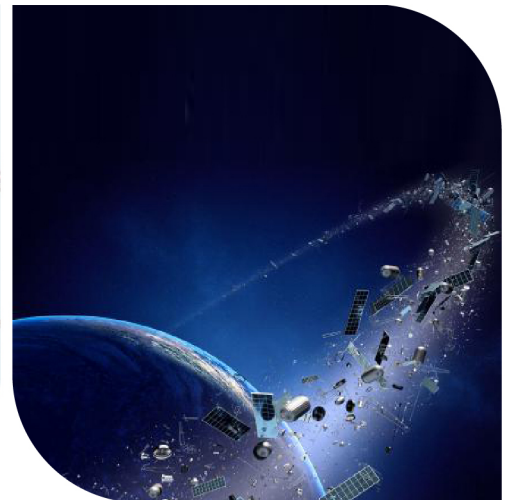


# CURRENT AFFAIRS MAGAZINE

## JULY 2022

- Reading UN Population Report
- India-South Korea Relations
- Need for Outer Space Sustainability
- The poor state of India's fiscal federalism



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# Educrat IAS Mains DNA from The Hindu & The Indian Express

## GS I

### 1) On reproductive rights, India's MTP and Surrogacy Acts don't go far enough:

(GS1: Women Empowerment)

Is India really ahead of the West in terms of reproductive rights? Contrary to the grandstanding since the overturning of the landmark Roe V. Wade judgment, the truth is, no.

#### **WHAT ARE THE CHALLENGES ASSOCIATED WITH MTP ACT?**

The Medical Termination of Pregnancy (Amendment) Act 2021 has the following issues:

- It has been criticised for not taking a rights-based approach. It doesn't give the pregnant person complete autonomy in ending the pregnancy. For example, a pregnancy can be terminated on certain conditions which include:- (a) Grave danger to the physical/mental health of the pregnant woman; (b) foetal abnormalities; (c) rape/coercion; and (d) contraceptive failure.
- A woman's right to choose to end the pregnancy even in the first few weeks is still not recognised in India.
- Additionally, it uses the word "woman", thereby leaving out pregnant transgender and non-binary persons who are biologically capable of bearing children. It forces them to identify themselves in the gender-binary ignoring their gender identity.
- the final decision regarding termination of pregnancy is not decided by the pregnant person, but it is decided by one/two registered medical practitioners (RMP) or a medical board depending on the gestational period.
- Further, abortion facilities are not provided in all public health centres, especially in rural India. And, abortion facilities in private medical centres are expensive.

#### **SURROGACY (REGULATION) ACT 2021**

- The act has been alleged to be disregarding privacy. It requires the intending couple to declare their infertility and reveals the identity of the surrogate, both of which violate the right to privacy and the landmark Puttaswamy judgment.
- It strips the reproductive autonomy of LGBTQ+ persons and single, divorced, and widowed intending parents. Only a heterosexual married couple (with certain preconditions) can be the intending parents. Therefore, It can also be seen as a violation to the fundamental right to equality.
- It allows only altruistic surrogacy, denying women compensation for their reproductive labour. It is also seen as a direct manifestation of the patriarchal mindset.

#### **WAY FORWARD:**

- Abortions in India are a complex topic. The skewed sex ratio is proof that unsafe abortions and female foeticide are rampant. There are still gaps that need fixing in both the MTP Act 2021 and the Surrogacy Act.
- We should strive for inclusivity, complete bodily autonomy, and reproductive equity. Measuring ourselves on a yardstick of regression shouldn't become our way of governance.

### 2) Wake-up Call

(GS Paper 1: Salient features of world's physical geography- Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc.)

Recently, more than 40 people have died in the landslide, which hit a railway construction site in Manipur.

#### **CAUSE OF THE LANDSLIDE:**

- The tragic disaster has been compounded by the debris of the landslide blocking the Ijui river, creating a significant welling up of water which could inundate low-lying areas if the “dam”-like structure is breached.
- While the administration has sought to ease the water outflow from the stored water, inclement weather has hampered the pace of the efforts.
- Landslides occur when masses of rock, earth, or debris move down a slope. Debris flows, also known as mudslides, are a common type of fast-moving landslide that tends to flow in channels

#### **WAY FORWARD:**

- As a post-facto exercise, the State government must look at whether sufficient soil and stability tests were done before choosing the site for railway construction work in the Tupul area.
- Researchers have corroborated the fact that the areas in western Manipur abutting the national highways fall under very high, high or moderate hazard zones.
- The severe landslide occurred in the Tupul area despite the government identifying susceptible areas in the State through the National Landslide Susceptibility Mapping project.
- The uncertain nature of rains, with the monsoon being more intense this year compared to predictions, has added to the problem.
- An early warning system for landslides is still being developed and refined by the Geological Survey of India and this could help reduce the scale of such disasters, once deployed across vulnerable States.

### **3) What are Cloudbursts?**

*(GS Paper 1: Geophysical Phenomena)*

Cloudbursts are short-duration, intense rainfall events over a small area. According to the IMD, it is a weather phenomenon with unexpected precipitation exceeding 100mm/h over a geographical region of approximately 20-30 square km.

#### **WHAT CAUSES CLOUDBURST?**

- A study published last year studied the meteorological factors behind the cloudburst over the Kedarnath region.
- The results showed that during the cloudburst, the relative humidity and cloud cover was at the maximum level with low temperature and slow winds.
- It is expected that because of this situation a high amount of clouds may get condensed at a very rapid rate and result in a cloudburst.

#### **IMPACT OF CLIMATE CHANGE**

- Several studies have shown that climate change will increase the frequency and intensity of cloudbursts in many cities across the globe.
- As temperatures increase the atmosphere can hold more and more moisture and this moisture comes down as a short very intense rainfall for a short duration.
- This results in flash floods in the mountainous areas and urban floods in the cities.
- Also, there is evidence suggesting that globally short-duration rainfall extremes are going to become more intense and frequent.

#### **SOLUTION:**

- There is no satisfactory technique for anticipating the occurrence of cloud bursts because they develop over a small period of time.
- A very fine net work of radars is required to be able to detect the likelihood of a cloud burst and this would be expensive.



#### 4) Reading UN Population Report

(GS1: Population and associated issues)

According to the 2022 edition of the United Nations 'UN World Population Prospects Report (WPP), India is projecting to surpass China as the world's most populous country in 2023.

##### **WHAT IS THE WPP?**

- The Population Division of the UN has been publishing the WPP in a biennial cycle since 1951.
- Each revision of the WPP provides a historical time series of population indicators starting in 1950.
- It takes into account newly released national data to revise estimates of past trends in fertility, mortality or international migration.

##### **MAIN TAKEAWAYS FOR THE GLOBAL POPULATION:**

- The world's population continues to grow, but the pace of growth is slowing down in UN POPULATION REPORT:
  - The global population is expected to grow to around 8.5 billion in 2030
  - In 2020, the global growth rate fell under 1% per year for the first time since 1950
- Rates of population growth vary significantly across countries and regions:
  - More than half of the projected increase in global population up to 2050 will be concentrated in just eight countries: the Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines and the United Republic of Tanzania.
  - The 46 least developed countries (LDCs) are among the world's fastest growing.
- The population of older persons is increasing both in numbers and as a share of the total:  
The share of the global population aged 65 years or above is projected to rise from 10% in 2022 to 16% in 2050.
- The report warns that countries with ageing populations should take steps to adapt public programs to the growing proportion of older persons, including by improving the sustainability of social security and pension systems and by establishing universal health care and long-term care systems.
- A sustained drop in fertility has led to an increased concentration of the population at working ages (between 25 and 64 years), creating an opportunity for accelerated economic growth per capita:

##### **RECOMMENDATION:**

- To maximize the potential benefits of a favourable age distribution, countries need to invest in the further development of their human capital by ensuring access to healthcare and quality education at all ages and by promoting opportunities for productive employment and decent work
- Over the next few decades, migration will be the sole driver of population growth in high-income countries.

#### 5) Cities that care:

(GS1: Urbanisation)

In India, urban poverty stands at over 25%. This is about 81 million people living below the poverty line. Though the number of rural poor outnumber the urban poor, India is set to witness 50% urbanization in a decade.

##### **HOW HAS THE PANDEMIC AFFECTED THE SITUATION?**

- During the initial waves of the pandemic, a large number of migrants returned to their home villages. The lockdowns, disruption in transportation and the general uncertainty triggered a crisis.
- While the rural poor's situation was partly cushioned by the public distribution system, the minimal access of the urban poor to ration card meant that they were left vulnerable.
- The urban poor faced a decline in incomes and this translated into lesser money available to purchase food items. Many resorted to borrowing to fund basic consumption.

- While the rural poor had the MGNREGS, the urban poor faced an insecure employment environment.

#### **SOLUTION:**

- Elected leadership could be instated in the local bodies- at the level of slum cluster/ basti.  
According to the Constitution's Article 243 S (5), a state's legislature can make provisions for constituting committees in addition to the ward committees.
- Access to Public Services: About 50% of the urban population don't have access to foodgrains under NFSA. However, with the portability of ration cards being enabled, access to food grains has improved.  
Now, identity markers must be established based on NFSA list to prevent leakage of benefits to non-entitled individuals. A community connect process can be used for participatory identification of the poor.
- Community Connect Campaigns: After identifying the deprived households, efforts must be taken to ensure access to social welfare schemes. This can be done using special community connect campaigns.
- Women's Collectives: Already some 70 lakh women in 7 lakh SHGs are covered under the NULM (National Urban Livelihood Mission).  
Efforts must be taken to ensure complete coverage of deprived households by SHGs
- Migration Support Centers can be established: Expanding rental housing can help provide sufficient housing facilities for the growing population.  
Providing eligible settlers with property titles will improve access to credit.
- Opportunities for skilling, up-skilling and re-skilling must be made readily available for the poor. This should be done in a way that it combines their work with up-skilling. Apprenticeships could help.
- Addressing Hierarchies: Ambedkar had hoped that urbanization would eliminate caste hierarchies. However, this hasn't happened. Instead, larger cities are emerging as the most segregated. Urban master plans must take the welfare and housing needs of the working class into account.

#### **6) Revamping School Health Services:**

(Mains GS Paper I & II: Social empowerment, development and management of social sectors/services related to Health and education, NEP)

Children across India are back to school for in-person classes after prolonged closure in the wake of the COVID-19 pandemic.

So, it is time for concrete policy measures and actions that target school children.

#### **SCHOOL HEALTH SERVICE:**

- School health services are services provided by a health worker to students enrolled in primary or secondary education, either within school premises or in a health service situated outside the school.
- It is needed for largely preventable health problems, including unintentional injury, interpersonal violence, sexual and reproductive health issues, communicable and noncommunicable diseases and mental health issues

#### **CONCERNS:**

- One of the reasons school health services receive inadequate policy attention is because health-care needs are equated with medical care needs.
- Though school-age children have a relatively low sickness rate (and thus limited medical care needs), they do have a wide range and age-specific health needs.
- These health needs are linked to unhealthy dietary habits, irregular sleep, lack of physical activity, mental, dental and eye problems, sexual behaviour, and the use of tobacco and other substances, addiction, etc.

#### **FRESH APPROACH:**

- The UNESCO, UNICEF, the World Health Organization (WHO) and the World Bank have published an inter-agency framework called FRESH - Focusing Resources on Effective School Health.
- The FRESH framework and tools propose four core areas and three supporting strategies.
- The core areas suggest that school health services must focus on school health policies - water, sanitation and environment; skills-based health education, school-based health and nutrition services.
- The supporting strategies include effective partnerships between the education and health sectors, community partnership and student participation.

#### EVOLUTION IN INDIA:

- The first documented record of school health services in India goes back to 1909 when the then presidency of Baroda began the medical examination of schoolchildren.
- The Sir Joseph Bhore committee, in 1946, observed that school health services in India were underdeveloped and practically non-existent.
- In 1953, the secondary education committee of the Government of India recommended comprehensive policy interventions dealing with school health and school feeding programmes.

#### WAY FORWARD:

- Every Indian State should make a road map to revamp and strengthen school health services, with timeline and dedicated budgetary allocation.
- The 15th Finance Commission grant for the health sector could be used for budgetary allocation.
- Health talks and lifestyle should be a part of teaching
- Teaching of adolescent sexual health, subjects such as menstrual hygiene should be integrated into regular classroom teaching.
- School health clinics should be supplemented with online consultation for physical and mental health needs.
- The role and the participation of parents should be increased.
- Comprehensive policy should be designed to take care of schoolchildren in private or government-run schools.
- Increase human resources and monitor performance of Ayushman Bharat programme, a school health initiative
- As per WHO, School health services: Should be designed based on local need assessment, Should have components of health promotion, health education, screening.



## 7) The sweltering heat wave across Europe:

(GS1: Climatology)

Large swathes of Europe, the U.K. and the U.S. are sweltering under extreme heat wave conditions.

#### WHAT IS BEHIND THE EXTREME HEAT WAVES?

- The heat waves are a result of climate change caused by human activity.
- Global temperatures have already risen by more than 1°C, and studies in the U.K. had shown that a one degree rise in temperature raises the probability of the country witnessing 40°C by ten times
- These changes turned Western Europe into what has been described as a “heat dome” a low pressure area that began to attract hot air from northern Africa.
- In the case of the U.S., the record temperatures are being linked to changes in the jet stream — a narrow band of westerly air currents that circulate several kilometers above the earth’s surface.

- While a conventionally strong jet stream would bring cooler air from the northern Atlantic, in recent years the jet stream has weakened and split into two, leading to intense and more frequent heat waves over parts of the American continent

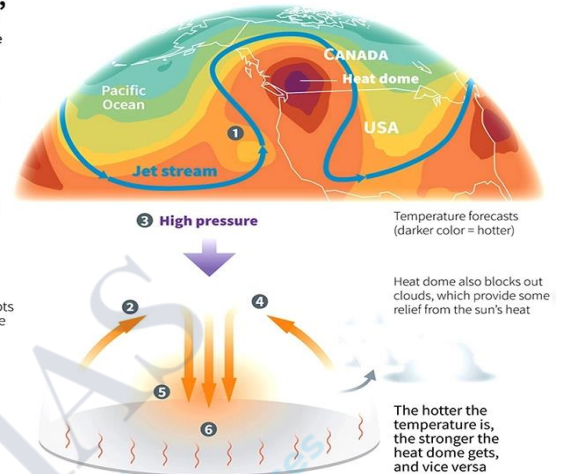
#### HEAT DOME:

- A heat dome occurs when the atmosphere traps hot ocean air like a lid or cap.
- Heat dome happens when strong, high-pressure atmospheric conditions combine with influences from La Niña, creating vast areas of sweltering heat that gets trapped under the high-pressure “dome.”
- Imagine a swimming pool when the heater is turned on — temperatures rise quickly in the areas surrounding the heater jets, while the rest of the pool takes longer to warm up
- If one thinks of the Pacific as a very large pool, the western Pacific’s temperatures have risen over the past few decades as compared to the eastern Pacific, creating a strong temperature gradient, or pressure differences that drive wind, across the entire ocean in winter.
- In a process known as convection, the gradient causes more warm air, heated by the ocean surface, to rise over the western Pacific, and decreases convection over the central and eastern Pacific.
- As prevailing winds move the hot air east, the northern shifts of the jet stream trap the air and move it toward land, where it sinks, resulting in heat waves.

#### The ‘heat dome’

Occurs when the atmosphere traps hot ocean air like a lid or cap

- 1 In summer, the **jet stream** (which moves the air) shifts northward
- 2 Hot and stagnant air expands upwards
- 3 Strong and **high-pressure** atmospheric conditions combine with influences from La Niña act like a dome or cap
- 4 In a process known as **convection**, hot air attempts to escape but high pressure pushes it back down
- 5 Under the dome, the air sinks and **compresses**, releasing more heat
- 6 As winds move the hot air east, the jet stream traps the air where it sinks, resulting in **heat waves**





## GS II

### 8) Technology is no panacea for Custodial Deaths

(GS2: Governance)

The recent spate of custodial deaths in Tamil Nadu has yet again highlighted the methods used by the police during interrogation. India has a grim record in police brutality and custodial violence. Between 2001 and 2018, 1,727 persons died in police custody, but only 26 policemen were convicted for such deaths.

#### **TECHNOLOGICAL SOLUTIONS TO HANDLE THEM:**

- Several technological solutions are available to help prevent custodial deaths. These include body cameras and automated external defibrillators.
- Deception detection tests (DDTs), which deploy technologies such as polygraph, narco-analysis and brain mapping, could be valuable in learning information that is known only to a criminal regarding a crime.
- Among the DDTs, the Brain Fingerprinting System (BFS) is an innovative technology that several police forces contemplate adding to their investigative tools.
  - BFS has proved helpful for solving crimes, identifying perpetrators, and exonerating innocent suspects.
  - However, the Supreme court observed that the state could not perform narco analysis, polygraph, and brain-mapping tests on any individual without their consent.
  - With informed consent, however, any information or material discovered during the BFS tests can be part of the evidence.
- Police departments are increasingly using robots for surveillance and bomb detection. Robots equipped with AI and sensor technology can build a rapport with the suspects, utilise persuasive techniques like flattery, shame and coercion, and strategically use body language.
- AI can detect human emotions and predict behaviour.
- Machine Learning (ML) can in real-time alert superiors when police are meting out inhumane treatment to suspects.

#### **ISSUES:**

- AI or robot interrogations can be subject to the risk of bias, misuse for surveillance, and targeting of individuals and communities.
- Although technological solutions might provide comfort and transparency, they can never address the underlying issues that lead to custodial deaths.

#### **WAY FORWARD:**

- There is a need for the formulation of a multi-pronged strategy by the decision-makers encompassing legal enactments, technology, accountability, training and community relations.
- The Law Commission of India's proposition in 2003 to change the Evidence Act to place the onus of proof on the police for not having tortured suspects is important in this regard.
- Besides, stringent action must be taken against personnel who breach the commandments issued by the apex court in D.K. Basu v. State of West Bengal (1997).
- The draft bill on the Prevention of Torture, 2017, which has not seen the day, needs to be revived.
- Technology may make policing more convenient, but it can never be an alternative for compassionate policing established on trust between the police and the citizens.

**Custodial Death:** It is widely referred to as death that happens to a person who is under trial or has already been convicted of a crime.

It can be due to natural causes like illness or may also happen due to suicide, infighting among prisoners but in many instances, it is police brutality and torture that is the reason behind the death.

## 9) Strains on India-Russia Defence Cooperation:

*(GS2: Bilateral, Regional and Global Groupings and agreements involving India)*

As the war in Ukraine stretches over four months with no end in sight, it has given rise to apprehensions on Russia's ability to adhere to timely deliveries of spares and hardware to India.

### **HISTORY OF THE BILATERAL DEFENCE TIES:**

- Russia has provided some of the most sensitive and important weapons platforms that India has required from time to time including nuclear submarines, aircraft carriers, tanks, guns, fighter jets, and missiles.
- According to one estimate, the share of Russian-origin weapons and platforms across Indian armed forces is as high as 85%.
- For Russia, India is the largest importer, and for India, Russia is the largest exporter when it comes to arms transfer.
- Russia's share in Indian arms imports was down to about 50% between 2016 and 2020, but it still remained the largest single importer.

### **IMPACT OF THE WAR**

- While some timeline lapses and shipping delays were possible, there would not be any dent on the Army's operational preparedness along the borders.
- In addition, the armed forces have also made significant emergency procurements since the standoff in Eastern Ladakh and have stocked up on spares and ammunition.
- However, Russia has assured India that it would adhere to delivery timelines.

### **WHAT IS THE STATUS OF DEALS UNDERWAY/NEW DEALS PENDING WITH RUSSIA?**

- The defence trade between India and Russia has crossed \$15 billion since 2018, in the backdrop of some big deals including the \$5.43 billion S-400 long range air defence systems.
- Other major contracts currently under implementation are construction of four additional stealth frigates in Russia and India,
- While India continues to remain Russia's largest arms buyer with a major chunk of legacy hardware from Russia and the Soviet Union, the volume of imports has reduced in the last decade.
- With Russia being shut out of the global SWIFT system for money transfers, India and Russia have agreed to conduct payments through the Rupee-Rouble arrangement.

## 10) India-Australia Critical Minerals Investment Partnership

*(GS2: Bilateral Relations)*

Recently, India and Australia decided to strengthen their partnership in the field of projects and supply chains for critical minerals.

- Australia confirmed that it would commit USD 5.8 million to the three-year India-Australia Critical Minerals Investment Partnership.

### **CRITICAL MINERALS:**

- They are elements that are the building blocks of essential modern-day technologies and are at risk of supply chain disruptions.
- These minerals are now used everywhere from making mobile phones, and computers to batteries, electric vehicles (EV) and green technologies like solar panels and wind turbines.
- As countries around the world scale up their transition toward clean energy and a digital economy, these critical resources are key to the ecosystem that fuels this change.
- These supply risks exist due to rare availability, growing demand and complex processing value chain.

### **WHAT IS THE SIGNIFICANCE OF INDIA AUSTRALIA PARTNERSHIP?**

- Reduction in Emissions & Essential Demand: Australia has the resources to help India fulfil its ambitions to lower emissions and meet the growing demand for critical minerals to help India's space and defence industries, and the manufacture of solar panels, batteries and electric vehicles.
- Expanding Global Trade: India's strong interest and support for a bilateral partnership will help advance critical minerals projects in Australia while diversifying global supply chains.
- The Path to Achieve Clean Energy: India is among the fastest-growing economies in the world and there is huge scope for collaboration in the mineral sector. Technology transfer, knowledge-sharing and investment in critical minerals like lithium and cobalt are strategic to achieving clean energy ambitions.

### **CHINA AS A THREAT:**

- Largest Producer: As per the 2019 US Geological Survey (USGS) Mineral Commodity Summaries report, China is the world's largest producer of 16 critical minerals.
- The level of concentration is even higher for processing operations, where China has a strong presence across the board. China's share of refining is around 35% for nickel, 50-70% for lithium and cobalt, and nearly 90% for rare earth elements.

### **11) What ails the current approach to Ayurveda?**

*(GS 2 – Issues relating to development and management of Social Sector/Services relating to Health.)*

Ayurveda has been in practice for close to three millennia. Even today, India's traditional medicine serves the healthcare needs of millions of Indians. But the Ayurveda faces a few challenges that need to be addressed.

- Ayurveda is an alternative medicine system with historical roots in the Indian subcontinent. The theory and practice of Ayurveda is pseudoscientific. Ayurveda is heavily practiced in India and Nepal, where around 80% of the population report using it.

### **WHAT ARE THE CHALLENGES ASSOCIATED WITH AYURVEDA?**

- Has few obsolete treatises: Ayurveda's ancient treatises contain useful portions alongside obsolete ones. Hence, valuable health promotion and illness management observations need to be carefully filtered from outdated theories and socio-religious superstitions.
- Philosophical superiority: The belief in the philosophical superiority of Ayurveda has destroyed ancient medical writings from being revisable scientific treatises. This is highlighted by Usman Committee (1923) and the Chopra Committee (1948).
- Misinterpretations in practices: There is a flawed approach of making ancient concepts sound relevant by superimposing current scientific findings upon them. This will lead to dangerously wrong clinical choices.

### **WAY FORWARD:**

- Revise Ayurvedic treatises: A century ago, P.S. Varier of the Arya Vaidya Sala Kottakkal noted that the "Sareerasthana (section on body structure and function in the Ayurvedic classics) must firstly be revised and made clearer and the remaining parts must be suited to it.
- After this, the other important works should also be corrected. Further, necessary additions must be made either by translations or by collaboration with experts in portions still deficient.
- As a medical system, Ayurveda is valuable immensely for its observations. Ministry of AYUSH must take cognisance actions to revive Ayurveda.

### **12) India-Japan ties under Shinzo Abe**

*(GS2: Bilateral Relations)*

### JAPAN-INDIA TIES ARE 70 YEARS OLD THIS YEAR.

- For the first five post-war decades of the 20th century, bilateral ties were friendly.
- India was not among the signatories of the 1951 San Francisco Peace Treaty, which brokered post-war relations between the defeated Axis power and the Allies.
- Instead, Delhi established an independent peace treaty and bilateral relations with Japan.

### TRANSFORMATION IN INDIA-JAPAN TIES:

Defence: While the security agreement was in place since 2008, under Abe the two sides decided to have Foreign and Defence Ministers' Meeting (2+2).

