adapt to the risks of climate-related impacts.
- The Partnership will proceed along **two main tracks**:

- Strategic Clean Energy Partnership
- Climate Action and Finance Mobilization Dialogue

### **Commitments under the Clean Energy Agenda partnership**

- Both the United States and India have set ambitious 2030 targets for climate action and clean energy.
- In its new nationally determined contribution, the United States has set an economy-wide target of **reducing its net greenhouse gas emissions by 50–52 %** below 2005 levels in 2030.
- As part of its climate mitigation efforts, India has set a target of installing **450 GW of renewable energy by 2030**.

### **Indo-German Project ‘Pyrasol’**

- The foundation stone of the **Integrated Solar Dryer and Pyrolysis pilot** was laid by Director, CSIR-Central Leather Research Institute (CLRI), Chennai.
- The pilot is part of the Indo-German project ‘Pyrasol’ launched to **transform urban organic waste into biochar and energy in smart cities**. It was awarded to CSIR-CLRI by the Indo-German Science & Technology Centre.
- The project will ultimately lead to **technology development for the joint processing of Fibrous Organic Waste (FOW) and Sewage Sludge (SS)** of Indian smart cities into hygienic and highly valuable biochar associated with energy recovery, carbon sequestration and environmental improvement.

### **About Indo-German Science & Technology Centre (IGSTC)**

- It was established by the **Department of Science & Technology (DST), Govt. of India & Federal Ministry of Education and Research (BMBF), Govt. of Germany** to facilitate Indo-German R&D networking with emphasis on industry participation, applied research and technology development.
- IGSTC through its flagship program ‘**2+2 Projects**’, catalyses innovation centric R&D projects by synergising the strength of research and academic institutions and public/private industries from India and Germany.

### **Earth Day**

- April 22 is Earth Day, an international event celebrated around the world to pledge support for environmental protection. The year 2021 marks the **51st anniversary** of the annual celebrations.
- **This year’s theme:** ‘Restore Our Earth’.

### **Importance of Earth Day**

- Earth Day was **first observed in 1970**, when 20 million took to the streets to protest against environmental degradation. The event was triggered by the **1969 Santa Barbara oil spill**, as well as other issues such as smog and polluted rivers.
- In 2009, the United Nations designated April 22 as ‘**International Mother Earth Day**’.
- The landmark **Paris Agreement**, which brings almost 200 countries together in setting a common target to reduce global greenhouse emissions, was signed on Earth Day 2016.

- Earth Day aims to “build the world’s largest environmental movement to drive transformative change for people and the planet.” This Day also recognizes a collective responsibility, as called for in the **1992 Rio Declaration**, to promote harmony with nature and the Earth to achieve a just balance among the economic, social and environmental needs of present and future generations of humanity.

### Exotic Animals

The Delhi High Court April 15, 2021 issued an order directing the Centre to take a decision on **framing rules to confer protection for exotic animals** that are currently not under the purview of the Wildlife (Protection) Act, 1972.

#### **Background**

- The court’s order came in response to a petition filed by animal rights group, People for the Ethical Treatment of Animals (PETA) India, about the status of a male **hippopotamus rescued from the Asiad Circus in Uttar Pradesh**.
- PETA India had filed its petition in 2018, requesting that the court order the seizure and rehabilitation of the hippo from the Asiad Circus, where he was forced to live a solitary life, confined to a small tank with concrete flooring and filthy water.
- Through its petition, the group also requested that the court direct the Union Ministry of Environment, Forest and Climate Change to **expand the Central Zoo Authority’s purview to include all exotic wild animals**, including hippos, birds, and others who aren’t currently protected under the Wildlife (Protection) Act, 1972.

#### **Government’s Voluntary Disclosure Scheme**

- The Ministry of Environment, Forest and Climate Change (MoEFCC) has come out with an advisory on a one-time voluntary disclosure scheme that **allows owners of exotic live species that have been acquired illegally, or without documents, to declare their stock to the government** between June and December 2020.
- With this scheme, the government aims to **address the challenge of zoonotic diseases**, develop an inventory of exotic live species for better compliance under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and regulate their import.

#### **About Hippopotamus**

- The hippopotamus, also known as the “**river horse**,” lives along the rivers and lakes throughout sub-Saharan Africa.
- Weighing up to 8,000 pounds, the **hippo is the heaviest land animal after the elephant**.
- **Population:** 115,000 to 130,000.
- **Habitat:** Wetlands, Rivers, and Swamps
- **Characteristics**

- Hippos seek refuge from the heat by living in water during the day, and at night they come ashore to feed on short, soft grasses and fallen fruit.