A pact for transfer of defence equipment and technology was also signed in 2015, an uncommon agreement for post-War Japan.

Bilateral relations: In September 2014, Modi and Abe agreed to upgrade the bilateral relationship to "Special Strategic and Global Partnership".

The relationship grew and encompassed issues from civilian nuclear energy to maritime security, bullet trains to quality infrastructure, Act East policy to Indo-Pacific strategy

Indo pacific: In August 2007, when Abe visited India for the first time as PM, he delivered the now-famous "Confluence of the Two Seas" speech — laying the foundation for his concept of Indo-Pacific.

Bilateral visits: During his first stint in 2006-07, Abe visited India and addressed Parliament. No other Prime Minister of Japan has made so many visits to India.

Stand against China: During the Doklam crisis and the current stand-off, Japan has made statements against China for changing the status quo.

Development: During Abe's visit in 2015, India decided to introduce the Shinkansen System (bullet train). Under Abe's leadership, India and Japan also formed the Act East Forum and are engaged in projects in the Northeast, closely watched by China.

Abe had spelt out his vision of the Confluence of the Two Seas in his 2007 speech when the Quad was formed.

### 13) West Asian QUAD:

(GS2: Groupings & Agreements Involving India and/or Affecting India's Interests)

- I2U2 is the new grouping formed by four nations- India, Israel, UAE, and the US. It was given the name International Forum for Economic Cooperation.
- **Background of I2U2 Grouping:**
- Abraham Accords: In 2020, Israel, UAE and Bahrain signed Abraham Accords that led to normalising of relations between Israel and a number of Arab Gulf countries
- I2U2 was initially formed in October, 2021 following the Abraham Accords, to deal with issues concerning maritime security, infrastructure and transport.



## AREAS OF COOPERATION:

India already has a robust bilateral security cooperation with Israel, the US and the UAE. This will further strengthen defence ties.

•:

I2U2 will boost India's project along with UAE and Saudi Arabia to build a connectivity corridor that runs from India to the Arabian Gulf across the Arabian Peninsula to Israel, Jordan and from there to the European Union.

I2U2 can revitalise and re-energise the system of trade and commerce among the four countries. After the US, UAE is the second-largest export destination of India.

Joint efforts by these four countries become crucial to tackle and reduce the consequences of food security and safety.

Each of these countries is a technological hub. Biotechnology is prominent in each of these countries as well. Israel is called a Startup Nation already. India has been also developing a widening startup ecosystem of its own.

## BENEFITS

- Until now, India's West Asian policies have largely insisted on keeping its bilateral relationships separate from each other. This is the first step to bring those relationships with UAE and Israel together and merge them.
- India is a massive consumer market. It's a frontline producer of high-tech and highly sought-after goods as well that will attract investors from West Asia.
- I2U2 will boost India's geopolitical presence especially in West Asia and India will strategically and economically establish itself as a World player.
- Indian communities in West Asia have a significant impact upon the Indian economy, through inward remittances. Further cooperation with West Asian countries through I2U2 will enhance inward remittance.

## ISSUES:

- At the grassroots level, the Israel-Palestine conflict is still a major area of concern.
- Iran-Saudi: The Shia-Sunni conflict between Iran and Saudi Arabia is also going on which is also running through Iraq, Syria, Lebanon and Yemen.
- The developing situation might lead to the creation of two groups one with China, Pakistan, Russia, Iran and Turkey while India, Israel, USA and UAE are likely to be on the other side.
- Israel's Haifa port has been expanded by China, more than one and a half billion-dollar investment in Haifa has been made by China.
- China is also building the Ashdod port which is the only port Israel has in the Mediterranean.

## WAY FORWARD:

- For India, Iran is important in relation to the present context of Afghanistan. India must deal with the challenges both diplomatically and strategically in this region.
- Egypt has friendly relations with all the four countries in this alliance but it must be reassured that it will not be impacted economically or politically.
- Balancing the rival countries diplomatically and strategically in order to maintain friendly relations with each other can be done through mutual cooperation among the four countries.

## 14) Mediation Bill, 2021

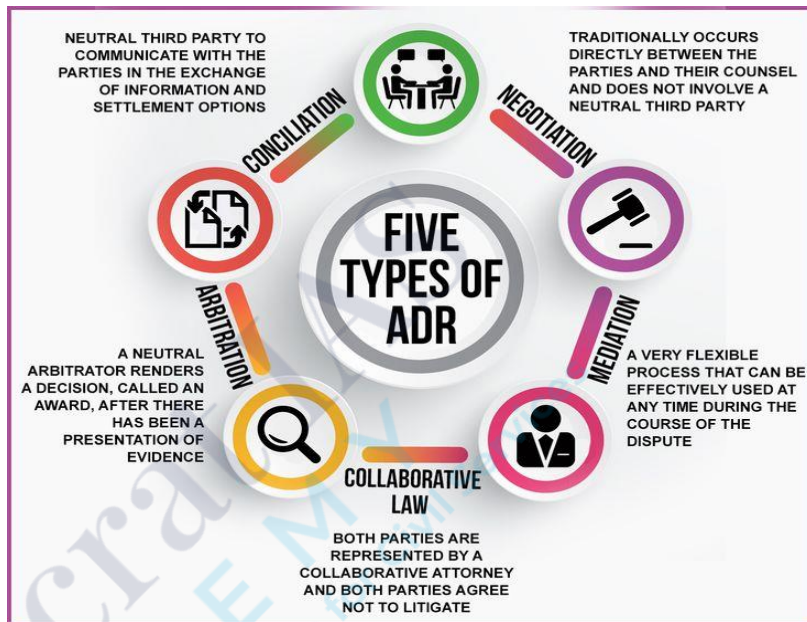
(GS2: Government Policies & Interventions)

Recently, Parliamentary Standing Committee on Law and Justice has recommended substantial changes to the Mediation Bill, 2021.

- The bill introduced in Rajya Sabha in December, 2021, with an aim to reduce the pendency of cases in courts.

### MEDIATION BILL:

- The objective of the bill is to settle any civil or commercial disputes through mediation before seeking court or tribunal's intervention.
- After two mediation sessions, a side may withdraw from mediation.
- The mediation procedure must be completed within 180 days, which the parties may extend by another 180 days.
- The India Mediation Council will be established to regulate the whole process.
- Its tasks include registering mediators and recognising mediation service providers and mediation institutes.
- Further, the agreements resulting from mediation will be binding and enforceable in the same manner as court judgments.



### MEDIATION:

- Mediation is a voluntary, binding process in which an impartial and neutral mediator facilitates disputing parties in reaching a settlement.
- A mediator does not impose a solution but creates a conducive environment in which disputing parties can resolve all their disputes.

### ISSUES WITH THE BILL:

- The Bill makes participation in pre-litigation mediation mandatory. Mediation is a voluntary dispute resolution process. On one hand, this could lead to more out of court settlements and reduce the pendency in courts. On the other hand, mandating mediation goes against its voluntary nature.
- The moment any law is made on the subject it becomes the guiding force.
- The Bill proposes a clause giving the powers to court to make rules for 'court annexed mediation', which is unconstitutional.
- It also raises the question on the non-applicability of the provisions of the Bill to disputes/matters of non-commercial nature involving the Government and its agencies.
- The Mediation Council requires prior approval from the central government before issuing regulations related to its essential functions. It is not clear why such prior approval is required.
- This may also be questioned since the central government may be a party to mediations.
- The Bill applies to international mediations only if they are conducted in India.
- It does not provide for enforcement of settlement agreements resulting from international mediation conducted outside India.

### WAY FORWARD:

- It recommended to make pre-litigation mediation optional and further introduced it in a phased manner instead of introducing it with immediate effect for all civil and commercial disputes.

- The panel recommended that the Central Government can appoint the Chairperson and Members of the Mediation Council of India through a selection committee.
- Given the vast range of duties and obligations allocated to the Mediation Council of India, mediation councils should be established in each state.
- These State Mediation Councils should operate under the general supervision, direction, and control of the Mediation Council of India and perform such functions as it may specify.
- The panel recommended reducing the time limit from 180 days to 90 days and further an extension period of 60 days instead of 180 days.

## 15) Bail law and SC call for reform

*(GS2: Functioning of judiciary)*

The Supreme Court recently underlined that “there is a pressing need” for reform in the law related to bail and called on the government to consider framing a special legislation on the lines of the law in the United Kingdom.

### THE LAW ON BAIL

- The CrPC does not define the word bail but only categorises offences under the Indian Penal Code as ‘bailable’ and ‘non-bailable’.
- The CrPC empowers magistrates to grant bail for bailable offences as a matter of right.
- This would involve release on furnishing a bail bond, with or without security.
- Non-bailable offences are cognisable, which enables the police officer to arrest without a warrant.
- In such cases, a magistrate would determine if the accused is fit to be released on bail.

### THE UK LAW:

- The Bail Act of the United Kingdom, 1976, prescribes the procedure for granting bail.
- A key feature is that one of the aims of the legislation is “reducing the size of the inmate population”.
- The law also has provisions for ensuring legal aid for defendants.
- The Act recognises a “general right” to be granted bail.

### THE COURT’S RULING IS IN THE FORM OF GUIDELINES, AND IT ALSO DRAWS THE LINE ON CERTAIN PROCEDURAL ISSUES FOR THE POLICE AND JUDICIARY.

#### ➤ Separate law for bail:

- The court underlined that the CrPC, despite amendments since Independence, largely retains its original structure as drafted by a colonial power over its subjects.
- It also highlighted that magistrates do not necessarily exercise their discretionary powers uniformly. The court’s solution on this is the framing of a separate law that deals with the grant of bail.

#### ➤ Indiscriminate arrests:

- It emphasised that even for cognisable offences, arrest is not mandatory and must be “necessitated”.

#### ➤ Bail application:

- “There need not be any insistence of a bail application while considering the application under Section 88, 170, 204 and 209 of the Code,” the court held.
- These sections relate to various stages of a trial where a magistrate can decide on release of an accused.
- The Supreme Court held that in these circumstances, magistrates must routinely consider granting bail, without insisting on a separate bail application.

#### ➤ Direction to states:

- The SC also directed all state governments and Union Territories to facilitate standing orders to comply with the orders and avoid indiscriminate arrests.

- The CBI has already communicated earlier orders of the Court to special judges under its jurisdiction.

## 16) India-South Korea Relations

*(GS 2: Bilateral, Regional and Global Groupings and agreements involving India)*

During the past five years, India and South Korea have experienced considerable divergence in their respective national objectives.

- There was a clear drift by South Korea away from multilateral security initiatives led by the United States, such as the Quad (the U.S., Australia, India and Japan); meanwhile, India has been actively participating in them.
- In the last few years, India and South Korea have faced serious blockades to their economic ties.
- Trade between the two countries was sluggish and there was no major inflow of South Korean investment into India.
- No upgrade in CEPA: India and South Korea were also trying to upgrade their Comprehensive Economic Partnership Agreement (CEPA) agreement, but to no avail.



### CHANGE IN KOREAN FOREIGN AND SECURITY POLICIES AND OPPORTUNITIES FOR INDIA:

- Opportunities for India: South Korea's new willingness to become a global pivotal state and play an active role in regional affairs is bound to create multiple opportunities for a multi-dimensional India- Korea partnership.
- Defence cooperation: Advanced defence technologies and modern combat systems are the new domains for the next level of defence cooperation between the two countries.
- A Roadmap for Defence Industries Cooperation between the Republic of India and the Republic of Korea (ROK) was signed in 2020.
- Maritime security: South Korea's participation in additional maritime security activities in the Indian Ocean, such as the annual Malabar and other exercises with Quad countries, will further strengthen India's naval footprint in the Indo-Pacific region.

### CHALLENGES

- Chinese pressure: The Chinese leadership is adversely impacted by policy changes brought in by the Yoon administration.
- The real challenge for global geopolitics is this: can South Korea withstand the inevitable Chinese pressure and stick to its new alignment?
- Tension with North Korea: South Korea's peace process with North Korea has completely collapsed.
- In the coming days, as North Korea conducts more missile and nuclear tests, it may lead to regional tension. Any breakout of hostilities on the Korean Peninsula can derail South Korea's Indo-Pacific project.

### WAY FORWARD

- Strategic partnership: India has evolved excellent strategic partnerships with Japan, Vietnam and Australia.
- South Korea could be the fourth pillar in India's Indo-Pacific strategy along with Japan, Australia, and Vietnam. This can bring about a paradigm shift in India's position and influence in the region.



- With South Korea's emergence as a leader in critical technologies, cybersecurity and cyber-capacity building, outer space and space situational awareness capabilities, South Korea can contribute immensely to enhance India's foundational strengths in the Indo-Pacific.
- India can help South Korea withstand Chinese pressure and North Korean threats.
- This new partnership can have a long-term positive impact for both countries and the Indo-Pacific region.

## 17) President - Not a mere Rubber Stamp

*(GS2: Constitutional Posts)*

Once the President is elected, the excitement subsides and for the next five years not much attention is paid to the Rashtrapati Bhavan.

### **WHAT HAS THE CONSTITUTION PROVIDED REGARDING THE PRESIDENT?**

- Nominal head- Dr. B.R. Ambedkar quoted that our President is merely a nominal figurehead and has no discretion and powers of administration.
- Article 53- It says that the executive power of the Union shall be vested in the President and shall be exercised by him either directly or through officers subordinate to him in accordance with Constitution. It means the President exercises these powers only on the aid and the advice of the Council of Ministers.
- Method of election- It is an indirect election which is proportional representation by a single transferrable vote.

### **IS THE OFFICE OF PRESIDENT A MERE RUBBER STAMP?**

- Moral authority- The population of the country is a crucial factor in the election of the President and gives the President a greater moral authority.
- Disagree with decisions- The President does not directly exercise the executive authority of the Union but he can disagree with the decision of the Council of Ministers, caution and counsel them.
- Ask for reconsideration of decisions- The President can ask the Cabinet to reconsider its decisions but if the Cabinet, after such reconsideration, sends the same proposal back without any change, the President will have to sign it.
- Broader view- The Constitution of India gives the President the freedom to take a broader view of things uninfluenced by the narrow political view of the executive. This can be seen from the oath that contains two solemn promises.
- Influence the government- There were Presidents such as Rajendra Prasad and Sarvepalli Radhakrishnan who openly differed with the government on certain policy issues and could exert tremendous influence on the government.

It is possible for a President to intervene on behalf of the citizenry against the tyranny of the executive and persuade it to give up its ways.

## 18) Important role of vigilant Opposition in democracy

*(GS2: Indian Constitution)*

### **BASIC CONCEPT OF A DEMOCRACY**

- A democratic executive must satisfy two conditions – (1) It must be a stable executive and (2) it must be a responsible executive.
- It is not possible to ensure a stable executive and a responsible executive in equal degree in a particular system. Therefore, the constitutional makers have to adopt either of the two features. Former is ensured in the Presidential System and later is ensured in the Parliamentary system.
- Therefore, the constituent assembly India adopted the parliamentary system because the fathers of the Indian constitution preferred "more responsibility to more stability as per the Indian need."

## ISSUES:

In the recent past, the draconian provisions of various legislations, especially **the Prevention of Money Laundering Act**, have been invoked by the ruling regime against Opposition members.

India has preferred responsible executives to stable executives. However, there are attempts to weaken the opposition in India. which is not in the interest of parliamentary democracy.

There are cases when a party member shows **disloyalty** to his party through violation of the whip. They simultaneously decline to **resign** from his/her seat and to fight an **immediate by-election**.

The Anti-defection law has failed to serve its purpose. It was inserted in the **10th Schedule** through the **52nd Constitutional Amendment Act**. Further, the Supreme Court upheld its constitutional validity long ago.

## WAY FORWARD

- Political parties, the judiciary and civil society must take steps to ensure that democracy does not fail.
- Some political thinkers' advocates for the 'theory of recall,' so that a member whose personal behaviour falls below standards expected of his constituents goes back and seeks the approval of the voters.
- The judiciary must be aware of the ground realities and not allow such politically motivated investigations. Judges should readily grant anticipatory bail or regular bail in politically motivated matters. The Supreme Court can re-write the anti-defection law by invoking powers under Article 142 of the Constitution.
- In a democratic set up, criticism from the opposition parties must be tolerated because it is the essence of democracy.  
During the Constituent Assembly debates, Ram Narayan Singh said, "A government which does not like opposition and always wants to be in power is not a patriotic but a traitor government."

## 19) The Great Omission in the Draft Disability Policy

*(GS 2: Welfare schemes for vulnerable sections)*

The Department of Empowerment of Person with Disabilities (DoEPwD) recently released the draft of the national policy for persons with disabilities ("Policy").

- About: The principle of the draft policy is to showcase the Government's commitment to the inclusion and empowerment of persons with disabilities by providing a mechanism that ensures their full participation in society
- Key Features: the policy document highlights a detailed commitment to education, health, skill development and employment, sports and culture, social security, accessibility and other institutional mechanisms.

## ASSOCIATED CONCERNS OF DISABLED PEOPLE IN INDIA

- Failed to Recognize Right to Political Participation of Disabled People: India does not have any policy commitment that is aimed at enhancing the political participation of disabled people. The Incheon goals also promote participation in political processes and in decision making.
- Accessibility Issue:
  - There is often a lack of accessible polling booths in many locations.
  - There is still no widespread adaptation of braille electronic voting machines and even wheelchair services at all polling centres.

- The Election Commission of India has developed its own procedures for handling PwDs during the electoral process.
- The lack of live aggregate data on the exact number of the disabled people in every constituency only furthers their marginalisation.
- The lack of accessible space for party meetings, inaccessible transport for campaigning or an attitudinal barrier among voters and party leaders can be termed as contributing factors.
- Lack of representation: Barriers to participation in party politics or A lack of representation at the local, State or national levels.
- However, few States have begun the initiative at local levels to increase participation.
- For instance, Chhattisgarh started the initiative of nominating at least one disabled person in each panchayat. If a disabled person is not elected, then they are nominated as a panchayat member as per changes in the law concerned.

#### **WAY FORWARD:**

- Building the capacity of disabled people's organisations and 'empowering their members through training in the electoral system, government structure, and basic organisational and advocacy skills';
- The creation, amendment or removal of legal and regulatory frameworks by lawmakers and election bodies to encourage the political participation of the disabled;
- Inclusion of civil societies to 'conduct domestic election observation or voter education campaigns'; and
- A framework for political parties to 'conduct a meaningful outreach to persons with disabilities when creating election campaign strategies and developing policy positions'.

## **20) The Shanghai Cooperation Organization and its stature in the modern world**

*(GS 2: Bilateral, Regional and Global Groupings and agreements involving India)*

Iran and Belarus could soon become the newest members of the China and Russia-backed Shanghai Cooperation Organization (SCO).

- In the Samarkand summit, the leadership will adopt a document on the obligations Iran must fulfill to gain membership.

#### **RELEVANCE TO INDIA:**

- India acquired the observer status in the grouping in 2005 and was admitted as a full member in 2017.
- Discuss differences with other members on the sidelines: SCO hosts have encouraged members to use the platform to discuss differences with other members on the sidelines
- Bilateral meeting with Pakistan: It was on such an occasion that the Prime Minister of India held a bilateral meeting with the former Pakistani Prime Minister in 2015 in Ufa.
- Negotiation of five point agreement with Chinese counterpart: Foreign Minister of India negotiated a five-point agreement with his Chinese counterpart on the sidelines of the Moscow conference in 2020.
- Strategic autonomy and multi-alignment: India is also a part of the 'Quadrilateral' grouping with the U.S, Japan and Australia. Its association with the grouping of a rather different nature is part of its foreign policy that emphasizes on principles of "strategic autonomy and multi-alignment".
- Fulfilling energy demand: India being an energy deficient country with increasing demands for energy, SCO provides it with an opportunity to meet its energy requirements through regional diplomacy.
- Talks on the construction of stalled pipelines like the TAPI (Turkmenistan-Afghanistan-Pakistan-India) pipeline; IPI (Iran-Pakistan-India) pipeline can get a much needed push through the SCO.
- Economic ties: Central Asian countries provide India with a market for its IT, telecommunications, banking, finance and pharmaceutical industries.
- Geopolitical: Central Asia is a part of India's Extended Neighbourhood, SCO provides India an opportunity to pursue the "Connect Central Asian Policy".

- Helps India fulfill its aspiration of playing an active role in its extended neighborhood as well as checking the ever growing influence of China in Eurasia.

#### **CHALLENGES OF SCO MEMBERSHIP FOR INDIA:**

- Pakistan's inclusion in SCO poses potential difficulties for India.
- India's ability to assert itself would be limited and it may have to play second fiddle since China and Russia are co-founders of SCO and its dominant powers.
- India may also have to either dilute its growing partnership with the West or engage in a delicate balancing act – as SCO has traditionally adopted an anti-Western posture.

#### **IS IT ABOUT COUNTERING THE WEST?**

- Growing differences with the west: The Council on Foreign Relations (CFR) noted in 2015 that decades of rapid economic growth had propelled China onto the world's stage. Russia found itself beset with economic turmoil following the Crimean annexation in 2014 and ejection from the G8 grouping.
- No supporters in the west: The organization spearheaded by both Russia and China does not find its supporters in the West.
- Russian action in Ukraine and China's distance diplomacy: Most recently, Russia's action in Ukraine caused it to be subjected to sanctions on multiple fronts by the West.  
China's 'distance diplomacy', had held that the security of one country should not be at the expense of another country, blaming the West (specifically referring to NATO) for the entire episode.
- Look to the east by Iran: The Iranian leadership has often stressed that the country must "look to the East". This is essential not only to resist its economic isolation (by addressing the banking and trade problems on account of U.S. sanctions) from the West, but also find strategic allies that would help it to reach a new agreement on the nuclear program.
- In other words, using its ties with China and Russia as a leverage against the West.
- Additionally, it would help it strengthen its involvement in Asia.
- Diplomacy and regional stature for Belarus: Belarus, which lent its support to Russia for its actions in Ukraine. An association with the SCO bodes well for its diplomacy and regional stature



#### **WAY FORWARD:**

- More measures against terrorism: Despite the establishment of the SCO's Regional Anti-Terrorist Structure (RATS), the SCO has not taken visible counterterrorism measures against the main threat facing its members.
- There is a need for the Summit to play a central and coordinating role to enforce the Council's sanctions against concerned entities.
- Engagement: It provides a platform for India to simultaneously engage with its traditional friend Russia as well as its rivals, China and Pakistan and provides India an opportunity to pursue the "Connect Central Asian Policy".

## **21) NAMASTE scheme**

(GS 2: Government Scheme/Policies)

The scheme is a joint venture of Department of Drinking Water and Sanitation, Ministry of Social Justice and Empowerment and the Ministry of Housing and Urban Affairs.

- It aims to achieve outcomes like:



- Zero fatalities in sanitation work in India
- No sanitation workers come in direct contact with human faecal matter
- All Sewer and Septic tank sanitation workers have access to alternative livelihoods
- The Ministry has shortlisted type of machineries and core equipments required for maintenance works, safety gear for Safai Mitras.

#### **WHAT IS MANUAL SCAVENGING?**

- Manual scavenging is the practice of removing human excreta by hand from sewers or septic tanks.
- India banned the practice under the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR).
- The Act bans the use of any individual for manually cleaning, carrying, disposing of or otherwise handling in any manner, human excreta till its disposal.
- The Act recognizes manual scavenging as a “dehumanizing practice,” and cites a need to “correct the historical injustice and indignity suffered by the manual scavengers.”

#### **WHY IS IT STILL PREVALENT IN INDIA?**

- Low awareness: Manual scavenging is mostly done by the marginalized section of the society and they are generally not aware about their rights.
- Enforcement issues: The lack of enforcement of the Act and exploitation of unskilled labourers are the reasons why the practice is still prevalent in India.
- High cost of automated: The Mumbai civic body charges anywhere between Rs 20,000 and Rs 30,000 to clean septic tanks.
- Cheaper availability: The unskilled labourers, meanwhile, are much cheaper to hire and contractors illegally employ them at a daily wage of Rs 300-500.
- Caste dynamics: Caste hierarchy still exists and it reinforces the caste's relation with occupation. Almost all the manual scavengers belong to lower castes.

#### **WAY FORWARD**

- Regular surveys and social audits must be conducted against the involvement of manual scavengers by public and local authorities.
- There must be proper identification and capacity building of manual scavengers for alternate sources of livelihood.
- Creating awareness about the legal protection of manual scavengers is necessary.

## **22) Advantage New Delhi' in Sri Lanka's India lifeline**

(GS2: Bilateral relations)

The situation in Sri Lanka gives India an opportunity to take the lead in the foreign aid game in its neighbourhood.

#### **WHAT ARE THE ECONOMIC CHALLENGES FACED BY SRI LANKA?**

- This is Sri Lanka's worst economic crisis since its independence in 1948.
- The Sri Lankan economy is experiencing stagflation after the debt default and a shortage of dollars,
- Inflation has spiralled to over 50%, translating into higher food and fuel prices,
- Sri Lanka is also facing challenges in getting foreign aid.
- At this level, the economy could contract by at least 6% in 2022. Sri Lanka would require financing that falls between \$20 billion to \$25 billion over the next three years to ensure essential imports of food, medicine and fuel for its people and help in stabilising the economy.

#### **HOW DID INDIA HELP SRI LANKA TO AVERT ITS ECONOMIC CHALLENGES?**

- India was the first responder to Sri Lanka's calls for foreign aid to help tackle its crippling debt and economic crisis.
- In the first six months of 2022, Indian aid worth \$3.8 billion has flowed to Sri Lanka through loans, swaps and grants. This is India's largest bilateral aid programme in recent times.
- There are questions by some that why taxpayers should be used to bail out another country's failed economy. But this is wrong because
- Stabilising Sri Lanka's economy could prove to be a major win for India's 'neighbourhood-first' policy,
- Once the Sri Lankan economy stabilises, India can deepen its trade and investment linkages with Sri Lanka. This can exceed the current humanitarian aid relationship,
- Stable Sri Lanka could spur regional integration and prosperity and
- Unstable Sri Lanka also poses security risks to India and lead to a flood of refugees across the Palk Strait.

How China's dilemma to help Sri Lanka will help India?

- China has emerged as a major partner for Sri Lanka, especially for infrastructure projects. However, many of them are under scrutiny for their 'debt trap' narrative,
- China worries that unilaterally restructuring Sri Lanka's debt would set a new precedent in its lending practices. This might facilitate similarly distressed countries seeking debt relief from China, and
- China being a G2 economy and wanting to challenge the U.S., does not want its reputation to be spoiled by bailing out a floundering economy.

All this provides an opportunity for India to upscale its aid and cement its first mover advantage over China.

### 23) Adding digital layers of indignity:

(GS Paper 2 – Social Issues – Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes)

The article provides many examples to prove that outsourcing humane aspects of governance to technologies lead to dehumanisation.

- Right to live with dignity is a constitutional imperative.
- Digital initiatives in governance like Centralised data dashboards have become the go-to mode for assessing policies.
- It has lowered the value of principles such as human dignity and hardships in accessing rights.
- when trust and humane aspects of governance are outsourced to technologies, dehumanisation is the likely outcome.

#### **INTEGRATED CHILD DEVELOPMENT SCHEME (ICDS):**

- In 2021, the Union government launched the Poshan Tracker, a centralised platform, to monitor all nutrition initiatives, including ICDS.
- As per Union government circulars, the updating of Aadhaar of ICDS rights-holders, including children, on the Poshan Tracker is mandatory, and subsequent Central funds for supplementary nutrition to States is being made contingent on this.
- Nearly three-fourths of children between the ages of 0 to 5 years do not have Aadhaar cards, and Supreme Court orders specify that children cannot be denied their rights for lack of Aadhaar.
- And also government does not provide any data or evidence to show how many "fake" or "ghost" children there are.
- As per the recent National Family Health Survey, 36% of children under the age of five are stunted and nearly one-third of children in this age group are underweight.
- In such light, creating new hurdles for children — migrants or otherwise — and young mothers to access food in the name of digitisation appears cruel.

#### **NATIONAL MOBILE MONITORING SOFTWARE (NMMS) APP TO RECORD ATTENDANCE OF MGNREGA WORKERS**

- The Union government has issued an order introducing the NMMS app to record attendance of MGNREGA workers at worksites.
- Earlier MGNREGA workers could complete their share of work and leave.
- This gave them time for household work or for other work that gave them supplementary income.
- The app makes this hard as they have to now stay back at the worksite even after completing their work only to get photographed and geo-tagged.
- Mates have to carry smartphones which many don't own.
- Another report shows that many Mates are forced to take loans to buy smartphones to use the app.
- The very need for an app, its failures plus other impediments such as unstable network connectivity are likely to discourage women from MGNREGA work.

#### **ISSUES:**

- Both these technocratic initiatives point to a digital avatar of all-in with no evident positives for the rights-holders.
- Further the rights-holders will be made to take the blame for technical reasons blocking their participation.
- This further alienates and erodes the political capacities of rights-holders who usually get addressed in patronising terms such as "beneficiaries."
- In the process, violations of dignity get buried in the calculus of technocracy and opacity of government actions.

#### **WAY FORWARD:**

- Initiatives should be designed considering the demands of all stakeholders
- Strengthening social audits
- Evaluations enable better decision-making – Interim design evaluations and rapid assessments are two such techniques
- Design evaluations can be used to check the soundness of a programme by mapping its objectives, implementation architecture, and expected results.
- Similarly, rapid assessments are shorter exercises to check the quality of service delivery, the end-user uptake, and satisfaction with the services.

### **24) The nuclear response:**

(GS Paper 2 – Foreign policy of India – India's nuclear policy)

A recent report on Asian nuclear transitions by Ashley Tellis of the Carnegie Endowment underlined the shared security challenges for Delhi and Tokyo. The shared challenge is increasing Chinese military power and the rapid modernisation of Beijing's nuclear arsenal.

Until now, both Japan and India were relaxed by the fact that China's modest nuclear arsenal is not an existential threat. But much has changed now.

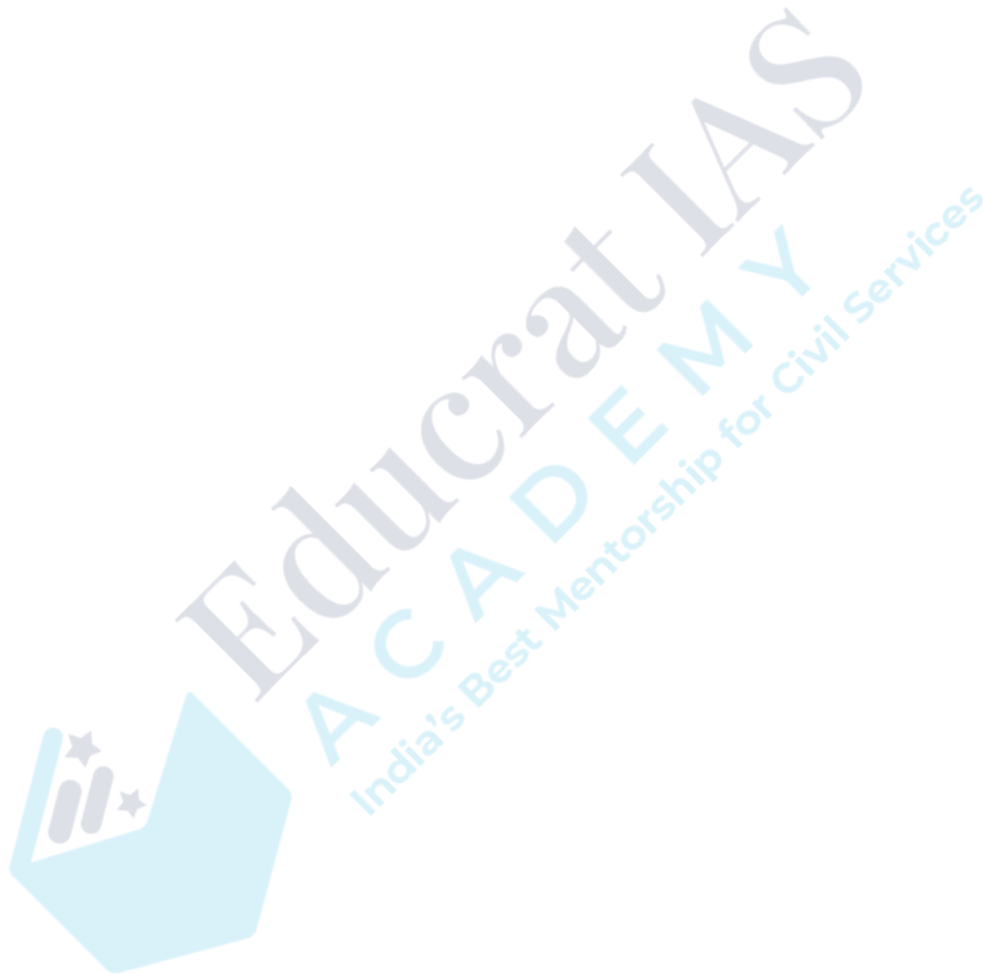
#### **WHAT ARE THE FACTORS EMPHASISING SHARED CONCERNS OF INDIA AND JAPAN WITH REGARD TO CHINA?**

- First, China's modernisation and expansion of nuclear arsenal. As per some estimates, China's arsenal could grow from about 350 now to 1,000 warheads by 2030.
- Second, China's muscular approach to its territorial disputes with other countries. It has adopted the strategies of salami slicing and coercive diplomacy at frontiers with Japan and India.
- Third, Russian invasion of Ukraine has made it clear that if a nuclear power invade another country, international powers feel reluctant to interfere. It is due to the fear of facing nuclear war or attack.
- Fourth, given the fact that China is closing the economic and military gap with US, credibility of the US-extended deterrence for Japan is under question.
- Fifth, India's policy of minimum deterrence and a doctrine of no-first-use of nuclear weapons are not sufficient against the China's aggressive policies.

- Sixth, both India and Japan are not well positioned to be champions for the global abolition of nuclear weapons. While India never agreed to give up its own nuclear weapons, Japan despite being the victim of nuclear weapons, is under US nuclear umbrella.

#### **WHAT SHOULD BE DONE?**

- India needs to reconsider its India's minimum deterrence posture.
- US needs to revise its confronting attitudes towards India's nuclear weapons programme. Instead US should facilitate India's development of more sophisticated nuclear warheads.
- "INFRUS" agreement — between India, France and the US could help India build an underwater deterrence based on ballistic missile carrying submarines (SSBN) as well as nuclear attack submarines (SSN).





## GS III

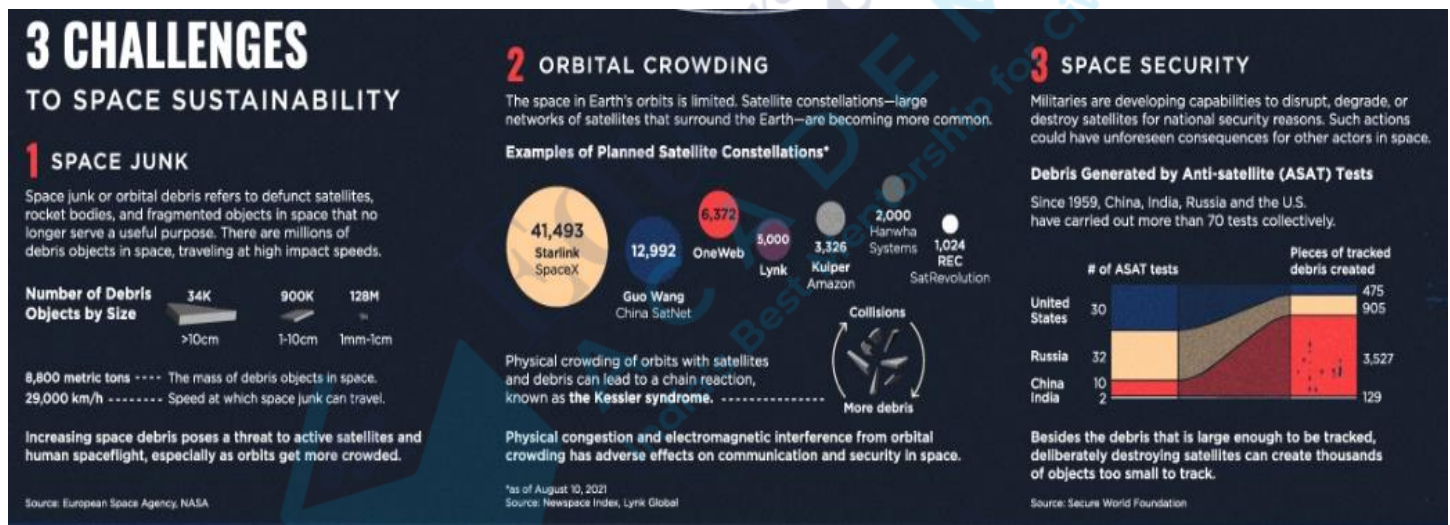
### 25) Need for Outer Space Sustainability:

(GS3: Awareness In The Fields Of Space)

Recently, the UK hosted the fourth summit for Space Sustainability in London in collaboration with the Secure World Foundation.

#### WHAT DOES SUSTAINABILITY IN OUTER SPACE MEAN?

- One of the hot issues when it comes to space sustainability is orbital crowding.
- With the emergence of large constellations and complex satellites, there is a risk of collisions and interference with radio frequencies.
- It poses a direct threat to the operations and safety of a mission and is likely to cause legal and insurance-related conflicts.
- Space debris is another prominent issue.
- After the completion of a mission, an 'end-of-life protocol' requires space objects to be moved to the graveyard orbit or to a low altitude.
- Other causes of concern are solar and magnetic storms which potentially damage communication systems.
- Such space weather threats need to be addressed along with the efforts to identify the terrestrial carbon footprint of outer space missions.



#### POLICY MEASURES BY UN:

- As the outer space is considered a shared natural resource, the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) in 2019 adopted a set of 21 voluntary, non-binding guidelines.
- They aim to ensure the long-term sustainability of outer space activities.

#### WHAT DOES THE UK PLAN FOR SPACE SUSTAINABILITY ENTAIL?

- The UK calls for an "Astro Carta" for space sustainability, based on the Artemis Accords model for sustainable space exploration.
- The UK Space Sustainability plan mentions four primary elements:
- To review the regulatory framework of the UK's orbital activity
- To work with organisations such as the G-7 and the UN to emphasise international engagement on space sustainability
- To try and develop safety and quality-related metrics that quantify the sustainability of activities; and
- To induce additional funding of \$6.1 million on active debris removal

### WHERE DOES INDIA STAND ON SPACE SUSTAINABILITY?

- India is well on its way to create a subsystem that addresses global sustainability questions.
- The ISRO has initiated 'Project NETRA' to monitor space debris.
- To provide in-orbit servicing, ISRO is developing a docking experiment called 'SPADEX'.
- It looks at docking a satellite on an existing satellite, offering support in re-fuelling and other in-orbit services while enhancing the capability of a satellite.

### WAY FORWARD

- Outer space in the 2020s can no longer be considered a 'space race' because of the cost, when compared to the beginning of this century.
- Today, any entity (government or private) with the necessary access to resources and technology can invest in outer space.
- Sustainable practices in outer space would directly help reduce orbital crowding and collision risk while nurturing future technologies.

### 26) Right Intent, Confusing Content:

*(GS 3: Conservation, environmental pollution and degradation, environmental impact assessment.)*

Recently, Ministry of Environment has released the Draft E-waste Management Rules, 2022, for public comments.

**Electronic waste** or e-waste is generated when electronic and electrical equipment become unfit for their originally intended use or have crossed the expiry date.

- Examples: Computers, servers, mainframes, monitors, compact discs (CDs), printers etc.
- According to a report released at the World Economic Forum 2018, India ranks 177 amongst 180 countries and is amongst the bottom five countries on the Environmental Performance Index 2018.
- Also, India is ranked fifth in the world amongst top e-waste producing countries after the USA, China, Japan, and Germany.
- India recycles less than 2 per cent of the total e-waste it produces annually formally.
- India generates more than two million tonnes of e-waste annually, and also imports huge amounts of e-waste from other countries around the world.
- Dumping in open dumpsites is a common sight which gives rise to issues such as groundwater contamination, poor health, and more.

### E WASTE MANAGEMENT RULES 2022: KEY POINTS

- The draft rules state that producers of e-goods have to ensure that at least 60% of their produced e-waste is recycled by 2023.
- Introduction of a Steering Committee to oversee the "overall implementation, monitoring, and supervision" of the regulations.
- The rules propose a) expanding the definition of e-waste, b) more clearly specifying the penalties for violation of rules, c) introducing an environmental compensation fund based on the 'polluter pays' principle, and d) recognising the informal waste workers.

### WHAT ARE THE CHALLENGES ASSOCIATED WITH THE DRAFT E-WASTE RULES?

- First, large-scale recycling of e-waste is still in its infancy in India. Most of the recycling of valuable material is carried out within the informal sector using inefficient and unsafe technologies. Considering this, the target to recycle 60% of the e-waste generated in 2022-23 appears too optimistic.
- Second, the government has to focus on existing formal and informal players if it wants to create better recycling facilities. But the draft rules are silent on regulating registered collectors, dismantlers, and producer responsibility organisations.

- Third, the informal sector accounts for a vast majority of e-waste processed in India. Most e-waste policy debates have centred around the integration of the informal sector into the formal systems. But the proposed regulations place the responsibility of such integration on the State governments without specifying what the incentives are for them to do this.
- Fourth, based on European experience, the regulators face more difficulties in monitoring and enforcing recycling targets than the collection targets. But the present draft is silent on whether the rules will apply to the aggregate weight of e-waste or to every component of an e-product
- Fifth, the Steering Committee mentioned in the draft lacks representation in the Committee. For instance, there is no representation from science/academia and civil society organisations.

Hence, the core changes it proposes within the EPR framework require careful deliberation with all the relevant stakeholders before the Rules are finalised.

## 27) VPN norms:

(GS3: S&T)

Recently the Cert-In issued norms under which VPN providers have to record personal information of their customers, including purpose of using service, for five years

### NEW RULES:

- VPN companies to record personal information of their users including names, email id, phone number and IP address for a period of five years.
- They also have to record usage patterns, purpose of hiring services and various other information.
- Apart from VPN companies, data centers, virtual service network providers, cloud service providers have also been asked to record and maintain similar data.
- In the form of Know Your Customer (KYC), virtual asset service providers, virtual asset exchange providers and custodian wallet providers would also be recording information for the same period along with records of financial transactions.
- The directives will take effect the end of June. And if the data is not handed over to the government by then, the entities would face punitive action.
- Government logic behind new rules. The Centre said these rules will “enhance overall cyber security posture and ensure safe & trusted internet in the country”.
- It noted that the Indian Computer Emergency Response Team (CERT-In), which serves as a safeguard against cyber attacks, has identified “gaps” in the way it analyses online threats due to which it has issued the new norms for reporting cyber incidents.

- **VPN** stands for "Virtual Private Network" and describes the opportunity to establish a protected network connection when using public networks.
- VPNs encrypt your internet traffic and disguise your online identity. This makes it more difficult for third parties to track your activities online and steal data. The encryption takes place in real time.

### HOW ARE VPN PROVIDERS REACTING TO THE NORMS?

- With the new rules the government will basically have access to the personal information of the customers which makes the use of a VPN redundant.
- Many VPN providers are mulling the implications of the new rules and some have even threatened to pull back their service from the country.

### WHAT ARE THE BENEFITS OF A VPN CONNECTION?

- **Secure encryption:** To read the data, you need an encryption key. Without one, it would take millions of years for a computer to decipher the code in the event of a brute force attack. With the help of a VPN, your online activities are hidden even on public networks.

- Disguising your whereabouts : VPN servers essentially act as your proxies on the internet. Because the demographic location data comes from a server in another country, your actual location cannot be determined.
- Access to regional content: Regional web content is not always accessible from everywhere. Services and websites often contain content that can only be accessed from certain parts of the world.
- With VPN location spoofing , you can switch to a server to another country and effectively “change” your location.
- Secure data transfer: If you work remotely, you may need to access important files on your company’s network. For security reasons, this kind of information requires a secure connection. VPN services connect to private servers and use encryption methods to reduce the risk of data leakage.

## 28) NITI AAYOG report on gig economy:

(GS 3: Indian Economy)

NITI Aayog recently launched a report titled ‘India's Booming Gig and Platform Economy’.

### **DETAILED INFORMATION**

- The report broadly classifies gig workers — those engaged in livelihoods outside the traditional employer-employee arrangement — into platform and non-platform-based workers.
- Platform workers are those whose work is based on online software apps or digital platforms.
- Non-platform gig workers are generally casual wage workers and own-account workers in the conventional sectors, working part-time or full time.
- The 'platformization' of work has given rise to a new classification of labour — platform labour — falling outside of the purview of the traditional dichotomy of formal and informal labour.
- These platform workers are termed as “independent contractors” and as a result, they cannot access many aspects of workplace protection, and entitlements.
- The number of workers engaged in the gig economy is estimated to be 77 lakh in 2020-21.
- Gig workforce in the country is expected to grow to 2.35 crore by 2029-30.
- At present, about 47% of gig work is in medium skilled jobs, about 22% in high skilled, and about 31% in low skilled jobs.
- Concentration of workers in medium skills is gradually declining and that of the low skilled and high skilled is increasing.
- In 2020-21, the gig workforce constituted 2.6% of the non-agricultural workforce or 1.5% of the total workforce in India.
- By 2029-30, gig workers are expected to form 6.7% of the non-agricultural workforce or 4.1% of the total livelihood workforce.

### **RECOMMENDATION OF THE REPORT**

- India requires a framework that balances the flexibility offered by platforms while also ensuring social security of workers.
- Measures should be taken to provide for social security, including paid leave, occupational disease and work accident insurance, support during irregularity of work and pension plans.
- It recommended introducing a ‘Platform India initiative’, on the lines of the ‘Startup India initiative’, built on the pillars of accelerating platformisation by simplification and handholding, funding support and incentives, skill development, and social financial inclusion.
- Access to institutional credit may be enhanced through financial products specifically designed for platform workers.
- Venture capital funding, grants and loans from banks and other funding agencies should be provided to platform businesses of all sizes at the pre-revenue and early-revenue stages.
- Gender sensitisation and accessibility awareness programmes for workers and their families.
- Extend social security measures for such workers and their families in partnership mode as envisaged in the Code on Social Security.



## 29) Understanding the all-time high in India's trade deficit:

*(GS 3: Indian Economy)*

A surge in imports combined with slow growth in exports has pushed India's merchandise trade deficit to a record high of \$25.6 billion in June

### **REASON FOR INCREASE IN IMPORTS:**

- Imports have literally been fuelled by energy sources — oil and coal. The demand for oil driven by higher prices and the demand for coal driven by India's domestic coal supply crunch compelling power producers to import more each passing month.
- Moreover, non-oil, non-gold imports (also known as core imports) also grew robustly due to higher inflows of plastics, chemicals, electronics and vegetable oils. This is in line with steady domestic demand.

### **REASON FOR SLOWDOWN IN EXPORTS**

- The slowdown in exports is due to an underlying slowdown in external demand with weakness seen in exports of engineering products, chemicals, pharmaceuticals, cotton yarn and plastic products. These four categories are part of India's top ten exports.

### **WHAT WILL BE THE TRADE TRAJECTORY OF INDIA IN THE COMING MONTHS?**

- Oil and gold prices have corrected a bit recently but still, it remains significantly high. Moreover, coal imports will only surge further as Coal India's production levels slide through the monsoon.
- The weakening rupee will continue to make imports costlier while slowing exports may not be able to capitalize enough on it.
- Hence, Indian exporters don't expect a change in the narrative till the war in Europe abates, along with the high volatility in commodity prices.

## 30) We need an orderly transition from coal to renewables

*(GS3: Infrastructure: Energy, Ports, Roads, Airports, Railways Etc.)*

With inflation at unprecedented levels in many countries, concerns over energy security have gained centre stage.