- The eyes and ears of a hippopotamus are on top of its head, so it can keep watch for enemies—mainly crocodiles—while lying low in the water.
- **Conservation Status**
  - IUCN Red List: **Vulnerable**.
  - CITES: Appendix III.

### Disk-footed Bat

- A team of scientists have discovered **India's first bat species with disk-shaped sticky feet in Meghalaya**. With this find, the number of bat species in India increases to 130, and in Meghalaya to 66.
- The disk-footed bat was recorded at Lailad area adjacent to **Nongkhylllem Wildlife Sanctuary in Meghalaya**.
- There are a couple of other bamboo-dwelling bats in India. But the extent of adaptation for bamboo habitat in this species is not seen in the others.
- The newly-recorded bat was presumed to be a bamboo-dwelling species, but its flattened skull and adhesive pads helped in identifying it as the disk-footed known from specific localities in **southern China, Vietnam, Thailand and Myanmar**.



### Great Indian Bustards

- The recent shooting of two Great Indian Bustards (GIBs) in **Pakistan's Cholistan desert** has left wildlife activists in Rajasthan shocked and outraged.
- Great Indian bustard is large bird of the bustard family, **one of the heaviest flying birds in the world**.
- **Population:** 200 individuals worldwide; The largest population of about 150 birds occurs in Thar Desert, Rajasthan.
- Great Indian bustards are omnivores, they prey on various arthropods, worms, small mammals, and small reptiles.
- **Habitat:** The species inhabits open habitats (short grasslands, open scrub and rain-fed agriculture) and breed in traditionally selected grasslands, where males display to attract females.
- **Conservation Status:** With 200 individuals left, almost exclusively in India, the species is listed as *Critically Endangered* on IUCN Red List, Appendix I of CITES, and Schedule I (Wildlife (Protection) Act 1972).
- **Threats:**
  - The biggest threat to this species is hunting, which is still prevalent in Pakistan. This is followed by occasional poaching outside Protected Areas, collisions with high tension electric wires, fast moving vehicles and free-ranging dogs in villages.



- Other threats include habitat loss and alteration as a result of widespread agricultural expansion and mechanized farming, infrastructural development such as irrigation, roads, electric poles, as well as mining and industrialization.

### **Indian Rhino Vision (IRV) 2020**

- The ambitious Indian Rhino Vision 2020 (IRV2020) came to a close with the release of two rhinos in **Assam's Manas National Park** transported from **Pobitora Wildlife Sanctuary** about 185 km to the east.
- IRV 2020 was launched by the **Assam Forest Department** in partnership with **WWF-India**, the **International Rhino Foundation** and **US Fish & Wildlife Service** in 2005.
- The programme **aims at increasing the number and range of rhinos in Assam through wild-to-wild translocations** from Kaziranga National Park and Pobitora Wildlife Sanctuary to potential Protected Areas including Manas National Park, Burachapori Wildlife Sanctuary, Laokhowa Wildlife Sanctuary, and Dibru-Saikhowa National Park.
- The **vision is to attain a population of 3000 wild rhinos in Assam**, distributed over seven of its Protected Areas by 2020.
- At the end of February 2020, two female rhinos were translocated to Manas National Park, the seventh successful translocation to occur under the IRV 2020 programme. Since 2009, the **Greater one-horned rhino population in the Park has more than doubled.**

### **About Greater one-horned Rhino**

- The greater one-horned rhino (or "Indian rhino") is the **largest of the rhino species.**
- **Population:** Around 3,700.
- **Habitats:** Tropical and Subtropical Grasslands, Savannas, and Shrublands.
- IUCN Conservation status: Down-listed from Endangered to **Vulnerable Category** of threats in 2008 due to overall improvement in its population growth and conservation measures.
- They are herbivores and they primarily graze with a diet consisting almost entirely of grasses as well as leaves, branches of shrubs and trees, fruit, and aquatic plants.
- **Threats:** Poaching for the illegal trade in rhino horn remains the biggest threat to the greater one-horned rhino. Although there is **no scientific proof of its medical value**, the **horn is used in traditional Asian medicines**, primarily for the treatment of a variety of ailments including epilepsy, fevers, and cancer. Extensive illegal trade persists throughout Asia despite protections and bans on **international trade of rhino horn.**



**National Mission on Sustaining Himalayan Ecosystem (NMSHE)**

- A team of scientists from Indian Council for Agricultural Research (ICAR) has been awarded for Excellence in Dissemination of agricultural practices and technologies from Lab to Farm by Agriculture Today, a National Agriculture Magazine.
- Their work has been recognised for **improving livelihood and subsistence production systems in remote areas like Leh** with support from the NMSHE Programme of the Department of Science and Technology (DST).