### **NEEDS TO INCREASE DOMESTIC COAL PRODUCTION**

- High prices of coal and coal-based generation will only encourage imported coal and expose the country to price risks from international energy prices.
- The domestic coal industry has responded to increasing international prices with an increase of over 30 per cent in coal production from April to June this year.
- Anticipating these problems, a big effort toward permitting commercial mining has been made to get the private sector to produce more coal.
- Gradual transition: Looking at coal from a singular focus on GHG emissions will give a myopic view of energy requirements for a growing economy like India.
- The path to achieving 500 GW of renewables needs to be gradual, ensuring an orderly transition as coal is unavoidable in the near future.
- Reducing coal imports and increasing domestic production of coal needs focused attention

### **SUGGESTIONS TO INCREASE DOMESTIC PRODUCTION OF COAL:**

- The draft National Electricity Policy released in May 2021, recognised the need to increase coal-based generation.
- Holistic approach in ESG criteria: Apart from the government, the industry should also take up this issue with the financial community in adopting a more holistic approach toward environmental, social, and governance (ESG) criteria.
- There is the need for a regulator to address the issues arising from a greater role of the private sector.

- Single point of contact: A single point of contact for the industry in the form of a dedicated regulator would give great comfort to private players and would help to overcome problems that could arise in due course.
- The undue financial burden on the coal sector due to various cross subsidies needs attention. The regime needs to be reformed.

### 31) The Road to rolling out labour codes

*(GS3 – Economy – Industrial policy and growth)*

The Code on Wages (passed in Parliament in August, 2019), the Industrial Relations Code, the Code on Social Security, and the Code on Occupational Safety, Health and Working Conditions (all passed on September 22 and 23, 2020 in the Lok Sabha and the Rajya Sabha) have not yet been implemented.

#### **VIEWS OF STAKEHOLDERS:**

- The Centre claims that the four codes are a major step in the process of labour reforms.
- The central trade unions (CTUs) have held three general strikes against the codes so far, alleging that the codes will result in taking away whatever little social and economic security is left in the employment sector.
- The farmers' organisations had also supported the trade unions in their protests.
- The employers' associations, had mixed feeling towards the codes, but had generally welcomed them.

#### **ISSUES:**

- The government says the delay in implementation is due to the delay in framing rules by the States. As labour is a concurrent subject, both the States and the Centre will have to prepare rules for the codes.
- Pushing out a large section of the workforce: According to the Centre of Indian Trade Unions, the code will push out a large section of the workforce out of the coverage of all labour laws.
  - ✓ For instance, the 2019 bill for Code on Industrial Relations, provided that all industrial establishment with 100 workers or more must prepare standing orders on the matters listed in a Schedule to the Code. However, this provision was later made applicable to establishments with at least 300 workers.
- Registration and working of central trade unions: The BMS have concerns on Codes on Industrial Relations, specifically on the provisions for the registration and working of central trade unions.
- Expansion of social security network: CII and FCII had expressed reservations about the proposal for increasing the minimum wages and expanding the social security network by involving the employers too.
- The SP Mukherjee committee, which is working towards the issue of minimum wages, is yet to complete its task. Setting a national minimum wage is important in the implementation of the Code on Wages.
- Economic slowdown: The employers are worried that further increase in the salary bill will hamper their profits in a recession-hit economy and they expect the government to hold more discussions.

#### **WAY FORWARD:**

- Constitute committee: The Government should constitute a tripartite or multipartite committee, an anomaly committee like the Pay Commission.
- Purpose: This committee could review the Codes taking into account demands of both the parties and introduce multiple amendments so that the Codes satisfies both the parties and aid industrial growth as well as labour welfare.

•**The Code on Social Security, 2020:** Under this, the aggregators employing **gig workers** have to contribute 1-2 per cent of annual turnover for social security, with the total contribution not exceeding 5 per cent of the amount payable by the aggregator.

•**The Industrial Relations Code, 2020:** It includes classification of workers, manner of informing workers about work hours, holidays, paydays, and wage rates, termination of employment, and grievance redressal mechanisms for workers.

•**Code on Wages, 2019:** It proposes to fix a **National Floor Level Minimum Wage**, pegs **basic pay** at 50 per cent of gross salary and **redefine the break-up of wage** to increase the share of the basic pay component to enable **higher provision for social security** such as Employees' Provident Fund for establishments, especially in the service sector.

•**The Occupational Safety, Health and Working Conditions Code, 2020:** It spells out **duties** of employers and employees, and envisages **safety standards** for different sectors, focusing on the health and working condition of workers, hours of work, leaves, etc.  
• It also recognises the **right of contractual workers** and provides for **statutory benefits** like social security and wages to **fixed-term employees** at par with their permanent counterparts.

### 32) Four-day work week: The five-day work week might be fading away

(GS 3 – Indian Economy and issues relating to planning, mobilization, of resources, growth.)

The idea of a four-day week against the usual 40-hour, five-day work week has been mooted for decades.

#### FINDINGS:

- **Microsoft trial:** The most recent and widespread adoption of a four-day work week was a trial run by Microsoft in Japan in 2019. The study witnessed a 40% increase in worker productivity, presumably due to increased job satisfaction and lower burnouts.  
Apart from workers' productivity, the company also witnessed higher efficiency in the form of lower office costs. It saw a massive 23% dip in electricity costs and a 60% fall in the number of pages printed in the office

BENEFITS	CHALLENGES
<p>Fewer working days will lead to lower commuting and hence have a positive impact on the environment, including a fall in electricity consumption in offices</p> <p>It can be an important tool to revive employment rates after the novel coronavirus pandemic as against the phenomenon of Great Resignation</p> <p>It will increase work-life balance and a step toward gender equality and women's career progression. This is because women often opt for smaller shifts and shorter work days for lower pay after they become mothers.</p>	<p>A four-day work week is not one that fits all. The service sector has challenges implementing a four-day work week, especially for small firms,</p> <p>The sales and marketing departments of firms may also face issues as there would be less time to chase leads, build customer relations and solve issues,</p> <p>Further, employees in firms that would not decrease work hours in a four-day work week would have to work 10 hours on working days, which can lead to increased stress and decreased satisfaction,</p> <p>It will also affect employees' holiday entitlements.</p>

- Government response: Recognising this, the Central government is set to roll out the new labour codes, which include rules for a flexible four-day work week. The new codes stipulate the requirement of a minimum of 48 hours per week; hence the employee will have to work for 12 hours on each working day.
- Expected Output: This is not likely to increase productivity as the increased per day hours of work would work against employee motivation to increase output.
- Suggestions: The draft code should only reduce the number of workdays, keeping the number of hours fixed.

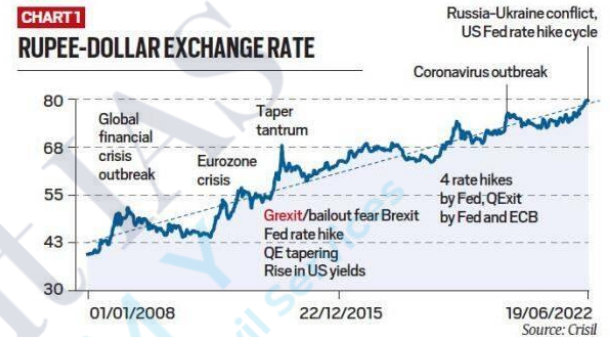
### 33) What Rs80 to dollar means

(GS3: Indian Economy)

The Indian rupee breached the psychologically significant exchange rate level of 80 to a US dollar in early trade.

#### FREE FALL OF INDIAN RUPEE

- Since the war in Ukraine began, and crude oil prices started going up, the rupee has steadily lost value against the dollar.
- There are growing concerns about how a weaker rupee affects the broader economy.
- Certainly it presents challenges to policymakers, especially since India is already grappling with high inflation and weak growth.



#### WHAT IS THE RUPEE EXCHANGE RATE?

- The rupee's exchange rate vis-à-vis the dollar is essentially the number of rupees one needs to buy \$1.
- This is an important metric to buy not just US goods but also other goods and services (say crude oil) trade in which happens in US dollars.

#### BENEFITS OF RUPEES FALL

Broadly speaking, when the rupee depreciates, importing goods and service becomes costlier.

But if one is trying to export goods and services to other countries, especially to the US, India's products become more competitive.

Depreciation makes these products cheaper for foreign buyers.

#### HOW BAD IS IT FOR THE RUPEE?

If the rupee depreciates at a rate faster than the long-term average, it goes above the dotted line, and vice versa

While India is fine as of now, trends suggest things are getting worse.

For instance, forex reserves have fallen by over \$50 billion between September 2021 and now.

It is important to remember that it is more of a story of the dollar strengthening than the rupee weakening. This suggests that as things stand, India is still not facing an external crisis.

#### INDIA'S VULNERABILITY ON THE EXTERNAL DEBT FRONT

- In 2021-22, India had a trade deficit of \$189.5 billion.
- That is, the country imported more goods (such as crude oil) than it exported, and the net effect was negative.
- At the end of the year, the BoP was at a surplus of \$47.5 billion — that is, the net effect of all transactions on current and capital accounts was that \$47.5 billion came into India.

#### NOW, TWO THINGS CAN HAPPEN FROM HERE:

- Huge BoP surplus would lead to the rupee appreciating:



- This will bring about a change in people's buying and investing preferences. For instance, India's exports will become costlier and import cheaper. Over time, the trade deficit will alter (will reduce or turn into a surplus) to "balance" the BoP.
- RBI swoops in and removes all the surplus dollars:
- RBI purchases dollars to increase its forex reserves.

In 2021-22, for instance, India's forex reserves went up by \$47.5 billion.

The RBI keeps monitoring the BoP every week and keeps intervening in such a manner which ensures that the rupee's exchange rate does not fluctuate too much.

#### **WHAT WILL BE THE EFFECT ON THE ECONOMY?**

- Since a large proportion of India's imports are dollar-denominated, these imports will get costlier.
- Costlier imports, in turn, will widen the trade deficit as well as the current account deficit, which, in turn, will put pressure on the exchange rate.
- On the exports front, however, it is less straightforward.  
For one, in bilateral trade, the rupee has become stronger than many currencies.

#### **WHAT SHOULD POLICYMAKERS DO?**

- The RBI (which is in charge of monetary policy) should focus on containing inflation, as it is legally mandated to do.
- The government (which is in charge of the fiscal policy) should contain its borrowings.
- Higher borrowings (fiscal deficit) by the government eat up domestic savings and force the rest of the economic agents to borrow from abroad.

### **34) India's Defence Exports have grown up 7x: PM**

*(GS3: Indigenization Of Technology)*

Our defence exports have increased seven times in the last eight years, informed the Prime Minister. We had achieved defence exports worth ₹13,000 crore and of this 70% was from the private sector.

#### **Steps taken by the Centre to boost defence production**

The govt has identified the Defence and Aerospace sector as a focus area for the 'Aatmanirbhar Bharat' or Self-Reliant India initiative.

The government has also announced 2 dedicated Corridors in the States of TN and UP to act as clusters of defence manufacturing that leverage existing infrastructure, and human capital.

In addition, a percentage of the capital outlay of the defence budget has been reserved for procurement from domestic industry.

Indigenization lists: On the domestic front, to boost indigenous manufacturing, the Government had issued two "positive indigenization lists" consisting of 209 items that cannot be imported.

Policy boost: The Defence Ministry has also issued a draft Defence Production & Export Promotion Policy 2020.

Measures announced to boost exports since 2014 include simplified defence industrial licensing, relaxation of export controls and grant of no-objection certificates.

#### **ISSUES:**

- Policy delays: In the past few years, the government has approved over 200 defence acquisition worth Rs 4 trillion, but most are still in relatively early stages of processing.
- Lack of Critical Technologies: Poor design capability in critical technologies, inadequate investment in R&D and the inability to manufacture major subsystems and components hamper the indigenous manufacturing.

- Long gestation: The creation of a manufacturing base is capital and technology-intensive and has a long gestation period. By that time newer technologies make products outdated.
- 'Unease' in doing business: An issue related to stringent labour laws, compliance burden and lack of skills, affects the development of indigenous manufacturing in defence.
- Lack of quality: The higher indigenization in few cases is largely attributed to the low-end technology.
- FDI Policy: The earlier FDI limit of 49% was not enough to enthuse global manufacturing houses to set up bases in India.

#### WAY FORWARD:

- Reducing import dependence: India was the world's second-largest arms importer from 2014-18, ceding the long-held tag as the largest importer to Saudi Arabia, says 2019 SIPRI report.
- Security Imperative: Indigenization in defence is critical to national security also. It keeps intact the technological expertise and encourages spin-off technologies and innovation that often stem from it.
- Economic boost: Indigenization in defence can help create a large industry which also includes small manufacturers.

### 35) A five point plan to boost renewable energy

(GS 3: Conservation, Environmental Pollution & Degradation)

#### FOSSIL FUELS ARE THE CAUSE OF THE CLIMATE CRISIS.

- Renewable energy can limit climate disruption and boost energy security. Renewables are the peace plan of the 21st century.
- But the battle for a rapid and just energy transition is not being fought on a level field.
- We must reduce emissions by 45 per cent by 2030 and reach net-zero emissions by mid-century. But current national commitments will lead to an increase of almost 14 per cent this decade.

**Fast-tracking :** We must cut the red tape that holds up solar and wind projects. We need fast-track approvals and more effort to modernise electricity grids.

**Shifting energy subsidies:** The world must shift energy subsidies from fossil fuels to protect vulnerable people from energy shocks and invest in a just transition to a sustainable future.

**Increase investment in renewables:** We need to triple investments in renewables. This includes multi-lateral development banks and development finance institutions, as well as commercial banks.

**Renewable energy technology as global good:** We must make renewable energy technology a global public good, including removing intellectual property barriers to technology transfer.

**Improve global access:** We must improve global access to supply chains for renewable energy technologies, components and raw materials. Shipping bottlenecks and supply-chain constraints, as well as higher costs for lithium and other battery metals, are hurting the deployment of such technologies and materials.

### 36) Challenges of Fiberization ahead of India's 5G Deployment:

(GS III: SCIENCE AND TECHNOLOGY)

India is preparing to auction off about 72 GHz of airwaves to rollout India's 5G Fiberization services.

- The infrastructure needs for such a rollout requires ,existing radio towers to be connect via optical fiber cables, Which could prove to be a huge challenge for the country.

#### **FIBERIZATION:**

- The process of connecting radio towers with each other via optical fiber cables is call fiberization.
- It helps provide full utilization of network capacity, and carry large amounts of data once 5G services are roll out.
- It will also aid in providing additional bandwidth and stronger backhaul support.
- The backhaul is a component of the larger transport that is responsible for carrying data across the network.
- It represents the part of the network that connects the core of the network to the edge.
- Thus, fiber backhaul remains an important part of transport across all telecoms.

#### **CHALLENGES OF TOWER FIBERISATION IN INDIA:**

- Fiber Deployment: With 5G, it will also be necessary to increase the density of mobile towers to provide better coverage to consumers and businesses. This calls for increase requirements for fiber deployment.
- To transition into 5G, India needs at least 16 times more fiber. Currently only 33% of the towers are fiberize
- Less Fiber per capita: The fiberkilometer (fkm) per capita in India is lower than other key India's fkm is just .09 compare to 1.35 in Japan, 1.34 in the U.S. and 1.3 in China.
- Ideally, a country needs 1.3 km of fiber per capita to ensure good
- There is also a need to increase data capacity in the fiberized towers. These tower sites which are connected via fiber are called fiber point of presence (POP)
- To reach the targeted level of fiberization, India requires about ₹•2 lakh crore of investment to help fiberize 70% towers.
- Demand Supply Mismatch: Government programs like Bharat Net and Smart Cities will further add to the demand of fiber deployment, necessitating a complete tower fiberization.
- To achieve that vision, cables must be laid at a speed of 1,251 km a day, around 3.6 times the current average speed of 350 km a day.
- Fiberization remains the Right of Way (RoW) rules: The rules aim to incorporate nominal one-time compensation and uniform procedure for establishment of Overground Telegraph Line (OTL) anywhere in the country.
- While all States/UTs are required to implement these rules, they are not in complete alignment and still require certain amendments to align.
- Several districts and local bodies have not agreed to the RoW policies as notified in those respective States.

Optical fibre is the technology associated with data transmission using light pulses travelling along with a long fibre which is usually made of plastic or glass. Metal wires are preferred for transmission in optical fibre communication as signals travel with fewer damages. Optical fibres are also unaffected by electromagnetic interference. The fibre optical cable uses the application of total internal reflection of light. The fibres are designed such that they facilitate the propagation of light along with the optical fibre depending on the requirement of power and distance of transmission

### **37) Private Sector Boost in India's Space Industry**

(Mains Paper 3: Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science)

Principal Scientific Adviser stated earlier this month that the government would soon come up with a new space policy that could initiate the rise of India's own "SpaceX-like Ventures".

#### **WHY IS DEVELOPMENT IN THE SPACE SECTOR IMPORTANT?**

What essentially needs to be remembered is that the strategic space avenue is an integration of the aerospace, IT hardware and telecom sectors.

Additionally, as to reliability, the World Economic Forum had stated that satellite communication can help connect 49% of the world's unconnected population.

• Satellite communication can **reach more remote areas** where conventional networks would require a heavy complimenting infrastructure.

Real-time tracking can also serve multiple purposes in defence.

Additionally, they can also serve as real-time monitoring and early-warning solutions against natural disasters such as earthquakes, tsunamis, floods, wildfires, mining etc.

By monitoring the long-term impact of climate change at regional, territorial, and national scales, governments would be able to devise more pragmatic and combative plans of action for farmers and dependent industries.

Satellites provide more accurate information on weather forecasts and assess (and record) long-term trends in the climate and habitability of a region.

#### WHY DOES INDIA MATTER IN THE GLOBAL SPACE-TECH MARKET?

- As per SpaceTech Analytics, India is the sixth-largest player in the industry internationally having 3.6% of the world's space-tech companies (as of 2021).
- The country's standout feature is its cost-effectiveness.
- India holds the distinction of being the first country to have reached the Mars' orbit in its first attempt and at \$75 million — way cheaper than Western standards.

#### FUTURE PROSPECTS:

- Almost 60-odd start-ups had registered with the Indian Space Research Organisation (ISRO) this year.
- A majority of them were dealing in projects related to space debris management.
- As space becomes more congested with satellites, the technology would thus help in managing 'space junk' (debris of old spacecraft and satellites).
- However, there is a deficit of finance in India. India's total budgetary allocation for FY2022-23 towards the Department of Space was ₹13,700 crore (\$172 million), which is very less compared to other nations.

#### HOW IS THE PRIVATE SECTOR'S INVOLVEMENT REGULATED IN INDIA?

- In June 2020, the Union government announced reforms in the space sector enabling more private players to provide end-to-end services.

INDIAN NATIONAL SPACE PROMOTION AND AUTHORISATION CENTRE (IN-SPACE)	NEWSPACE INDIA LIMITED (NSIL)
<ul style="list-style-type: none"><li>• It was mandated the task of promoting, authorising and licensing private players to carry out space activities.</li><li>• As an oversight and regulatory body, it is responsible for devising mechanisms to offer sharing of technology, expertise, and facilities free of cost to promote non-government private entities (NGPEs).</li><li>• IN-SPAcE's Monitoring and Promotion Directorate oversees NGPE's activities as per prescribed regulations and reports back in case any corrective actions or resolutions are required.</li></ul>	<ul style="list-style-type: none"><li>• It is ISRO's new Commercial Arm. Capital: NSIL is provided an authorised share capital worth Rs.100 crore and initial paid up capital of Rs.10 crore.</li><li>• Objective: NSIL's main objective is to scale up industry participation in Indian space programmes.</li><li>• It is a completely Govt. owned Undertaking / CPSE. It is under the administrative control of the Department of Space (DOS).</li></ul>



### 38) Backsliding on climate action

(Mains Paper 3: Conservation, Environmental Pollution & Degradation, Eia)

Europe is staring at a recession and its appetite for climate action is waning.

#### **DEVELOPED COUNTRIES MOVING AWAY FROM COMMITMENT**

- Countries in Europe led by Germany, Austria and the Netherlands are cranking up their coal plants again.
- Fossil fuels are making a comeback and countries are rejecting the European Union (EU)'s plan to reduce natural gas consumption by 15%. Dutch, Polish and other European farmers are protesting against emission cuts from agriculture.
- Fossil fuels are making a quiet comeback, since the strength of the U.S. is its oil and gas industry.
- That is why we have just witnessed a 're-calibration' of U.S. policy towards the Gulf.
- Coal, oil and gas are not going anywhere in the developed world; they are, in fact, making a comeback.
- The West had rushed to draw down on fossil fuels even before technology for renewables were in place.

#### **GLOBAL PEAKING ISSUE**

- Article 4 of the Paris Agreement defines 'Global Peaking' thus: "In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties."
- The developed countries, given their historical emissions, will have to peak first.
- That's why the reference is to 'global peaking' and not 'individual peaking'.
- From this, it logically follows that when developing country parties peak later than developed countries, they will also achieve net zero later than developed countries.
- Consequently, it is the logical conclusion of the Article 4 of the Paris Agreement that when we consider net zero, we should only consider 'global net zero' and not 'individual net zero' for 2050.
- The statement calls on developed countries to do a net negative on mitigation by 2050 rather than just "net zero", if they are serious about fighting climate change.
- In effect, the West needs to do a net minus and not just net zero.
- Thanks to the efforts of India, the phrase used in the 2021 summit-level declarations at both G-20 and Quad is 'global net zero'. We need to build on this understanding.
- It is time for all developing countries, especially the small island developing states, to make sure that the developed world doesn't backslide on its commitments on mitigation yet again.

#### **WAY FORWARD FOR DEVELOPING COUNTRIES**

- With countries of the developed world almost sure to renege on their 2030 Paris Agreement commitments, countries of the developing world must do everything to hold the countries of the developed world to their commitments.
- The Western nations have already started reinterpreting the Paris Agreement and look to downgrade their commitments.
- The concept of net zero is being cleverly misinterpreted.
- To bring this to the attention of the Global South, India, China and eight other countries from Africa, Asia and Latin America made a cross-regional statement on 'global net zero' on June 7 at the UN on World Environment Day.

### 39) Power Tariff Revisions and the State of DISCOMs

(GS3 Infra : Energy)

The Tangedco filed a general retail power tariff revision petition proposing to hike power tariffs by 10% to 35%.

### REASONS BEHIND THE TARIFF REVISION DEMAND:

- Mounting losses
- Outstanding loans
- The consequent increase in interest burden
- Case in point: Even after joining the Ujwal DISCOM Assurance Yojana (UDAY) — a scheme meant for improving the health of state-owned electricity distribution companies (DISCOM)—in January 2017, Tamil Nadu could not bring down the gap between the Average Cost of Supply (ACS) and the Average Revenue Realised (ARR) to nil.

### WHAT IS HAPPENING WITH THE DISCOMS ACROSS THE COUNTRY?

- According to Niti Aayog's report of August 2021, most power DISCOMs incur losses every year — the total loss was estimated to be ₹90,000 crore in the financial year 2021.
- Due to these accumulated losses, DISCOMs were unable to pay for generators on time — as of March 2021, an amount of ₹67,917 crore was overdue.
- To help these DISCOMs, the Centre in May 2020, announced a Liquidity Infusion Scheme (Aatmanirbhar Bharat Abhiyan), under which loans of ₹1,35,497 crore have been sanctioned. As of December 31, 2021, a total of ₹1.03 lakh crore has been disbursed.
- Despite the Centre's prescription for annual or periodical revision of retail power tariff, States have found the exercise painful, as the parties in power in the States link the process to their prospects at the time of Assembly or Lok Sabha elections.
- The general approach of many parties is to use electricity as a tool for their political agenda and make promises to allure people despite knowing that such assurances, if implemented, are not sustainable in the long run.
- A common feature of the power distribution policies of the States is to provide free or heavily subsidised supply to agriculture. The connections for the farm sector are unmetered
- DisComs cash flow is disrupted due to dues that are payable to them. These dues are of three types.
  - ✓ **Improper Tariff fixation by regulators:** Regulators themselves have failed to fix cost-reflective tariffs thus creating Regulatory Assets, which are to be recovered through future tariff hikes.
  - ✓ **Pending Subsidies:** Second, about a seventh of DisCom cost structures is meant to be covered through explicit subsidies by State governments. Cumulative unpaid subsidies, with modest carrying costs, make DisComs poorer by over ₹70,000 crore just over the last 10 years.
  - ✓ **Consumer Bills pending:** Third, consumers owed DisComs over ₹1.8 lakh crore in FY 2018-19, booked as trade receivables.

### WAY AHEAD:

- More Stimulus: There is a need a much larger liquidity infusion so that the entire electricity chain will not collapse
- Working on AT&C losses is important, but will not be sufficient. We need a complete overhaul of the regulation of electricity companies and their deliverables.
- Rationalisation of subsidies whereby doling out of free electricity can be eliminated to those who do not deserve such support.
- Segregation of feeders has been suggested as an option to arrive at the accurate consumption of the farm sector so that the disproportionate quantum of consumption is not attributed to agriculturists in the absence of meters. Gujarat is cited as a success story in this regard.
- Proper Regulation: Regulators must allow cost-covering tariffs.

### 40) The poor state of India's fiscal federalism

(GS3: Indian economy, GS 2 – Issues and challenges pertaining to the federal structure.)

A degree of centralisation in fiscal power was required to address the concerns of socio-economic and regional disparities after the Independence. This asymmetric fiscal federalism was accelerated and mutually reinforced in recent times.

#### **WHAT IS THE PRESENT STRUCTURE OF INDIA'S FISCAL FEDERALISM?**

- India's fiscal transfer worked through two pillars, the Planning Commission and the Finance Commission. Ever since the abolition of the Planning Commission, the Finance Commission became the major means of fiscal transfer.
- The finance commission broadened its scope of sharing all taxes since 2000 from its original design of just two taxes – income tax and Union excise duties.
- The ability of States to finance current expenditures from their own revenues has declined from 69% in 1955-56 to less than 38% in 2019-20. They still spend 60% of the expenditure in the country — 85% on education and 82% on health.

#### **WHAT ARE THE RECENT INSTANCES THAT HAMPER FISCAL FEDERALISM?**

- States lost their capacity to generate revenue by surrendering their rights after the Goods and Services Tax (GST) regime,
- The Fourteenth Finance Commission increased share of devolution from 32% to 42%. But, the increasing non-divisible pool in the Centre's gross tax revenues and reduction in the divisible pool of resources hampers the revenue,
- States are forced to pay differential interest — about 10% against 7% — by the Union for market borrowings.
- The issue of centrally sponsored schemes: State's expenditure pattern was distorted by the Union's intrusion, mainly through its centrally sponsored schemes (CSSs). This is because,
  - a) There are 131 centrally sponsored schemes. States are required to share a part of the cost.
  - b) CSSs are driven by the one-size-fits-all approach and are given precedence over State schemes. Thus undermining the electorally mandated democratic politics of States,
  - c) The schemes conceived by States have proved to be beneficial to the people and have contributed to social development, and
  - d) Many State schemes are adopted at the national level, For instance, the employment guarantee in Maharashtra, the noon meals in Tamil Nadu, local governance in Karnataka and Kerala, and school education in Himachal Pradesh.

#### **WHAT ARE THE IMPACTS OF THE CENTRALISATION OF FISCAL POLICY?**

- Heavy centralisation made India, one of the lowest tax bases built on a regressive indirect taxation system in the world. India has simply failed to tax the following,
  - a) Agriculture income,
  - b) Reduced corporate tax to boost the economy,
  - c) India does not have any wealth tax,
  - d) Indirect tax still accounts for about 56% of total taxes.
- Overall, India's fiscal federalism driven by political centralisation has deepened socio-economic inequality and has not altered inter-state disparities either.

#### 41) The making of the digital pharmacist

(Mains Paper 3: Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science)

A draft law to replace the 1940 Drugs and Cosmetics Act with a Drugs, Medical Devices and Cosmetics Bill 2022 was uploaded by the Union health ministry in early July, seeking public comments and objections.

##### **MAJOR PROVISIONS OF THE BILL:**

- Like all online shopping, the consumer gets the advantage of discounts and the comfort of shopping from home.
- Storage condition: The first relates to climatic conditions, which require medicines to be stored at below 30 degrees Celsius and 70 per cent relative humidity — unattainable in most of India.
- It can mandate establishing a back-end brick and mortar store for drug supply having good storage conditions.
- Compliance with regal provision: The second advantage of e-commerce could be fulfilling a legal requirement — providing a bill to the consumer and retaining one copy bearing the batch numbers and expiry dates of the drugs.
- In addition, the practice of accessing prescription drugs over-the-counter would reduce.
- In the case of e-commerce, registration of a pharmacy can require enrollment with the central and state drug control organisations and the practice of uploading a prescription from a registered medical practitioner can be enforced.
- A greater focus on medical devices: The draft law also proposes according a greater focus on medical devices, which include thousands of engineered apparatuses like stents, joint implants, pacemakers, catheters, etc, which require quality regulation.
- Provision for advisory board: Rules for medical devices were notified in 2017 but now it is proposed to establish a statutory Medical Device Technical Advisory Board, with experts from the fields of atomic energy, science and technology, electronics, and related fields like biomedical technology to guide the process.

##### **ISSUES NOT ADDRESSED IN THE BILL**

- Mismanagement of trade: What the Bill does not address is the need to stop the continued mismanagement of the wholesale and retail drugs trade in India.
- Requirements for drug license not changed: Rule 64 (2) of the Drugs and Cosmetics Rules 1945 lays down that a wholesale drug licence can be given to a qualified pharmacist or one who has passed the matriculation examination or its equivalent or a graduate with one year's experience in dealing with drug sale.
- This is a relic from 80 years ago.
- When the country is reported to have over 7,00,000 pharmacists, this anachronism must be discarded.
- It is essential to introduce a binding and enabling provision to only licence qualified pharmacists and put the safety of millions of citizens before the self-preservation of a few thousand wholesalers and stockists.

There is need for ensuring digitisation of procurement, inventory control and accountability for dispensing drugs into a digital trail.

## Prelims Booster

### 1.7.22

1) **POEM:** The PSLV Orbital Experimental Module is a platform that will help perform in-orbit experiments using the final, and otherwise discarded, stage of ISRO's workhorse rocket, PSLV.

- The PSLV is a four-stage rocket where the first three spent stages fall back into the ocean, and the final stage (PS4) — after launching the satellite into orbit — ends up as space junk.
- It is the first time that the PS4 stage would orbit the earth as a stabilised platform,
- POEM is carrying six payloads, including two from Indian space start-ups Digantara and Dhruva Space.

2) **PSLV-C53:** The Indian Space Research Organisation (Isro) on Thursday successfully launched three Singaporean satellites in a commercial mission of the New Space India Limited from Sriharikota.

- The launch vehicle flew in the core-alone configuration where no strap-on motors are used other than the four main engine stages.
- The main payload of the mission was a 365 kg Singaporean DS-EO satellite, which is an electro-optic, earth-observation satellite capable of providing full-colour images for land classification and disaster-relief operations.
- The 155 kg NeuSAR satellite is its first small commercial satellite capable of providing images in the day or at night under all weather conditions.
- The third satellite was Nanyang Technical University's 2.8kg Scoob-1, the first in the student satellite series for giving hands-on training for the university's satellite research centre.

3) **EODB:** It is a joint initiative by the Department for Promotion of Industry and Internal Trade (DPIIT) and the World Bank to improve the overall business environment in the States.

- Ranking of all the States and Union Territories is done, based on the implementation of BRAP by them.
- Business Reform Action Plan (BRAP): These reforms cover 12 business regulatory areas such as Access to Information, Single Window System, Labour, Environment, etc.
- Andhra Pradesh, Gujarat and Telangana are among the seven states categorised as top achievers

4) **Sundar Committee:** was set up on Road safety and Traffic Management

- The Committee decided to address road safety covering all types of roads including rural roads, district roads, state highways and national highways as about 60 to 65% of the fatalities occurred on roads other than the national highways

5) **Snake island:** Russian troops have abandoned their positions on a captured Ukrainian island in the Black Sea, a major setback to their invasion effort that weakens their blockade of Ukraine's ports.

- Snake or Serpent Island, called Zmiinyi in Ukrainian, is a rocky outcrop that extends less than 700 metres from end to end, and is often described as being "X-shaped". It is located 35 km from the coast, to the east of the mouth of the Danube

Parts of the Black Sea around Snake Island are believed to hold significant oil and gas reserves.

### 4.7.22

1) **Ramagundam solar plant:** India's largest floating solar power plant was made fully operational by NTPC at Ramagundam, Telangana.

- The capacity of solar plant is 100 MW.
- The floating platform comprises a transformer, inverter and a HT breaker.



- The presence of floating solar panels will reduce evaporation rate from water bodies. Thus, it will serve the purpose of water conservation.

2) **Eco-Sensitive Zones:** Ecologically Fragile Areas are areas within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries.

- ESZs are notified by MoEFCC, Government of India under Environment Protection Act 1986.
- In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, even area beyond 10 km width can also be included in the eco-sensitive zone.
- The basic aim is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

3) **Kai ant chutney:** For Odisha's Mayurbhanj tribes, dishes made of weaver ants offer a cure to many illnesses and are known to boost the immune system and keep diseases at bay

- In Odisha, scientists are now fine-tuning their research to make a presentation for the geographical indications (GI) registry of Kai Chutney
- The tribal healers also prepare medicinal oil by dipping the collected Kais in pure mustard oil.
- Kais are bio-control agents. They are aggressive and prey on most arthropods entering their territory. Due to their predatory habit, Kais are recognized as biological control agents in tropical crops as they are able to protect a variety of crops against many different insect pests.

4) **National Investigation Agency (NIA):** It is a central agency to investigate and prosecute offences:

- affecting the sovereignty, security and integrity of India, security of State, friendly relations with foreign States.
- against atomic and nuclear facilities.
- smuggling in High-Quality Counterfeit Indian Currency.
- It is also the **Central Counter Terrorism Law Enforcement Agency**. It is empowered to deal with terror related crimes across states without special permission from the states.
- Established under the National Investigation Agency Act 2008. Works under the Ministry of Home Affairs.
- It was introduced by the then home minister in the wake of the 26/11 Mumbai terrorist attacks and was passed in Parliament with very little opposition.

5) **Alluri Sitarama Raju** was an Indian revolutionary who waged an armed campaign against British colonial rule in India. He became a monk at the age of 18.

- Born in present-day Andhra Pradesh, he became involved in anti-British activities in response to the 1882 Madras Forest Act, which effectively restricted the free movement of Adivasis (tribal communities) in their forest habitats and prevented them from practicing a traditional form of agriculture known as podu (shifting cultivation).
- Rising discontent towards the British led to the Rampa Rebellion/Manyam Rebellion of 1922, in which he played a major part as a leader.
- He was nicknamed "Manyam Veerudu" (Hero of the Jungle) by local villagers for his heroic exploits.

### 5.7.22

1) **Large Hadron Collider:** It is the world's largest and most powerful particle accelerator. It was constructed by the European Organization for Nuclear Research (CERN) between 1998 and 2008 in partnership with scientists and engineers from over 100 countries.

- The objective of the LHC was to help physicists test predictions of various theories of particle physics. This included measuring the properties of the Higgs Boson and also searching for the big family of new particles as predicted by supersymmetric theories.
- It is located underneath the earth's surface at a depth of 175 metres below the border between France and Switzerland near Geneva

- Its first research took place in March 2010. It discovered the elusive Higgs boson in July 2012.

2) **Higgs field:** It is the invisible energy field that exists throughout the universe. It consists of Higgs boson particles (God particles).

- When the particles scattered from Big-bang crosses the Higgs field, the former attains mass and slow down as their weight increases.
- If Higgs didn't provide mass to particles, then all particles float in the universe with the speed of light and there will be no gravity and no life.
- More interaction of particles with Higgs fields gives heavier mass to the particles = they settle down at one place = creation of stars, planets etc.
- The process of giving mass to a particle is known as Higgs effect.
- Higgs-boson particles are named as God Particles as they are the fundamental particles that provide mass to other particles.

3) **UK model of Astro Carta:** The plan aims to establish a global commercial framework for insurability, licensing and regulation of commercial satellites.

- based on **the Artemis Accord** model for sustainable space exploration, the UK Space Sustainability Plan outlines four primary elements:
- reviewing the regulatory framework for UK orbital activity;
- working with organizations such as the G-7 and the United Nations to emphasize international engagement on space sustainability;
- To try and develop safety and quality-related metrics to measure the sustainability of activities; and,
- to induce additional funding of \$6.1 million on active debris removal.

4) **United Nations Committee on the Peaceful Uses of Outer Space:** The UNCOPUOS was established in 1958 as an ad hoc committee of the UN (later made permanent in 1959) with UN Office for Outer Space Affairs (UNOOSA) as its secretariat.

- Its main task is to review and foster international cooperation in the peaceful uses of outer space, as well as to consider legal issues arising from the exploration of outer space.
- The Committee currently has 95 members who meet annually in Vienna, Austria at the Vienna International Centre.
- It adopted a set of 21 voluntary, non-binding guidelines for long term sustainability of outer space activities.

5) **Eastern Rajasthan Canal Project:** It aims to harvest surplus water available during rainy season in rivers in Southern Rajasthan such as Chambal and its tributaries, including Kunnu, Parvati, Kalisindh, and use this water in south-eastern districts of the state, where there is scarcity of water for drinking and irrigation.

- ERCP is planned to meet drinking, industrial water and irrigation needs of the southern and south eastern Rajasthan, for humans and Livestock till the year 2051.
- The Chief Minister of Rajasthan has demanded the national project status for the Eastern Rajasthan Canal Project (ERCP).

### **6.7.22**

1) **Nairobi flies:** also called Kenyan flies or dragon bugs, are small, beetle-like insects that belong to two species, *Paederus eximius* and *Paederus sabaeus*. They are orange and black in colour, and thrive in areas with high rainfall, as has been witnessed in Sikkim in the past few weeks.

- Like most insects, the beetles are attracted by bright light.
- These flies do not bite, but if disturbed while sitting on anyone's skin, they release a potent acidic substance that causes burns.

- This substance is called pederin, and can cause irritation if it comes in contact with the skin, leading to lesions or unusual marks or colouring on the skin.

2) **Banni Grassland**: it is situated near the Great Rann of Kutch in Gujarat.

- It is considered to be the largest Grassland in Asia.
- Formation: The land here was formed from the sediments that were deposited by the Indus and other rivers over thousands of years.
- Ecosystem: Two ecosystems, wetlands and grasslands are juxtaposed in Banni.
- The vegetation in Banni is sparse and highly dependent on rainfall. It is dominated by low-growing forbs and graminoids, many of which are halophiles (salt-tolerant), as well as scattered tree cover and scrub.

3) **Bhagyalakshmi temple**: it is a small temple dedicated to Goddess Lakshmi, adjacent to the southeast minar of Charminar. Made of bamboo poles and tarpaulins, it has a tin roof, and the southeast minar forms its back wall.

- There is no definitive version on how and when exactly it came up, but it has been there since at least the 1960s. Secunderabad MP G Kishan Reddy claimed that the temple predates Charminar, whose construction was started in 1591.
- Sources in the Archaeological Survey of India said the temple encroaches on the protective perimeter of Charminar.

4) **Planned Obsolescence**: describes a strategy of deliberately ensuring that the current version of a given product will become out of date or useless within a known time period.

- It is a trick used by companies to turn a customer into a repeat customer, with or without their knowledge.
- Eg: In terms of hardware, the companies use inferior parts designed to decrease the life of a product to 2-3 years.

5) **TiHAN Testbed for Autonomous Navigation**: is a multidisciplinary initiative of the IIT-Hyderabad.

- It aims to make India a global player in the futuristic "Smart Mobility technology".
- TiHAN is developing and deploying a real-time Cyber Physical Systems (CPS) utilising autonomous UAVs and ground/surface vehicles for many application sectors of the national importance of this decade.
- It is a first of its kind futuristic autonomous navigation facility to develop unmanned terrestrial & aerial vehicles.

### 7.7.22

1) **Verstehen**: Verstehen is the interpretative theory given by Max Weber, it is the method to understand why one behaving and reacting the way they are in any situation. The word derived from the German word meaning 'to understand'

- It refers to understanding the meaning of action from the actor's point of view. It is entering into the shoes of the other, and adopting this research stance requires treating the actor as a subject, rather than an object of your observations.

2) **Critical minerals**: are elements that are the building blocks of essential modern-day technologies, and are at risk of supply chain disruptions.

- These minerals are now used everywhere from making mobile phones, computers to

#### CRITICAL MINERALS ARE EVERYWHERE



Lithium is used to create batteries.



Potash is used in fertilizer.



Helium is used in MRIs.



Indium is used to make LCD screens.



Uranium is used in radiation therapy.



Strontium is used in fireworks.

batteries, electric vehicles and green technologies like solar panels and wind turbines.

- Based on their individual needs and strategic considerations, different countries create their own lists.
- Australia has confirmed that it would commit A\$5.8 million to the three-year India-Australia Critical Minerals Investment Partnership”.

3) **Section 69A of the Information Technology (IT) Act, 2000:** enables the Centre to ask any agency of the government, or any intermediary, to block access to the public of any information generated, transmitted, received or stored or hosted on any computer resource.

- Any such request for blocking access must be based on reasons given in writing.
- Twitter on Tuesday challenged the Indian government in court over its recent orders to take down some content on the social media platform.

4) **Indigenous’ status for five Muslim communities:** The Assam Cabinet Tuesday approved the identification of five Assamese Muslim sub-groups — Goriyas, Moriyas, Julhas, Deshis, and Syeds — as “indigenous” Assamese Muslim communities.

- While the Deshis are 13th-century converts from indigenous communities such as Koch Rajbongshi and Mech, the Goriyas and Moriyas trace their lineage to converts as well as soldiers, artisans, etc. who came to the region during the Ahom rule.

5) **Price Deficiency Payment System:** Under this system, the plan is to compensate farmers by paying them the difference between the government-prescribed Minimum Support Price and the actual market price for certain crops. For crops such as wheat and rice, the MSP announcements will continue.

- For other selective crops, the price deficiency payments will be done

### **8.7.22**

1) **Derecho:** is “a widespread, long-lived, straight-line windstorm” that is associated with a “band of rapidly moving showers or thunderstorms”. The name comes from the Spanish word ‘la derecha’ which means ‘straight’.

- Straight-line storms are those in which thunderstorm winds have no rotation unlike a tornado
- Being a warm-weather phenomenon, a derecho generally – not always – occurs during summertime beginning May, with most hitting in June and July. They are rare.

2) **Sabizabulin:** A newly published phase-3 study for the drug sabizabulin, initially developed to fight cancer, has shown that it cuts risk of death by about one-fourth in patients hospitalized with moderate to severe Covid-19

- An orally bioavailable, small molecule tubulin inhibitor, with potential antineoplastic, antiviral and anti-inflammatory activities.

3) **Justice Rohini Commission:** The commission was set up on October 2, 2017 under Article 340 of the Constitution. It was tasked with sub-categorisation of the Other Backward Classes (OBCs) and equitable distribution of benefits reserved for them.

- The argument for sub-categorisation — or creating categories within OBCs for reservation — is that it would ensure “equitable distribution” of representation among all OBC communities.

4) **Blackout challenge:** It is a challenge in which people are encouraged to choke themselves until they become unconscious due to the lack of oxygen.

- TikTok, the video social media platform, is being sued in the United States by the parents of two young girls who died after taking part in a viral 'blackout challenge' in 2021.

5) **Dragon fruit:** In India, dragon fruit is also referred to as Kamalam and super fruit due to its health benefits.

- It is hardy and grows in diverse climatic conditions with varied soils, especially in the semi-arid and arid regions of India.
- It prefers slightly acidic soil and can tolerate some salts in soil too.
- It is a rich source of vitamins and minerals.
- The low maintenance and high profitability of dragon fruits has attracted the farming community throughout India.
- This has led to a steep increase in dragon fruit cultivation in Maharashtra, Karnataka, Andhra Pradesh, West Bengal, Telangana, Tamil Nadu, Odisha, Gujarat and the Andaman and Nicobar Islands, as well as in many north eastern states

### 11.7.22

1) **Cloudbursts:** are short-duration, intense rainfall events over a small area.

- It is a weather phenomenon with unexpected precipitation exceeding 100mm/h over a geographical region of approximately 20-30 square km.
- In the Indian Subcontinent, it generally occurs when a monsoon cloud drifts northwards, from the Bay of Bengal or the Arabian Sea across the plains then on to the Himalaya that sometimes brings 75 millimetres of rain per hour.
- Consequences of Cloudbursts: Flash floods, Landslides, Mudflows, Land caving.

2) **Digital Nomad Visas:** As Indonesia deals with the economic impacts of Covid-19, the country has announced "Digital Nomad Visas" for travellers, to attract more foreign tourists.

- Digital Nomads are people who work remotely while travelling to different places and spending their earned income in the country they are travelling to.
- The Digital Nomad Visa would allow remote workers to stay in Indonesia, including Bali, tax-free.

3) **A kill switch:** in an IT context is a mechanism used to shut down or disable a device or program.

- The purpose of a kill switch is usually to prevent theft of a machine or data or shut down machinery in an emergency.

4) **Uber Files:** are a leak of 182 gigabytes of data that were obtained by The Guardian newspaper from an anonymous source and shared with the International Consortium of Investigative Journalists.

- The Uber Files show how the ride-hailing start-up begun by Travis Kalanick in San Francisco in 2010 became a global behemoth by harnessing technology, working around laws, and using aggressive lobbying tactics to curry favour with governments during the period of its dramatic expansion.



5) **Tehrik-i-Taliban Pakistan or TTP:** is an Islamic terror organisation formed to resist against Pakistan government. It is the umbrella organisation for numerous militant groups operating along the Afghan-Pakistan border.

- Although Pakistani military actions, U.S. drone warfare, and factional infighting led to the TTP's decline from 2014 to 2018, the militant group has been experiencing a strong resurgence since the Afghan Taliban and U.S. government signed a peace deal in February 2020

### 12.7.22

1) **World Population Prospects (WPP):** The Population Division of the UN has been publishing the WPP in a biennial cycle since 1951.

- Each revision of the WPP provides a historical time series of population indicators starting in 1950.
- According to the 2022, India is projected to surpass China as the world's most populous country in 2023. It also projected the world's population to reach 8 billion on November 15, 2022.

2) **Dark Matter:** it is an unknown matter which is not visible.

- The reason behind its invisibility is, it does not absorb, reflect or emit light. This makes it extremely hard to spot.
- Dark matter does not interact with the electromagnetic force thereby making it hard to spot.
- The gravity of the dark matter is an important prerequisite for permitting the universe to hold on to the important elements that gave rise to life and habitable planets like earth
- Dark Matter is particles that cannot be seen through a telescope, but they can be located because of its gravitational effect on its surroundings and the X-ray it emits.

3) **LUX-Zeplin:** a next generation dark matter experiment located at the Sanford Underground Research Facility, US.

- The Large Underground Xenon experiment (LUX) aimed to directly detect weakly interacting massive particle (WIMP) dark matter interactions with ordinary matter on Earth.
- As of today this is the most sensitive dark matter detector in the world. To give an idea of the degree of difficulty in measuring evidence of a dark particle, it is said that the chamber of this LZ detector, can contain only one gram of dust if it is to detect a dark matter particle. This is the extent to which researchers have to go to rule out unwanted signals coming from other entities.

4) **New QUAD in west Asia:** The first summit this week of the forum I2U2 – which brings together India, Israel, the United Arab Emirates and the United States marks the west Asian QUAD coming together.

- The virtual summit between the leaders of the four countries is expected to take place on Thursday during Joe Biden's visit to Israel.

5) **Influencer Tax:** The Influencer Tax is a new tax on social media influencers.

- Introduced by the Central Board of Direct Taxes (CBDT), this tax took effect from July 1, 2022.
- Under the new rule, social media influencers will have to pay 10% tax deducted at source (TDS) on freebies or any other form of payment made in kind, if the value of the product is above ₹20,000.
- However, they will be exempted from the tax if they return the product to the respective brands.

### 13.7.22

1) **James Webb Space Telescope (JWST):** It is the most powerful infrared telescope of National Aeronautics and Space Administration (NASA).

- It is also considered a successor of the Hubble Telescope and will extend and complement its discoveries.
- The telescope is the result of an international collaboration between NASA, the European Space Agency (ESA) and the Canadian Space Agency.

- Webb will reveal new and unexpected discoveries, and help humanity understand the origins of the universe and our place in it. The telescope will study the atmospheres of a wide diversity of exoplanets.
- It is currently at a point in space known as the Sun-Earth L2 Lagrange point,

2) **SMACS 0723:** NASA's James Webb Space Telescope has delivered the deepest and sharpest infrared image of the distant universe so far.