**About National Mission on Sustaining Himalayan Ecosystem (NMSHE)**

- NMSHE is one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**.
- It is aimed at **evolving management measures** for sustaining and safeguarding the Himalayan glaciers and mountain ecosystem.
- The NMSHE would attempt to address a variety of important issues, including **studying the Himalayan glaciers and associated hydrological consequences** and prediction and management of natural hazards.
- The mission includes enhanced **monitoring of the Himalayan ecosystem** through establishment of the monitoring network, promoting community-based management, human resource development and strengthening regional cooperation.
- NMSHE seeks to facilitate **formulation of appropriate policy measures and time-bound action programmes** to sustain ecological resilience in the Himalayas.
- Recognizing the importance of scientific and technological inputs required for sustaining the fragile Himalayan Ecosystem, the **Ministry of Science and Technology** has been given the nodal responsibility of coordinating this mission.

**Illegal Trade Of Sturgeon**

Illegal sale of sturgeon, one of the most endangered species in the world, is rampant in the **lower Danube** region, especially in Bulgaria, Romania, Serbia and Ukraine, according to a report released by the World Wildlife Fund (WWF).

**About Sturgeon**

- Sturgeon is the common name for the 27 species of fishes belonging to the family Acipenseridae.
- **Sturgeons have existed since the time of dinosaurs**, for about 200 million years. Some of the species can grow up to eight metre in length and live more than a century.
- They are called '**living fossils**' because their appearance has altered very little over the years. Fossils of sturgeons first appear in rocks dating to the **Middle Jurassic**.
- Because the sturgeons live for so many years, mature late and spawn with long intervals, they **take long to recover from environmental and human pressures**, according to WWF. This makes them **great indicators for the health of the river** and other ecological parameters.



- Most species live in the ocean and ascend rivers (possibly once in several years) to spawn in spring or summer; a few others are confined to fresh water.
- The fish species are **poached for their meat and caviar**, which is considered a delicacy. The report is the first market survey that quantifies the scale of the illegal trade.
- The report made the following **recommendations**:
  - Enhanced controls of domestic trade;
  - Control of CITES caviar labelling requirements;
  - Improved inter-agency cooperation and coordination;
  - Increased border controls;

### **Miscellaneous**

- With a focus on increasing engagement, India and Russia have announced the **establishment of a new 2+2 dialogue** at the foreign and defence minister level between the two countries. So far, India has this mechanism with only **three QUAD countries** - US, Japan, and Australia. Russia will be the **first non-Quad member country** with which New Delhi will now have this mechanism.
- The cabinet cleared signing of a **deal between India and the UK** to help each other in **matters related to customs**. The deal facilitates **information sharing** for prevention of customs-related offences and in investigations. The agreement is also expected to support trade and ensure efficient clearance of goods traded between the countries.
- Recently, WHO has identified a **new group of 25 countries** that have the potential to eradicate malaria by 2025. This initiative has been called **E-2025 initiative**. These 25 countries will receive technical and on-the-ground support by WHO and its partners. In return, these countries will have to work by responding to the dual threat of malaria and the novel coronavirus disease (COVID-19)
- To provide better **educational opportunities for Ladakhi students**, the **Indian Army** has initiated the project Ladakh Ignited Minds. In this regard, the Indian Army has signed an MoU with HPCL (Hindustan Petroleum Corporation Limited) and a Kanpur based NGO called the National Integrity and Educational Development Organisation.
- Delhi government inaugurated Delhi Technological University's '**Lab on Wheels**' programme. The programme will have students of the university travelling in a bus across Delhi to teach government school students and underprivileged children. The idea is to **impart education in the fields of Mathematics and Science** to those students in order to pique their interests in these subjects while pursuing higher education.
- Scientists from the **US National Institutes of Health (NIH)** have found an experimental **antiviral oral drug, MK-4482**, effective against SARS-CoV-2 infection (Covid-19). The data suggest that MK-4482 treatment potentially **could mitigate high-risk exposures to SARS-CoV-2**, and might be used to treat established SARS-CoV-2 infection **alone or possibly in combination with other agents**.
- '**Nimbus**' **Cloud Project: Israel's government** chose **Amazon Web Services (AWS)** and **Google** for a more than \$1-billion project to provide cloud services for the **country's public sector and military**. They will establish **local cloud sites** in Israel with and these sites will keep information within Israel's borders under strict security guidelines.