- This image shows the galaxy cluster SMACS 0723 as it appeared 4.6 billion years ago.
- The combined mass of the galaxy cluster acts as a gravitational lens, magnifying much more distant galaxies behind it.
- NASA will release more first images from the James Webb Space Telescope. The list of images will include Carina Nebula, WASP-96 b (spectrum data), Southern Ring Nebula and Stephen's Quintet.

3) **Cosmic cliffs:** Webb revealed the clearest image to date of the early universe, going back 13 billion years. The latest tranche included the "mountains" and "valleys" of a star-forming region called NGC 3324 in the Carina Nebula, dubbed the "Cosmic Cliffs", 7,600 light years away.

4) **Youth in India 2022' report:** released by the Ministry of Statistics and Programme Implementation.

- States such as Kerala, Tamil Nadu and Himachal Pradesh are projected to see a higher elderly population than the youth by 2036.
- this report said youth in the age group of 15-29 years comprise 27.2 per cent of the population for 2021, which is expected to decrease to 22.7 by 2036.
- The proportion of the population aged under 15 years is projected to decline, the elderly in the population is expected to increase, the report said. "The youth population is expected to increase initially but will start to decline in the latter half of 2011-2036 period"

5) **Bail:** is the conditional/provisional release of a person held under legal custody (in matters which are yet to be pronounced by the Court), by undertaking a promise to appear in the Court as and when required.

- Regular Bail: It is a direction given by the Court (any Court within the country) to release a person who is already under arrest and kept in police custody.
- Interim Bail: Bail granted for a temporary and short period by the Court till the application seeking Anticipatory Bail or Regular Bail is pending before a Court.
- Anticipatory Bail: A direction issued to release a person on Bail even before the person is arrested. In this situation, there is apprehension of arrest and the person is not arrested before the Bail is granted.

## **14.7.22**

1) **Cervavac:** dev by Serum Institute of India (SII), it is India's first quadrivalent human papillomavirus vaccine (qHPV) vaccine, and intended to protect women against cervical cancer.

- The vaccine is based on VLP (virus like particles), similar to the hepatitis B vaccine, and provides protection by generating antibodies against the HPV virus's L1 protein.
- Worldwide, cervical cancer is the second most common cancer type and the second most common cause of cancer death in women of reproductive age (15–44). India accounts for about a fifth of the global burden

2) **Global Gender Gap index:** "benchmarks the current state and evolution of gender parity across four key dimensions (Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment)".

- According to the WEF it is the longest-standing index, which tracks progress towards closing these gaps over time since its inception in 2006.
- GGG index provides scores between 0 and 1, where 1 shows full gender parity and 0 is complete imparity.

- India also ranks poorly among its neighbours and is behind Bangladesh (71), Nepal (96), Sri Lanka (110), Maldives (117) and Bhutan (126). Only Iran (143), Pakistan (145) and Afghanistan (146) perform worse than India in south Asia.
- Although no country achieved full gender parity, the top 10 economies closed at least 80% of their gender gaps, with Iceland (90.8%) leading the global ranking. Iceland was the only economy to have closed more than 90% of its gender gap.

3) **Gravitational Lensing:** The phenomenon of gravitational lensing occurs when a huge amount of matter, such as a massive galaxy, cluster of galaxies or a black hole, creates a gravitational field that distorts and magnifies the light from objects behind it.

- Gravitational lensing is based on Einstein's theory of general relativity (Mass bend light).
- The more massive the object, the stronger its gravitational field and hence the greater the bending of light rays. In effect, gravitational lenses act like natural cosmic telescopes.
- The effect allows researchers to study the details of early galaxies too far away to be seen otherwise with even the most powerful space telescopes.

4) **WASP-96b:** it is a gas giant exoplanet in the constellation Phoenix.

- Pictures released from the James webb telescope confirmed the presence of water, as well as providing evidence for "clouds and hazes" within the planet's atmosphere. Prior to this discovery, WASP-96b was thought to be free of clouds.
- It was discovered in 2013 by the Wide Angle Search for Planets (WASP).

5) **National Emblem of India:** On 26 January 1950, a representation of the Lion Capital of Ashoka placed above the motto, Satyameva Jayate, was adopted as the State Emblem of India.

- The emblem is an adaptation of the Lion Capital of Ashoka, an ancient sculpture dating back to 280 BCE during the reign of the Maurya Empire.
- It was originally made of Chunar sandstone.
- The statue is a three-dimensional emblem showing four lions.

### 18.6.22

1) **INS SINDHUDHVAJ:** The Navy's Kilo-class submarine, INS Sindhudhvaj, was decommissioned from service on Saturday at Visakhapatnam after 35 years in service. With this, the Navy now has 15 conventional submarines in service.

- It successfully undertook mating and personnel transfer with Deep Submergence Rescue Vessel and was the only submarine to be awarded Chief of Naval Staff (CNS) rolling trophy for Innovation
- Commissioned into the Navy in June 1987, Sindhudhvaj, was one of the 10 Kilo-class submarines India acquired from Russia between 1986 and 2000.

2) **'Bonalu':** is a Hindu Festival where Goddess Mahakali is worshiped.

- It is the state festival of Telangana. It is celebrated in parts of Telangana and Andhra Pradesh.
- The Word Bonalu came from "Bhojanalu" meaning food, which is offered to the goddess during festival time.

3) **Monkeypox:** It is a viral zoonotic disease (transmission from animals to humans) and is identified as a pox-like disease among monkeys hence it is named Monkeypox. It is endemic to Nigeria.

- It is caused by monkeypox virus, a member of the Orthopoxvirus genus in the family Poxviridae.
- The natural host of the virus remains undefined. But the disease has been reported in many animals.
- There is no specific treatment or vaccine available for Monkeypox infection.

4) **Grey Water:** Grey water is the category of waste water that is not contaminated with faecal matter or urine.

- This broad category includes post-use water from most domestic or household purposes like bathing, washing dishes, laundry, etc.
- Grey water can contain harmful bacteria and even faecal matter that contaminates soil and groundwater.

#### 5) **National Institutional Ranking Framework 2022:** launched by Ministry of Education

- The NIRF was approved by the Ministry of Human Resource Development (MHRD) and launched in 2015.
- It ranks colleges, universities and research institutions and also provides an overall ranking of all of them combined.
- Institutes are also ranked across 7 subject domains, namely engineering, management, pharmacy, law, medical, architecture and dental.
- Indian Institute of Technology, Madras (IIT-M) is the top higher educational institute in the country followed by the Indian Institute of Science (IISc), Bengaluru, and IIT Bombay.

### 19.7.22

1) **Sanjay Agarwal committee:** centre has constituted a high-powered panel under the chairmanship of former agriculture secretary Sanjay Agarwal to make the minimum support price (MSP) mechanism more effective and transparent

2) **Yield inversion:** A yield curve illustrates the interest rates on bonds of increasing maturities.

- inversion happens when the yield on a longer tenure bond becomes less than the yield for a shorter tenure bond
- A yield inversion typically portends a recession.
- An inverted yield curve shows that investors expect the future growth to fall sharply; in other words, the demand for money would be much lower than what it is today and hence the yields are also lower.

3) **Soft landing:** When a central bank is successful in slowing down the economy without bringing about a recession, it is called a soft-landing — that is, no one gets hurt. But when the actions of the central bank bring about a recession, it is called a hard-landing.

- A soft landing is the goal of a central bank when it seeks to raise interest rates just enough to stop an economy from overheating and experiencing high inflation, without causing a severe downturn.
- Given the massive gap between the current US inflation rate — over 9% — and the Fed's target inflation rate — 2% — most observers expect that the Fed would have to resort to such aggressive monetary tightening that the US economy will end up having a hard-landing.

4) **Reverse Currency War:** A flip side of the US Fed's action of aggressively raising interest rates is that more and more investors are rushing to invest money in the US.

- This, in turn, has made the dollar become stronger than all the other currencies.
- Every central bank is trying to figure out ways to counter the US Fed and raise interest rates themselves in order to ensure their currency doesn't lose too much value against the dollar.
- That's because a currency which is losing value to the dollar, on the other hand, finds that it is getting costlier to import crude oil and other commodities that are often traded in dollars.

5) **Extended Fund Facility (IMF):** It is an IMF lending facility to help members with balance of payments problems that need an adjustment period longer than that provided for under a standby arrangement

- The EFF was established to provide assistance to countries:
- experiencing serious payments imbalances because of structural impediments; or

#### **TASK CUT OUT ON MSP**

- Suggest ways to make MSP available to farmers by making it effective and transparent

- Give more autonomy to the CACP

#### **ON NATURAL FARMING**

- Strategise to turn Krishi Vigyan Kendras and other research institutes into knowledge centres for natural farming

- Suggest setting up laboratory chains for organic certification

#### **ON CROP DIVERSIFICATION**

- Map existing cropping patterns

- Suggest a system that ensures a remunerative price to farmers for the sale of the new crop

- characterized by slow growth and an inherently weak balance of payments position.
- The EFF provides assistance in support of comprehensive programs that include policies of the scope and character required to correct structural imbalances over an extended period.

### **21.7.22**

1) **Aneurysm:** is a swelling of the arteries and veins in any part of the body, and is caused by weakening of the walls. It occurs most commonly in the aorta, back of the knees, brain or intestines. If the aneurysm gets ruptured, it can even cause internal bleeding and stroke.

- A device called flow diversion stent is a new innovative intervention for treatment of aneurysm for the initial stages, when it has not ruptured.
- A cylindrical, metallic mesh stent is placed inside the sac of the parent blood vessel to divert the blood flow from the aneurysm. The diversion is aimed at preventing rupture.

2) **Windfall tax:** is a tax levied by governments against certain industries when economic conditions allow those industries to experience above-average profits.

- The purpose is to redistribute excess profits in one area for the greater social good; however, this can be a contentious ideal.

3) **Vertical and horizontal reservations:**

- Reservation for Scheduled Castes, Scheduled Tribes, and Other Backward Classes is referred to as vertical reservation. It applies separately for each of the groups specified under the law.
- Horizontal reservation refers to the equal opportunity provided to other categories of beneficiaries such as women, veterans, the transgender community, and individuals with disabilities, cutting through the vertical categories

4) **Apocalypse of heat:** temperatures across Europe are soaring from Spain to the British Isles and spreading east. Wildfires stoked by the heat are burning in many countries, and much of the continent is in the throes of a lengthy drought

- UK recorded its highest temperature ever, going past 40 degrees Celsius for the first time
- Heat waves in Europe are increasing in frequency and intensity at a faster rate than almost any other part of the planet, including the Western United States.

5) **Wayanad Wildlife Sanctuary:** Located in Kerala, Wayanad Wildlife Sanctuary (WWS) is an integral part of the Nilgiri Biosphere Reserve. It was established in 1973.

- Nilgiri Biosphere Reserve was the first from India to be included in the UNESCO designated World Network of Biosphere Reserves (designated in 2012).
- Spread over 344.44 sq km, Wayanad Wildlife Sanctuary is contiguous to the tiger reserves of Nagerhole and Bandipur of Karnataka and Mudumalai of Tamil Nadu.
- Kabini river (a tributary of Cauvery river) flows through the sanctuary.

### **22.7.22**

1) **India Innovation Index 2022:** Karnataka has topped Niti Aayog's India Innovation Index 2022 among major states, while Chandigarh has topped among city-states and union territories Manipur has topped among northeast and hill states.

- Prepared by NITI Aayog and the Institute for Competitiveness, the India Innovation Index is a comprehensive tool for the evaluation and development of the country's innovation ecosystem.



- The index is based on seven pillars: human capital, investment, knowledge workers, business environment, safety and legal environment, knowledge output, and knowledge diffusion

2) **Kali Bein:** The 165-km rivulet starts from Hoshiarpur, runs across four districts and meets the confluence of the rivers Beas and Sutlej in Kapurthala

- Waste water from villages as well as industrial waste used to flow into the rivulet via a drain, turning its waters black, hence the name Kali Bein (black rivulet)
- The Kali Bein is of great significance to Sikh religion and history, because the first Guru, Nanak Dev, is said to have got enlightenment here.

3) **Nord Stream Pipeline:** Nord Stream consists of two pipelines, which have two lines each.

- The 1,224 km, \$11-billion underwater link is the shortest, most economical and environment-friendly route to double Russia's gas export to Germany.
- The twin pipelines together can transport a combined total of 110 billion cubic metres (bcm) of gas a year to Europe for at least 50 years.

Nord Stream pipelines from Russia



4) **Tetrapods:** Tetrapods are four-legged concrete structures that are placed along coastlines to prevent coastline erosion and water damage.

- Also known as wave breakers, Tetrapods were first used in France in the late 1940s to protect the shore from the sea.
- They are typically placed together to form an interlocking but porous barrier that dissipates the power of waves and currents.

5) **Terzan 2:** NASA has released an image of the globular cluster Terzan 2 in the constellation Scorpio captured by the Hubble Space Telescope.

- Globular clusters are the stable, tightly bound clusters of tens of thousands to millions of stars.
- They are found across a variety of galaxies.
- They get their regular, spherical shape from the intense gravitational attraction between the closely packed stars.

## 25.7.22

1) **Marburg virus disease:** it is a severe, often fatal hemorrhagic fever. It was earlier known as Marburg haemorrhagic fever.

- Marburg, like Ebola, is a filovirus; and both diseases are clinically similar.
- Rousettus fruit bats are considered the natural hosts for the Marburg virus.
- According to WHO, African green monkeys imported from Uganda were the source of the first human infection.
- The disease has an average fatality rate of around 50%. There is no approved antiviral treatment or vaccine for MVD as of now.
- This outbreak is only the second time that the disease has been detected in West Africa.

2) **Fiberisation:** The process of connecting radio towers with each other via optical fibre cables is called fiberisation. To transition into 5G, India needs at least 16 times more fibre.

- It helps provide full utilisation of network capacity, and carry large amounts of data once 5G services are rolled out.
- It will also aid in providing additional bandwidth and stronger backhaul support.

- The backhaul is a component of the larger transport that is responsible for carrying data across the network. As a result, fibre backhaul remains an important part of transport across all telecoms

3) **Snow leopard:** Scientific Name: *Panthera uncia*.

- Habitat: Cold High Mountains. These are found in 12 countries including China, Bhutan, Nepal, India, Pakistan, Afghanistan, Russia & Mongolia.
- China has the world's largest snow leopard population.
- Threats: Increased conflict due to expansion of human settlement & livestock grazing, Poaching for trade in body parts and fur, Climate change & shrinkage in habitat.
- IUCN: Vulnerable
- Schedule I: Wildlife (Protection) Act, 1972

4) **Wentian:** The 23-tonne Wentian ("Quest for the Heavens") laboratory module was launched on the back of China's most powerful rocket, the Long March 5B.

- The Wentian lab module, 17.9 metres (59 feet) long, will be where astronauts can carry out scientific experiments, along with the other lab module yet to be launched – Mengtian ("Dreaming of the Heavens").
- It will also serve as short-term living quarters for astronauts during crew rotations on the station, designed for long-term accommodation of just three astronauts.

5) **Public Health Emergency of International Concern:** A PHEIC is defined in the International Health Regulations (IHR, 2005) as, "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response". This definition implies a situation that is:

- Serious, sudden, unusual or unexpected; Carries implications for public health beyond the affected State's national border; and May require immediate international action
- The WHO has declared 6 global emergencies in the past decade, including the Ebola epidemic. Monkeypox has been declared as a PHEIC.

## 26.7.22

1) **Kargil Vijay Diwas:** observed on the 26th of July every year.

- Kargil War, also known as the Kargil conflict, was fought between May-July of 1999 in the Kargil (now a district in the UT of Ladakh) district of Jammu and Kashmir along the Line of Control (LoC) in which India got the victory.
- In the year 1999, India and Pakistan signed the Lahore Agreement to mutually resolve the Kashmir issue in a peaceful manner.
- However, the Pakistani troops began infiltrating toward Indian side of the Line of Control (LoC) under Operation Badr, hoping to cut off Indian Troops in Siachen. Indian Army responded by launching Operation Vijay.

2) **Raja Ravi Varma:** Ravi Varma (1848–1906) was one of the first Indian painters to successfully adopt Western painting techniques and adapt academic realism to the visual interpretation of Indian mythology.

- Varma worked on both portrait and landscape paintings and is considered among the first Indian artists to use oil paints.
- also known as 'The Father of Modern Indian Art' was an Indian painter of the 19th century who attained fame and recognition for portraying scenes from the epics of the Mahabharata and Ramayana. He painted the picture of God and Goddess that helped Dalits
- His most famous works include Damayanti Talking to a Swan, Shakuntala Looking for Dushyanta, Nair Lady Adorning Her Hair, and Shantanu and Matsyagandha.

3) **Sections 41 and 41A of the Code of Criminal Procedure:** Section 41 of the Code provides for the circumstances in which arrest can be made by the police without a warrant and mandates for reasons to be recorded in writing for every arrest and non-arrest.

- Section 41A of the Code provides for the requirement of a notice to be sent by the investigating agencies before making an arrest in certain conditions prescribed by the Code.

4) **Indian National Space Promotion and Authorization Centre (IN-SPACe):** It will act as a single-point interface between Indian Space Research Organisation (ISRO), and everyone who wants to participate in space-related activities, or use India's space resources.

- It will also hand-hold, promote and guide the private industries in space activities through encouraging policies and a friendly regulatory environment.

5) **New Space India Limited:** The establishment of NSIL was announced in Budget 2019.

- One of the mandates of NSIL is to mass-produce and manufacture the SSLV and the more powerful PSLV in partnership with the private sector in India through technology transfers.
- Its aim is to use research and development carried out by ISRO over the years for commercial purposes through Indian industry partners.
- It differs from ISRO's existing commercial arm Antrix Corporation:
- Antrix will handle ISRO's commercial deals for satellites and launch vehicles with foreign customers.
- NSIL will deal with capacity building of local industry for space manufacturing.

## 27.7.22

1) **Light mantled albatross:** Asia's first sighting of Light-mantled Albatross (*Phoebastria palpebrata*), a species native to the Antarctic seas, was recorded in Rameswaram and adjoining islets of the Gulf of Mannar Marine National Park

- The Light-mantled Albatross, with broad pelagic habits, maintains a circumpolar distribution in the Southern Ocean.
- Listed as a 'Near Threatened' species by the International Union for Conservation of Nature

2) **DOLUTEGRAVIR (DTG):** The World Health Organisation (WHO) has recommended the use of the HIV drug dolutegravir (DTG) as the preferred first-line and second-line treatment for all populations, including pregnant women and those of childbearing potential.

- Dolutegravir (DTG), sold under the brand name Tivicay, is an antiretroviral medication used, together with other medication, to treat HIV/AIDS.

3) **Johar' greeting:** Johar', which essentially means 'salutation and welcome', is used within the tribal communities of Jharkhand, and in parts of Chhattisgarh and Odisha. According to several tribal leaders from Jharkhand, the word 'Johar' also means 'paying respect'.

- Tribal communities are nature worshippers and follow Sarna religion code, although it is not an official religion.

4) **International Space Station:** The International Space Station (ISS) is a space station, or a habitable artificial satellite, in low Earth orbit.

- Its first component launched into orbit in 1998, and the ISS is now the largest human-made body in low Earth orbit.
- It circles the Earth in roughly 92 minutes and completes 15.5 orbits per day.
- The ISS serves as a microgravity and space environment research laboratory in which crew members conduct experiments in biology, human biology, physics, astronomy, meteorology, and other fields.

- The ISS programme is a joint project between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada)

5) **New Ramsar sites:** India has designated five new wetlands of international importance, taking the total number of Ramsar sites in the country to 54.

- The new sites are Karikili Bird Sanctuary, Pallikaranai Marsh Reserve Forest & Pichavaram Mangrove in Tamil Nadu, Pala wetland in Mizoram and Sakhya Sagar in Madhya Pradesh.
- The Ramsar Convention on Wetlands, an international treaty, aims at the conservation and sustainable use of wetlands. Named after the city of Ramsar in Iran, the convention was signed in 1971.

## **28.7.22**

1) **Total fertility rate:** Total fertility rate (TFR) in simple terms refers to the total number of children born or likely to be born to a woman in her lifetime if she were subject to the prevailing rate of age-specific fertility in the population.

- TFR of about 2.1 children per woman is called Replacement-level fertility.
- TFR lower than 2.1 children per woman — indicates that a generation is not producing enough children to replace itself, eventually leading to an outright reduction in population.

2) **Prevention of Money Laundering Act:** It was enacted as a response to India's global commitment (including the Vienna Convention) to curb the menace of money laundering.

- Objectives of the Act: PMLA was enacted in 2002 and it came into force in 2005
- To prevent and control money laundering.
- To confiscate and seize the property obtained from the laundered money.
- To deal with any other issue connected with money laundering in India.
- The Adjudicating Authority is appointed by the central government. It decides whether the property attached or seized is involved in money laundering.
- An Appellate Tribunal appointed by the Government is given the power to hear appeals against the orders of the Adjudicating Authority. Orders of the tribunal can be appealed in the appropriate High Court.

3) **Asiatic Lions:** The Asiatic Lion is restricted to India. At present Gir National Park and Wildlife Sanctuary is the only abode of the Asiatic lion.

- Its previous habitats consisted of West Asia and the Middle East before it became extinct in these regions.
- Asiatic lions are slightly smaller than African lions.
- The most striking morphological character, which is always seen in Asiatic lions, and rarely in African lions, is a longitudinal fold of skin running along its belly.
- IUCN Red List: Endangered
- CITES: Appendix I
- Wildlife (Protection) Act 1972: Schedule I

4) **Cheetah:** The cheetah is one of the oldest of the big cat species

- It is also the world's fastest land mammal that lives in Africa and Asia.
- African cheetah has been reintroduced in Kuno national park.
- IUCN status: Vulnerable
- CITES: Appendix 1

5) **Masala Bonds:** are rupee-denominated bonds issued outside India by Indian entities or companies.

- In India, the masala bonds were first introduced by the International Finance Corporation (IFC), a member of the World Bank group, in 2014 in order to fund infrastructure projects.

- Masala Bonds, like any other off-shore bonds, are debt instruments that help to raise money in local currency from foreign investors.
- Both the government and private entities can issue these bonds.

### **29.7.22**

1) **Google Street View:** Google Street View is an immersive 360-degree view of a location captured using special cameras mounted on vehicles or on backpacks by data collectors moving around the city streets.

- The images are then patched together to create a 360-degree view which users can swipe through to get a detailed view of the location
- It is finally available for ten cities in India and is expected to roll out in about 50 more cities by the end of the year.

2) **Federal funds rate:** The fed funds rate is what banks in USA charge each other for overnight loans to meet these reserve balances.

- The amount loaned and borrowed is known as the federal funds.
- The US fed cant directly determine the FRR, but tries to target it by controlling the money supply.

3) **Mahuli Group of Temples:** Also known as Dakshin Kashi, the Mahuli Group of Temples are located in Mahuli near Satara in Maharashtra.

- It is situated at confluence of the rivers Krishna and Venna.
- These are famous group of 5 temples belonging to 11th and 12th CE in Hemadpanthi style of architecture.
- This area has the samadhis of great Maratha queens Rani Tarabai Bhosle and Rani Yesho Bai Bhosle.

4) **Starlink Mission:** Starlink is a constellation of broadband satellites in the low-Earth orbit.

- Announced in 2015, the Starlink project is a satellite constellation development project underway by SpaceX.
- Under the project, SpaceX intends to evolve into a constellation of nearly 12,000 satellites.
- Elon Musk's SpaceX has launched the Starlink as its 32nd launch of 2022 using its workhorse Falcon 9 rocket.

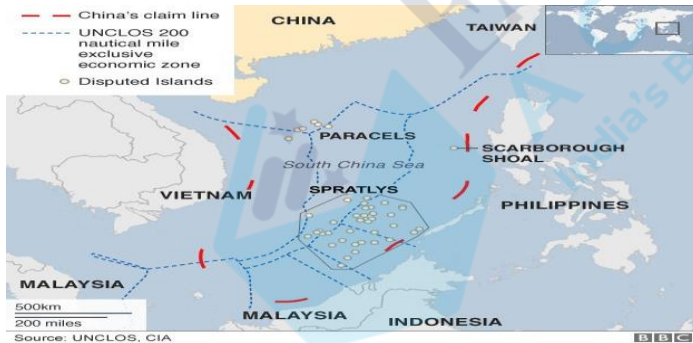
5) **Lumpy Skin Disease:** Lumpy skin disease (LSD) is a viral disease of cattle and water buffalo caused by the poxvirus LSD virus.

- It is spread by mosquitoes, flies, lice, wasps, by direct contact among the cattle, and through contaminated food and water.
- There is no treatment for the virus, so prevention by vaccination is the most effective means of control.



## Places in News

- 1) **The Marmolada Glacier:** is a valley glacier that descends on the northern side of the Marmolada, the highest mountain in the Dolomites, Italy. At least seven people were killed after a glacial ice shelf collapsed in this northern Italian Alps amid higher-than-usual temperatures.
- 2) **Karakalpakstan:** autonomous republic in Uzbekistan, situated southeast and southwest of the Aral Sea.
  - It is an ethnically diverse region populated largely by ethnic minorities – Karakalpaks and Kazakhs.
  - They claim to share a common origin with Kazakhs, Uzbeks and Turks but diverged over time.
  - Uzbek President dropped plans to curtail the autonomy of the country's Karakalpakstan province following a rare public protest in the northwestern region.
- 3) **Yasuni National Park:** The Yasuni National Park and Biosphere Reserve is a Humid Tropical Rain Forest located in the Amazon region of Ecuador.
  - Exploring the region's oil reserves has threatened many native species and habitats, as well as the lifestyle of the indigenous Waorani people.
- 4) **Federally Administered Tribal Areas (FATA):** was a semi-autonomous tribal region in northwestern Pakistan that existed from 1947 until being merged with neighbouring province Khyber Pakhtunkhwa in 2018. It consisted of seven tribal agencies (districts) and six frontier regions, and were directly governed by Pakistan's federal government through a special set of laws called the Frontier Crimes Regulations.



- 5) **Paracel Islands:** also known as the Xisha Islands and the Hoang Sa Archipelago are a disputed archipelago in the South China Sea. The archipelago includes about 130 small coral islands and reefs, most grouped into the northeast Amphitrite Group or the western Crescent Group.

## 6) Erra Matti Dibbalu:

The Erra Matti Dibbalu, situated between the Visakhapatnam and Bheemunipatnam, are uncommon red sand dunes that serve as a reminder of millions of years of geological activity.

- 7) **Strait of Hormuz:** The Strait of Hormuz is a narrow channel, approximately 30 miles wide at the narrowest point, between the Omani Musandam Peninsula and Iran. It connects the Persian Gulf to the Gulf of Oman.



8) **The Depsang Plains:** represent a high-altitude gravelly plain at the northwest portion of the disputed Aksai Chin region of Kashmir, divided into Indian and Chinese administered portions across a Line of Actual Control.



9) **Mangarh Hillock:** The hillock is situated at the Gujarat-Rajasthan border.

- The place is also known as the Adivasi Jallianwala.
- 1500 Bhil tribal freedom fighters were brutally killed by the British army on 17th November 1913.

10) **Agumbe ghat:** Agumbe, popularly known as the 'Cherrapunji of South'.

- It is a tiny village nestled in the thick rainforests of Western Ghats in Karnataka.
- It is one of the last surviving rainforests in India which receives an average of around 7,000mm of rainfall annually.
- Agumbe is registered as a UNESCO World Heritage Site and is famous for its rich biodiversity, waterfalls and red-hazy sun-set over the Arabian Sea.

11) **Sigur Plateau:** Sigur Plateau is located in the Nilgiri Hills of Tamil Nadu.

- It connects the Western and the Eastern Ghats.
- It has the Nilgiri Hills on its southwestern side and the Moyar River Valley on its northeastern side.
- It sustains elephant populations and their genetic diversity.

#### 12) New Ramsar sites:

- A. **Karikili Bird Sanctuary (Tamil Nadu):** The sanctuary is spread over a five-kilometre-wide belt and is home to cormorants, egrets, grey heron, open-billed stork, darter, spoonbill, white Ibis, night herons, grebes, grey pelican among others.
- B. **Pallikaranai Marsh Reserve Forest (Tamil Nadu):** One of the last remaining natural wetlands, the marsh drains in an area of 250 square kilometres encompassing 65 wetlands. The Pallikaranai Marsh is one of the few natural coastal aquatic habitats that qualify as a wetland in India.
- C. **Pichavaram Mangrove (Tamil Nadu):** One of the last mangrove forests in the country. It has an island of a vast expanse of water covered with mangrove forests.
- D. **Sakhya Sagar (Madhya Pradesh):** Created from the Manier river in 1918, Sakhya Sagar is located near Madhav National Park.
- E. **Pala Wetland in Mizoram (Mizoram):** Its geographical location falls under the Indo-Burma biodiversity hotspot and is therefore rich in animal and plant species. The lake is a major component of the Palak Wildlife Sanctuary and it supports the major biodiversity of the sanctuary.

13) **Tunisia:** Tunisia is a small country in northern Africa, along the southern Mediterranean coast.

- The country saw intense civil unrest in 2011 (Jasmine revolution), which led to the ousting of the 23 year old authoritarian regime of president "Zine El Abidine Ben Ali".
- While the country was stable thus far, recent austerity budget cuts and the economic situation have led to some unrest, which could spell danger.



## MCQ

1) With reference to the PLI Scheme for Telecom & Networking Products, consider the following statements:

1. The guidelines for the PLI Scheme for Telecom & Networking Products have been amended to introduce design-led manufacturing with additional incentive rates.
2. The design-led manufacturing scheme is open for both medium and small-scale enterprises (MSMEs) and non-MSMEs, including domestic and global companies.

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

Ans : c) The Department of Telecommunications (DoT) has extended the production-linked incentive (PLI) scheme for telecom by one year, and has amended the scheme to raise the incentive rate by an additional 1 per cent, aimed towards incentivising design-led manufacturing in the sector.

- The guidelines for the PLI Scheme for Telecom & Networking Products have been amended to introduce design-led manufacturing with additional incentive rates
- The design-led manufacturing scheme is open for both medium and small-scale enterprises (MSMEs) and non-MSMEs, including domestic and global companies.
- The DoT also said applications for design-led manufacturing will be prioritised over other manufacturers. The scheme requires an investment threshold of Rs 10 crore for MSMEs and Rs 100 crore for non-MSMEs, excluding land and building cost.

2) Consider the following statements regarding Development Finance Institutions (DFIs).

1. Development Finance Institutions provide risk capital for economic development projects on non-commercial basis.
2. Industrial Development Bank of India (IDBI) was setup as India's first DFI before Independence.

3. During the pre-liberalised era, India had DFIs that were primarily engaged in development of industry in the country.

Which of the above statements is/are correct?

- (a) 1 only
- b) 1, 2
- c) 1, 3
- d) 1, 2, 3

Ans: c) A development finance institution (DFI) also known as a development bank is a financial institution that provides risk capital for economic development projects on non-commercial basis.

- During the pre-liberalised era, India had DFIs which were primarily engaged in development of industry in the country.
- In India, the first DFI was operationalised in 1948 with the setting up of the Industrial Finance Corporation (IFCI). Subsequently, the Industrial Credit and Investment Corporation of India (ICICI) was set up with the backing of the World Bank in 1955.
- The Industrial Development Bank of India (IDBI) came into existence in 1964 to promote long-term financing for infrastructure projects and industry.

3) Consider the following statements regarding Antimicrobial Resistance.

1. Antimicrobial Resistance is the ability of a microbe to resist the effects of medication.
2. They can spread between people and animals, including from food of animal origin, and from person to person.
3. Antimicrobial resistant-microbes does not occur naturally.

Which of the above statements is/are correct?

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

Ans: b) The term antibiotic resistance is a subset of antimicrobial resistance or AMR which is the ability of a microbe to resist the effects of medication.

- Antimicrobial resistant-microbes occur naturally and are found in people, animals, food, and the environment (in water, soil and air).
- They can spread between people and animals, including from food of animal origin, and from person to person.

4) Kaliningrad, often mentioned in news, is located in:

- A. Russia
- B. Myanmar
- C. France
- D. China

Ans: a) As Russia's westernmost federal entity, the Kaliningrad Oblast occupies 15,000 sq km and houses under 1 million people. Russia is divided into 85 such oblasts, or states.

It is situated almost 300-km away from mainland Russia, and shares no borders with it.

Home to the deployment of Moscow's Iskander missiles and the Russian Baltic Fleet, Kaliningrad has been called the Kremlin's "unsinkable aircraft carrier".

5) Partnership for Global Infrastructure (PGII) is an initiative of:

- A. BRICS
- B. G7
- C. SAARC
- D. BIMSTEC

Ans: b) At the 2021 G7 Summit, G7 leaders had announced their intent to develop a values-driven, high-impact, and transparent infrastructure partnership.

It was to meet the enormous infrastructure needs of low- and middle-income countries and support the US' and its allies' economic and national security interests.

At the 2022 G7 summit, the participating leaders formally launched the Partnership for Global Infrastructure (PGII).

Under this, G7 leaders pledged to raise \$600 billion in private and public funds over five years to finance needed

6) With reference to the PSLV-C53/DS-EO mission, consider the following statements:

1. It is the second dedicated commercial mission of NewSpace India Limited (NSIL).
2. It is designed to orbit DS-EO satellite along with two other co-passenger satellites from Singapore.

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

Ans: C) PSLV-C53 is the second dedicated commercial mission of NewSpace India Limited (NSIL). It is designed to orbit DS-EO satellite along with two other co-passenger satellites from Singapore.

- PSLV-C53 carries three satellites. DS-EO, a 365 kg and NeuSAR, a 155 kg satellite both belonging to Singapore. Third satellite is a 2.8 kg Scoob-1 of Nanyang Technological University (NTU), Singapore.

7) Which of the following statements describe the term 'Demographic Dividend'?

- a) A rise in the gross employment ratio of country due to government policies
- b) A rise in the rate of literacy due to development of educational institutions in different parts of the country
- c) A rise in the rate of economic growth due to higher share of working age people in a population
- d) A rise in the standard of living of the people due to the growth of alternative livelihood practices

Ans: C) Demographic dividend, as defined by the United Nations Population Fund, is "the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population is larger than the non-working-age share of the population".

8) What is Clofazimine, recently seen in news?



A. One of the three essential drugs in the Multi Drug Treatment of Multibacillary Leprosy (MB-MDT) cases

B. Crypto currency

C. Ransomware

D. None of the above

Ans: A) Clofazimine, a key drug for treatment of leprosy, which had been in short supply in the Indian market for several months, is now “not available”, with the situation turning into a crisis over the past three months.

- Clofazimine is one of the three essential drugs in the Multi Drug Treatment of Multibacillary Leprosy (MB-MDT) cases, along with Rifampicin and Dapsone.
- According to the World Health Organization (WHO), leprosy is endemic in several States and Union Territories of India, with the annual case detection rate of 4.56 per 10,000 population.

9) Consider the following statements regarding Public Distribution System (PDS).

1. The concept of a buffer stock was first introduced during the Second Five Year Plan.
2. The Central Government takes the responsibility for procurement, storage, transportation and bulk allocation of foodgrains, at subsidised prices.
3. The responsibility of distribution to consumers including target groups through a network of fair price shops (FPSs) rests with the State Governments.

Which of the above statements is/are correct?

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

Ans: B) PDS is operated under the joint responsibility of the Central and State Governments. The Central Government takes the responsibility for procurement, storage, transportation and bulk allocation of foodgrains, at subsidised prices.

- The responsibility of distribution to consumers including target groups through a network of

various fair price shops (FPSs) rests with the State Governments.

- The buffer stock provides the basic and most flexible instrument for moderating short-term effects of supply or production shortfalls. The concept of a buffer stock was first introduced during the 4th Five Year Plan (1969-74) and a buffer stock of 5 million tonnes of foodgrains was envisaged. The buffer stock figures are normally reviewed after every 5 years.

10) Snake Island, recently seen in news, located in:

- A. Ukraine
- B. Germany
- C. France
- D. Spain

Ans: A) Russian forces abandoned the strategic Black Sea outpost of Snake Island, in a major victory for Ukraine that could loosen the grip of Russia's blockade on Ukrainian ports.

- Snake Island, also known as Serpent Island or Zmiinyi Island, is an island belonging to Ukraine located in the Black Sea, near the Danube Delta, with an important role in delimiting Ukrainian territorial waters.
- On 24 February 2022, two Russian navy warships attacked and captured Snake Island. On 30 June 2022, Ukraine said that it had pushed Russian forces from the island.

The bare rocky outcrop overlooks sea lanes to Odesa, Ukraine's main Black Sea port, where Russia is blocking food cargos from one of the world's leading grain suppliers.

11) With reference to the external debt, consider the following statements:

1. According to RBI India's external debt rose to \$620.7 billion at end-March 2022, recording an increase of \$47.1 billion over the year earlier period.
2. The external debt to GDP ratio declined to 19.9% at end-March 2022, from 21.2% a year earlier.

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

Ans: C) India's external debt rose to \$620.7 billion at end-March 2022, recording an increase of \$47.1 billion over the year earlier period, Reserve Bank of India (RBI) data showed.

- The external debt to GDP ratio declined to 19.9% at end-March 2022, from 21.2% a year earlier.
- Valuation gains on account of the appreciation of the U.S. dollar vis-à-vis the Indian rupee and major currencies including the Japanese yen and euro was estimated at \$11.7 billion.

12) Business Reform Action Plan (BRAP)- 2020, recently seen in news, is published by:

- A. Union Ministry of Finance  
B. CSIR  
C. World Bank  
D. World Economic Forum

Ans: A) Finance Minister Nirmala Sitharaman released the Business Reform Action Plan (BRAP)- 2020 in New Delhi.

- In the report, seven states have been identified as the top achievers based on implementation of the Business Reforms Action Plan. The states are Andhra Pradesh, Gujarat, Haryana, Karnataka, Punjab, Telangana and Tamil Nadu.
- The report further mentioned that Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha, Uttarakhand and Uttar Pradesh figure under the Achievers category. While Assam, Chhattisgarh, Goa, Jharkhand, Kerala, Rajasthan and West Bengal have been placed in the Aspirers category.

13) Consider the following statements regarding Rare Earth Minerals.

1. The magnets made from rare earths are more powerful than conventional ones.
2. India holds 2nd largest reserves after China.
3. They are called 'rare earth' because earlier it was difficult to extract them from their oxides forms technologically.

Which of the above statements is/are correct?

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

Ans: D) The rare earth minerals (REM) are a set of seventeen metallic elements. These include the fifteen lanthanides on the periodic table in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides.

- They are called 'rare earth' because earlier it was difficult to extract them from their oxides forms technologically.
- For instance, magnets made from rare earths are many times more powerful than conventional ones.
- India has the world's fifth-largest reserves of rare earth elements, nearly twice as much as Australia, but it imports most of its rare earth needs in finished form from China.

14) With reference to the Fugitive Economic Offender (FEO), consider the following statements:

1. An FEO is defined by The Fugitive Economic Offenders (FEO) Act, 2018.
2. The 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.

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

Ans: C) Fugitive Economic Offender (FEO): An FEO is defined by The Fugitive Economic Offenders (FEO) Act, 2018.

- As per the act, a person is declared as a fugitive economic offender if:

- an arrest warrant has been issued against him for any specified offences where the value involved is over Rs 100 crore, and
- he has left the country and refuses to return to face prosecution.
- The 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.

15) The Department of Financial Services (DFS) oversees several key programs/initiatives. It provides policy support to

1. Public Sector banks (PSBs)
2. Public Sector Insurance Companies (PSICs)
3. Development Financial Institutions (DFIs)

Select the correct answer code:

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

Ans: C) The Department of Financial Services (DFS) oversees several key programs/initiatives and reforms of the Government concerning the Banking Sector, the Insurance Sector and the Pension Sector in India. The Department provides policy support to the Public Sector banks (PSBs), Public Sector Insurance Companies (PSICs) and Development Financial Institutions (DFIs) like National Bank for Agriculture and Rural Development (NABARD).

16) Which of the following nations in the Middle-east is/are land locked?

- Iran  
Syria  
Iraq  
Turkey

Select the correct answer code:

- a) 1, 2, 3

- b) 1, 3, 4
- c) 2, 3, 4
- d) None of the above

Ans: D



17) Financial Stability Report is released by:

- A. RBI
- B. World Bank
- C. World Economic Forum
- D. None of the above

Ans: A) Financial Stability Report: is released by the RBI twice a year.

- The report details the state of financial stability in the country.
- As part of the FSR, the RBI also conducts a Systemic Risk Survey (SRS), wherein it assesses the financial system on five different types of risks: Global; Financial; Macroeconomic; Institutional; General.

18) With reference to the UNGA adopting resolution on improving global road safety, consider the following statements:

1. The UNGA adopted a new resolution on road safety in 2020.
2. The UNGA recognizes the role of the Department of Safety and Security (UNDSS) in implementing the UN Road Safety Strategy for reducing road traffic crashes and fatalities.

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

Ans: C) UNGA adopts resolution on improving global road safety: The UNGA adopted a new resolution on road safety in 2020. The UNGA recognizes the role of the Department of Safety and Security (UNDSS) in implementing the UN Road Safety Strategy for reducing road traffic crashes and fatalities.

- The UNDSS was formally established in 2005, to support and enable the effective conduct of UN activities by ensuring a coherent, effective and timely response to all security-related threats and other emergencies

19) Consider the following statements regarding India's Ethanol blending in petrol.

1. The amended National Biofuel Policy-2018 has set the new target for 2025-26 for achieving 20% ethanol blending in petrol.
2. Molasses is the feedstock used by sugar mills to produce ethanol.
3. The National Biofuel Coordination Committee (NBCC), with the Union Minister for Environment, Forest & Climate Change as its head, is the agency to coordinate this blending programme.

Which of the above statements is/are correct?

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

Ans: B) The Union Cabinet has advanced by five years its target for achieving 20% ethanol blending in petrol. The amended National Biofuel Policy-2018 has now set the new target for 2025-26 instead of 2030, apart from allowing more feedstock for production of biofuels and export of biofuels in specific cases.

- After setting a 20% blending target for 2030 initially, the central government had announced premium rates for ethanol produced from sugar syrup, cane juice as well as B heavy molasses. Molasses is the

sticky liquid formed during sugar production from cane juice, and depending on the percentage of sugar left, it is categorized as B heavy and C. Molasses is the feedstock used by sugar mills to produce ethanol.

- The National Biofuel Coordination Committee (NBCC), with the Union Minister for Petroleum and Natural Gas as its head, is the agency to coordinate this blending programme.

20) The amended National Biofuel Policy-2018 focuses on which of the following?

1. Introduction of more feedstock for production of biofuels.
2. Production of biofuels under the 'Make in India' programme in Special Economic Zones.
3. Ban of export of biofuels.

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: A) The 2018 policy was amended to introduce several changes. The most important amendment has been advancing the 20% blending date by five years from Ethanol Supply Year (ESY) 2030 to 2025-26. Introduction of more feedstock for production of biofuels; production of biofuels under the 'Make in India' programme in Special Economic Zones, Export Oriented Units; and permission to allow export of biofuels in specific cases are some other changes. Apart from addition of new members to the NBCC, the Committee has now been given the permission to change the policy which it earlier lacked.

21) Consider the following statements regarding Election Commission of India (ECI).

1. The election commissioners can be removed before the expiry of their term.
2. The Chief Election Commissioner can be removed from office only through a process of removal similar to that of a Supreme Court judge.

3. The Constitution has debarred the retiring election commissioners from any further appointment by the government.

Which of the above statements is/are correct?

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

Ans: A) The Constitution has not debarred the retiring election commissioners from any further appointment by the government.

- They can resign anytime or can also be removed before the expiry of their term.
- The CEC can be removed from office only through a process of removal similar to that of a SC judge by Parliament.

22) Udyami Bharat Programme, recently seen in news, is related to:

- A. MSME
- B. Health
- C. Space
- D. None of the above

Ans: A) Prime Minister Narendra Modi launches several schemes and programmes at Udyami Bharat Programme in New Delhi.

- During the event, Mr Modi launched the Raising and Accelerating MSME Performance (RAMP) Scheme, Capacity Building of First-Time MSME Exporters Scheme and new features of the Prime Minister's Employment Generation Programme PMEGP.
- He added that the Centre has increased the budget by more than 650 percent in the last eight years to strengthen the Micro, Small and Medium Enterprises (MSME) sector.
- A self-reliant fund of 50 thousand crore rupees has been released for the sector. The Prime Minister also asked MSMEs to register on the GeM portal for supplying goods to the government.

23) Floods occur frequently in the Brahmaputra River basin due to which of the following factors?

- 1. The Brahmaputra often witnesses heavy rainfall in its catchment area.
- 2. The tributaries of Brahmaputra are large and bring large water and sediment volume.

Select the correct answer code:

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

Ans: C) The Brahmaputra Valley is said to be one of the most hazard-prone regions of the country — according to the National Flood Commission of India, about 32 lakh hectares or over 40 per cent of the Assam's land is flood-prone due to this.

- An important reason apart from the ones mentioned in the question is the ageing of embankments.

The filling of embankments with sediment, wear and tear and unscientific distribution across the river valley is one of the major reasons.

24) With reference to the Multi-Agency Maritime Security Group (MAMSG), consider the following statements:

- 1. It was formed in 1990.
- 2. It works directly under the National Security Council secretariat (NSCS).

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

Ans: B) MAMSG was formed in November 2021 with an aim to develop better coordination between different maritime security agencies and ministries of the country. It works directly under the National Security Council secretariat (NSCS).

- The National Security Council is a three-tiered organization consisting of Strategic Policy Group (SPG); the National Security Advisory Board (NSAB) and the National Security Council Secretariat. The council oversees political, economic, energy and security issues of strategic concern.
- NSA is the Chairperson of NSCS.

25) Consider the following statements.

1. Ukraine is bordered by both Black Sea and Mediterranean Sea.
2. Romania, Poland and Belarus share land boundary with Ukraine.
3. Strait of Gibraltar can be accessed through a narrow passage via Ukraine.

Which of the above statements is/are correct?

- a) 1, 2
- (b) 2 only
- c) 2, 3
- d) 1, 3

Ans: B) Ukraine is bordered by Russia to the east and northeast, Belarus to the northwest, Poland and Slovakia to the west, Hungary, Romania, and Moldova to the southwest, and the Black Sea and Sea of Azov to the south and southeast, respectively. Strait of Gibraltar is a narrow strait that connects the Atlantic Ocean to the Mediterranean Sea and separates Gibraltar and Peninsular Spain in Europe from Morocco and Ceuta (Spain) in Africa. It is far away from Ukraine.

26) Consider the following statements.

1. Global Assessment Report on Biodiversity and Ecosystem Services was released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).
2. The World Network of Biosphere Reserves is created by UNEP.
3. The Nilgiri Biosphere Reserve is designated as the first biosphere reserve in India.

Which of the above statements is/are correct?

- a) 1 only

- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: b) Global Assessment Report on Biodiversity and Ecosystem Services released in 2019 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

- World Network of Biosphere Reserves, created in 1971 by UNESCO.
- The Nilgiri Biosphere Reserve was the first biosphere reserve in India designated in the year 1986 by UNESCO. It stretches across the States of Tamil Nadu, Karnataka and Kerala.

27) With reference to the India - European Union (EU) relations, consider the following statements:

1. India's bilateral trade with the EU amounted to \$116.36 billion in 2021-22.
2. The EU is India's second-largest trading partner, after the U.S., and the second-largest destination for Indian exports.

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

Ans: c) India and the European Union (EU) concluded the first round of talks for the proposed free trade agreement (FTA) and the next round of talks is scheduled at Brussels in September, the Ministry of Commerce and Industry said.

- India and the 27-nation bloc resumed negotiations on June 17, after a gap of more than eight years, on the proposed agreements on trade, investments and geographical indications (GI).
- India's bilateral trade with the EU amounted to \$116.36 billion in 2021-22
- The EU is India's second-largest trading partner, after the U.S., and the second-largest destination for Indian exports.

28) Snake Island, recently seen in news is located in

- a) Baltic Sea



- b) Black Sea
- c) Caspian Sea
- d) Mediterranean Sea

Ans: B

29) With reference to the North Atlantic Treaty Organization (NATO), consider the following statements:

1. It is a 30-country regional security coalition that emerged from the crucible of Cold War rivalry.
2. Finland and Sweden are set to join NATO possibly within a year.

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

Ans: C) Leaders of the North Atlantic Treaty Organization (NATO), a 30-country regional security coalition that emerged from the crucible of Cold War rivalry, met on June 29-30 in Madrid, Spain.

- NATO allies other than the U.S. remained firmly committed to financing the organisation's military needs. Their combined defence investments have jumped by \$130 billion from 2014-19, in part driven by Russia's annexation of Crimea.

Second, after decades of maintaining a position of neutrality, Finland and Sweden are set to join NATO possibly within a year, in a large part driven by the strategic insecurity they face as neighbours of Russia

30) Consider the following statements regarding Saharia tribe.

1. Saharia are an ethnic group in the state of Gujarat.
2. They are classified as Particularly vulnerable tribal group.
3. They are particularly skilled in making catechu from Khair trees.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: C) Saharia are an ethnic group in the state of Madhya Pradesh. Saharia tribe comes under the particularly vulnerable tribal groups (PVTGs).

- The Saharias are expert woodsmen and forest product gatherers. They are particularly skilled in making catechu from Khair trees.

31) With reference to the Nairobi flies, consider the following statements:

1. They are small, beetle-like insects that belong to two species, *Paederus eximius* and *Paederus sabaeus*.
2. They are orange and black in colour, and thrive in areas with high rainfall.

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

Ans: C) Nairobi flies, also called Kenyan flies or dragon bugs, are small, beetle-like insects that belong to two species, *Paederus eximius* and *Paederus sabaeus*.

- They are orange and black in colour, and thrive in areas with high rainfall, as has been witnessed in Sikkim in the past few weeks. Like most insects, the beetles are attracted by bright light.
- Usually, the insects attack pests that consume crops and are beneficial for humans — but at times, they come in contact with humans directly and cause harm.
- These flies do not bite, but if disturbed while sitting on anyone's skin, they release a potent acidic substance that causes burns.

32) Consider the following statements regarding Cyanobacteria.

1. Cyanobacteria are microscopic organisms commonly found in water and sometimes in soil.
2. Not all Cyanobacteria produce toxins.
3. Climate change and increasing global temperature is leading to cyanobacterial blooms.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: D) Cyanobacteria are microscopic organisms common in water and sometimes found in soil. Not all produce toxins but scientists say toxic ones are occurring more frequently as climate change drives up global temperatures.

- Some cyanobacterial blooms can harm people and animals and scientists are concerned about their potential impact as climate change leads to warmer water temperatures, which many cyanobacteria prefer.

33) With reference to the quarks, consider the following statements:

1. Quarks are elementary particles that come in six “flavours”: up, down, charm, strange, top, and bottom.
2. They usually combine together in groups of twos and threes to form hadrons such as the protons and neutrons that make up atomic nuclei.

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

Ans: C) The Large Hadron Collider beauty (LHCb) experiment — which is investigating the slight differences between matter and antimatter by studying a type of particle called the “beauty quark”, or “b

quark” — has observed three never-before-seen particles, CERN announced on July 5.

- The three “exotic” additions — a new kind of “pentaquark” and the first-ever pair of “tetraquarks” — to the growing list of new hadrons found at the LHC will help physicists better understand how quarks bind together into these composite particles.
- Quarks are elementary particles that come in six “flavours”: up, down, charm, strange, top, and bottom. They usually combine together in groups of twos and threes to form hadrons such as the protons and neutrons that make up atomic nuclei.

34) Apollo 11 mission is related to

- a) Electrodynamics of Moon’s Interaction with the Sun
- b) Explore the dark side of the Moon
- c) First manned mission to the Moon.
- d) Collect data on the moon’s radiation levels

Ans: C) Apollo 11 became one of the most publicly recognised missions of NASA and was the first manned mission to the Moon.

35) With reference to the Critical minerals, consider the following statements:

1. India and Australia decided to strengthen their partnership in the field of projects and supply chains for critical minerals.
2. Critical minerals are elements that are the building blocks of essential modern-day technologies, and are at risk of supply chain disruptions.

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

Ans: C) India and Australia decided to strengthen their partnership in the field of projects and supply chains for critical minerals.

- Critical minerals are elements that are the building blocks of essential modern-day technologies, and are at risk of supply chain disruptions.
- These minerals are now used everywhere from making mobile phones, computers to batteries, electric vehicles and green technologies like solar panels and wind turbines. Based on their individual needs and strategic considerations, different countries create their own lists.

36) Consider the following statements:

1. Tuberculosis (TB) is caused by a bacteria.
2. TB can spread from person to person through the air.
3. TB is a treatable and curable disease.

Which of the statements given above is/are correct?

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

Ans: d) Tuberculosis (TB) is caused by bacteria (*Mycobacterium tuberculosis*) that most often affect the lungs. Tuberculosis is curable and preventable.

- TB is spread from person to person through the air. When people with lung TB cough, sneeze or spit, they propel the TB germs into the air. A person needs to inhale only a few of these germs to become infected.

37) With reference to the UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (ICH), consider the following statements:

1. India has been elected to the Intergovernmental Committee of UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (ICH) for the 2022-2026 cycle.
2. The Intergovernmental Committee of the 2003 Convention comprises 24 members and is elected in the General Assembly of the Convention according to the principles of equitable geographical representation and rotation.

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

Ans: c) India has been elected to the Intergovernmental Committee of UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (ICH) for the 2022-2026 cycle.

- India has served as a member of the ICH Committee twice — from 2006 to 2010 and from 2014 to 2018. India will now be a part of two prominent Committees of UNESCO — Intangible Cultural Heritage (2022-2026) and World Heritage (2021-2025).
- The Intergovernmental Committee of the 2003 Convention comprises 24 members and is elected in the General Assembly of the Convention according to the principles of equitable geographical representation and rotation.
- States Members to the Committee are elected for a term of four years.

38) Consider the following statements.

1. Asteroids are rocky objects much smaller than planets, that orbit the Sun.
2. Asteroids were formed after millions of years after the formation of planets and other objects in the solar system.
3. OSIRIS-Rex is European Space Agency's (ESA) first mission to return a sample from an asteroid.

Which of the above statements is/are incorrect?

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

Ans: d) Asteroids are rocky objects that orbit the Sun, much smaller than planets. They are also called minor planets. According to NASA, 994,383 is the count for

known asteroids, the remnants from the formation of the solar system over 4.6 billion years ago.

- Scientists study asteroids to look for information about the formation and history of planets and the sun since asteroids were formed at the same time as other objects in the solar system. Another reason for tracking them is to look for potentially hazardous asteroids.
- OSIRIS-REx mission is NASA's first mission meant to return a sample from the ancient asteroid.

39) With reference to the Sub-categorisation of Other Backward Classes (OBCs), consider the following statements:

1. The Centre extended the tenure of The Commission to Examine Sub-categorisation of Other Backward Classes (OBCs) headed by Justice G Rohini.

2. OBCs are granted 57% reservation in jobs and education under the central government.

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

Ans: a) The Centre extended the tenure of The Commission to Examine Sub-categorisation of Other Backward Classes (OBCs) headed by Justice G Rohini, former Chief Justice of Delhi High Court.

- The Commission, constituted nearly five years ago, has got 10 extensions so far, and now has until January 31 next year to submit its report
- The idea of sub-categorisation of OBCs is to create sub-categories within the larger group of OBCs for the purpose of reservation. OBCs are granted 27% reservation in jobs and education under the central government.
- For OBCs, the debate arises out of the perception that only a few affluent communities among the over 2,600 included in the Central List of OBCs have secured a major part of the 27% reservation.

40) Consider the following statements regarding Base Erosion and Profit Shifting (BEPS).

1. BEPS refers to the phenomenon where companies invest in a host country via shell companies situated in tax havens to reduce their tax liability.
2. India has ratified the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS.
3. The Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS is an outcome of the World Bank BEPS Project.

Which of the above statements is/are correct?

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

Ans: c) The Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting is an outcome of the OECD / G20 Project to tackle Base Erosion and Profit Shifting (the "BEPS Project") i.e., tax planning strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations where there is little or no economic activity, resulting in little or no tax being paid. The companies need not invest via shell companies to be accused of BEPS. India has ratified the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting.

41) With reference to the cloudburst, consider the following statements:

1. A cloudburst refers to an extreme amount of rain that happens in a short period, sometimes accompanied by hail and thunder.
2. The India Meteorological Department (IMD) defines it as unexpected precipitation exceeding 100mm (or 10 cm) per hour over a geographical region of approximately 20 to 30 square km.

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

Ans: c) A cloudburst refers to an extreme amount of rain that happens in a short period, sometimes accompanied by hail and thunder, and this has a precise definition.

The India Meteorological Department (IMD) defines it as unexpected precipitation exceeding 100mm (or 10 cm) per hour over a geographical region of approximately 20 to 30 square km.

Significant amounts of rainfall such as this can result in floods.

42) Consider the following statements regarding Red Sanders.

1. Red Sanders is a flora-species that is endemic to a distinct tract of forests in Eastern Ghats region of Andhra Pradesh.
2. Red Sanders is also listed in Appendix-II of the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES).
3. Operation Rakth Chandanis related to surveillance of export of Red Sanders.
4. The export of Red Sanders from India is prohibited as per the Foreign Trade Policy.

Which of the above statements is/are correct?

- a) 1, 2, 3  
b) 2, 3, 4  
c) 1, 2  
d) 1, 2, 3, 4

Ans: d) Directorate of Revenue Intelligence (DRI) had recently recovered 14.63 MT of Red Sanders. Intelligence was developed by DRI that red sanders logs were concealed in an export consignment declared to contain "assorted toiletries", for being smuggled out of the country. Accordingly, Operation Rakth Chandan was launched and close surveillance was kept on the suspect export consignment.

Red Sanders is a flora-species that is endemic to a distinct tract of forests in Eastern Ghats region of Andhra Pradesh and fall under 'endangered list' in the International Union for Conservation of Nature (IUCN)

Red List. Red Sanders is also listed in Appendix-II of the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES). Its rich hue and therapeutic properties are responsible for its high demand across Asia, particularly China, for use in cosmetics, medicinal products and high-end furniture/woodcraft. The export of Red Sanders from India is prohibited as per the Foreign Trade Policy.

43) North Macedonia is a country in:

- A. Europe  
B. Asia  
C. South America  
D. North America

Ans: a) North Macedonia is a country in Southeast Europe. It gained independence in 1991 as one of the successor states of Yugoslavia. It is a landlocked country bordering Kosovo to the northwest, Serbia to the north, Bulgaria to the east, Greece to the south, and Albania to the west.

North Macedonia has been an EU candidate for 17 years. The country emerged from the breakup of Yugoslavia in the 1990s and sought to forge a strong national identity.

44) Consider the following statements regarding Whale sharks.

1. Whale sharks are the largest fish in the sea.
2. They feed on plankton and travel large distances to find enough food to sustain their huge size, and to reproduce.
3. They are mainly found in the temperate oceans of the world.
4. They are easily distinguished by their white spotted colouration.

Which of the above statements is/are correct?

- a) 1, 2  
b) 1, 2, 3  
c) 1, 2, 4  
d) 2, 3, 4



Ans: c) Whale sharks (*Rhincodon typus*) are the largest shark, and indeed largest of any fishes alive today. They feed on plankton and travel large distances to find enough food to sustain their huge size, and to reproduce. Whale sharks are found in all the tropical oceans of the world. Their white spotted colouration makes these gentle giants easy to distinguish, and popular with snorkelers and divers at sites where they aggregate off the coast.

45) With reference to the heritage trees, consider the following statements:

1. In Chandigarh, a tree with an estimated age of 100 years, or more, is declared a 'heritage property'.
2. The age of Chandigarh's heritage trees are based on old maps and records.

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

Ans: c) A student studying at Carmel Convent School in Chandigarh was crushed to death after a 250-year-old tree fell on her inside the school complex.

The peepal (sacred fig) had been declared a "heritage property" by the Chandigarh administration. In Chandigarh, a tree with an estimated age of 100 years, or more, is declared a 'heritage property'. Though the age of the tree can be calculated using a carbon dating technique, the age of Chandigarh's heritage trees are based on other proof, such as old maps and records. The process to declare trees as heritage was completed after a three-year exercise in December 2017.

Declaring a tree as heritage property accords it special status. Heritage trees are guarded. A board is installed near each tree with information on their age, life history and importance.

46) What is Sitagliptin, recently seen in news?

- A. A blood sugar-lowering drug
- B. Crypto currency
- C. Newly found galaxy

D. None of the above

Ans: a) Sitagliptin is a blood sugar-lowering drug. It was first in the category called gliptins, where a protein called DPP-4 is restrained by it, and this impacts the metabolic system so that the pancreas is prompted to increase insulin secretion and regulate sugar in the blood.

- It was the drug of choice for treating type-2 diabetes where the body cannot regulate the blood sugar levels because it either does not produce enough insulin or resists its impact

47) Consider the following statements.

1. While La Niña conditions enhance the rainfall associated with the Northeast monsoon, it has a negative impact on rainfall associated with the Southwest monsoon.
2. During El Niño, there is abnormal surface warming observed along the eastern and central regions of the Pacific Ocean.

Which of the above statements is/are incorrect?

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

Ans: a) While El Niño the expression heard more commonly in India, is the abnormal surface warming observed along the eastern and central regions of the Pacific Ocean (region between Peru and Papua New Guinea), La Niña (Spanish for 'little girl') is an abnormal cooling of these surface waters.

- Together, the El Niño and La Niña phenomena are termed as El Niño Southern Oscillation (ENSO). These are large-scale ocean phenomena which influence the global weather — winds, temperature and rainfall. They have the ability to trigger extreme weather events like droughts, floods, hot and cold conditions, globally.
- While La Niña conditions enhance the rainfall associated with the Southwest monsoon, it has a negative impact on rainfall associated with the Northeast monsoon.

48) In which one of the following States is Singalila National Park located?

- A. West Bengal
- B. Assam
- C. Nagaland
- D. Gujarat

Ans: a) The Singalila National Park in West Bengal, will soon get new red pandas.

- A zoo in the picturesque Darjeeling Hills has started an ambitious programme to augment the wild red panda population.
- In the first rewilding programme of red pandas (*Ailurus fulgens*) in India, the Padmaja Naidu Himalayan Zoological Park will release 20 of these furry endangered mammals in about five years to the forests.

49) Which of the following are the Benefits of blockchain technology?

1. Blockchain technology records and validate each and every transaction made.
2. There is no need of any third-party or central authority for peer-to-peer transactions.
3. The transactions made are immutable and can prevent it from hacking.

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: d) Benefits of blockchain technology:

- As a public ledger system, blockchain records and validate each and every transaction made, which makes it secure and reliable
- All the transactions made are authorized by miners, which makes the transactions immutable and prevent it from the threat of hacking.

- Blockchain technology discards the need of any third-party or central authority for peer-to-peer transactions.
- It allows decentralization of the technology.

50) Which of the following countries are known as the Four Asian Tigers?

1. South Korea
2. India
3. Taiwan
4. Singapore
5. Hong Kong

Select the correct answer code:

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

Ans: b) The Four Asian Tigers are the economies of South Korea, Taiwan, Singapore and Hong Kong. Between the early 1960s and 1990s, they underwent rapid industrialization and maintained exceptionally high growth rates of more than 7 per cent a year.

51) With reference to the Indian Economy, consider the following statements:

1. According to the Union Ministry of Finance current account deficit (CAD) could, however, deteriorate this year mainly due to rising trade deficits.
2. Retail inflation eased slightly to 7.01% in June 2022.

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

Ans : C) India's macro risks have receded in recent weeks and concerns about the fiscal deficit target being breached may be misplaced, the Finance Ministry asserted, while conceding that the current account

deficit (CAD) could, however, deteriorate this year mainly due to rising trade deficits.

- Identifying elevated inflation and a widening trade deficit as 'twin challenges' for the economy, the Ministry, however, emphasised that economic activity in the country remained resilient almost five months into the Russian-Ukraine conflict.
- Data released recently showed the trade deficit widened in June to an all-time high of \$26.2 billion as imports surged past \$66 billion.
- Retail inflation eased slightly to 7.01% in June, and the Ministry attributed it to measures taken by the government and the central bank as well as fears of a global recession that had dragged oil prices lower.

52) CAATSA is a law that came into effect in the US in 2017, meant to punish countries having deep engagements with

- 1) Russia
- 2) North Korea
- 3) Iraq

Select the correct answer code:

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

Ans: B) CAATSA is a law that came into effect in the US in 2017, meant to punish countries having deep engagements with Russia, North Korea, and Iran using economic sanctions. It said countries having a "significant transaction" with Russian intelligence and military agents will be subject to at least five kinds of sanctions.

- Ordinary transactions will not invite sanctions, and the decision of who has sanctions imposed on them comes down to the interpretation of "significant transaction". This is one of the various waivers or exemptions mentioned, such as the transaction not affecting US strategic interests, not endangering the alliances it is a part of, etc.

53) With reference to the Monkeypox, consider the following statements:

1. It initially presents like any tropical disease with fever, headache, joint ache and possible swelling of the lymph glands.
2. The first known lab-confirmed case of monkeypox in India has been reported in Gujarat.

Which of the statements given above is/are correct?

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

Ans: A) Monkeypox initially presents like any tropical disease with fever, headache, joint ache and possible swelling of the lymph glands. The incubation period for the disease — the time from exposure to the virus to the manifestation of symptoms — ranges from five to 21 days.

- Rashes appear on the face, inside palms and the body one to four days after fever.
- The course of the disease could last two to four weeks, during which time the rashes progress into pustules, vesicular lesions and scabs.
- Transmission happens only through close contact and by touching or sharing the clothes or bedding used by the patient, because the lesions usually have a high viral load. Transmission also extends throughout the course of the illness, till the lesions heal.

54) Consider the following statements regarding derecho, recently seen in news.

- 1) Derecho is associated with a "band of rapidly moving showers or thunderstorms".
- 2) Being a cold-weather phenomenon, a derecho generally occurs during winter time.
- 3) They occur only across central and eastern parts of the United States.

Which of the above statements is/are correct?

- a) 1 only
- b) 1, 2
- c) 2, 3

d) 1, 3

Ans: A) A derecho, is “a widespread, long-lived, straight-line windstorm” that is associated with a “band of rapidly moving showers or thunderstorms”.

- Being a warm-weather phenomenon, a derecho generally – not always – occurs during summertime beginning May, with most hitting in June and July. However, they are a rare occurrence as compared to other storm systems like tornadoes or hurricanes.
- For a storm to be classified as a derecho it must have wind gusts of at least 93 km per hour; wind damage swath extending more than 400 km.

55) With reference to the horticulture production in 2021-22, consider the following statements:

- 1) The total horticulture production in 2021-22 is estimated to be 341.63 million tonnes (MT).
- 2) The fruit production is estimated at 107.1 MT compared to 102.48 MT in 2020-21.

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

Ans: C) The total horticulture production in 2021-22 is estimated to be 341.63 million tonnes (MT), an increase of about 7.03 MT or 21% over the 2020-21 figure, according to the second advanced estimates of area and production of various horticultural crops released by the Union Agriculture Ministry.

56) With reference to the Common University Entrance Test-Undergraduate, consider the following statements:

1. The National Eligibility-cum-Entrance Test-Undergraduate is the biggest entrance test in India with an average of 18 lakh registrations.
2. Class 12 marks and not CUET score, would be mandatory for admission to 45 Central universities.

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

Ans: A) The National Eligibility-cum-Entrance Test-Undergraduate is the biggest entrance test in India with an average of 18 lakh registrations.

- The UGC chief announced in March that a CUET score, and not Class 12 marks, would be mandatory for admission to 45 Central universities.

57) Consider the following statements.

- 1) Judicial review is considered a basic structure of the constitution.
- 2) The term ‘untouchability’ has been defined in Untouchability (Offences) Act, 1955
- 3) Article 11 declares that all laws that are inconsistent with or in derogation of any of the fundamental rights shall be void.

Which of the above statements is/are correct?

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

Ans: C) Judicial review is considered a basic structure of the constitution.

- The term ‘untouchability’ has not been defined either in the Constitution or in the Act.

Article 13 declares that all laws that are inconsistent with or in derogation of any of the fundamental rights shall be void. In other words, it expressly provides for the doctrine of judicial review. This power has been conferred on the Supreme Court (Article 32) and the high courts (Article 226) that can declare a law unconstitutional and invalid on the ground of contravention of any of the Fundamental Rights.

58) Which of the following countries is/are part of I2U2 grouping?

- 1. India

2. Israel
3. Uganda

Select the correct answer using the code given below:

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

Ans: A) India will provide “appropriate land” for “food parks” across the country that will be built in collaboration with Israel, the United States and the United Arab Emirates.

- The plan for the “integrated food parks” was announced in a joint statement after the leaders of the I2U2 grouping — India, Israel, the UAE and the U.S. — held a summit recently.

59) Consider the following statements regarding Li-Fi Technology.

- 1) Li-Fi is a wireless technology that makes use of High frequency radio waves to transmit data at terabits per second speeds.
- 2) Li-Fi can work underwater, where Wi-Fi fails completely.

Which of the above statements is/are incorrect?

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

Ans: A) Li-Fi, or light fidelity, invented by German physicist and professor Harald Haas, is a wireless technology that makes use of visible light in place of radio waves to transmit data at terabits per second speeds—more than 100 times the speed of Wi-Fi.

- Li-Fi offers great promise to overcome the existing limitations of Wi-Fi by providing for data-heavy communication in short ranges.
- Li-Fi can also easily work underwater, where Wi-Fi fails completely, thereby throwing open endless

opportunities for military and navigational operations.

60) What is ‘Dunagiri’?

- A. The fourth ship of P17A Frigates
- B. Nuclear-powered submarine
- C. Aircraft carrier
- D. Nuclear powered icebreaker

Ans: A) Dunagiri, a Project 17A frigate, will be launched into the Hooghly river at Garden Reach Shipbuilders and Engineers Limited, Kolkata on 15 July 2022.

- Christened after a mountain range in the state of Uttarakhand, ‘Dunagiri’ is the fourth ship of P17A Frigates.

These are follow-on of the P17 Frigates (Shivalik Class) with improved stealth features, advanced weapons and sensors and platform management systems.

61) With reference to the National e-Governance Service Delivery Assessment, consider the following statements:

1. The website of the Ministry of Finance has been ranked first under the Central Ministries Portal in National e-Governance Service Delivery Assessment.
2. There were four main parameters of assessment, Accessibility, Content Availability, Ease of Use and Information Security and Privacy for Central Ministry Portals.

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

Ans: B) The website of the Ministry of Home Affairs (MHA) has been ranked first under the Central Ministries Portal in National e-Governance Service Delivery Assessment.



- Digital Police portal of National Crime Records Bureau (NCRB) placed at two in the assessment under the Central Ministries Services Portal.
- All Government portals that were evaluated were divided into two main categories, states and Union Territories and Central Ministry service portals.
- There were four main parameters of assessment, Accessibility, Content Availability, Ease of Use and Information Security and Privacy for Central Ministry Portals.

62) Nuclear science is being utilized in which of the following areas of agriculture in India?

- 1) Radiation processing of food items
- 2) Development of high yielding crop seeds
- 3) Fertilizer and pesticide related studies

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: D) The nuclear agriculture programme of Bhabha Atomic Research Centre (BARC) covers development of high yielding crop seeds using nuclear techniques, fertilizer and pesticide related studies, radiation processing of food items and other areas.

63) With reference to the mascot Jagriti, consider the following statements:

1. The Department of Consumer Affairs has launched “Jagriti”, a mascot for empowering consumers and generating awareness towards their rights.
2. Jagriti mascot shall be shown along with tagline “Jago Grahak Jago” in all its media campaigns.

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

Ans: C) The Department of Consumer Affairs has launched “Jagriti”, a mascot for empowering consumers and generating awareness towards their rights.

- Jagriti will be projected as an empowered consumer who is spreading awareness about consumer rights and addressing solutions to the problems faced by the consumers.
- The “Jagriti” mascot will be used to generate consumer awareness about various themes of the Department.

64) Which of the following schedules of the constitution gives a clear constitutional recognition to the existence of the system of “political parties” in India?

- a) Third Schedule
- b) Tenth Schedule
- c) Seventh Schedule
- d) Ninth Schedule

Ans: B) The Tenth Schedule of the Constitution (which embodies the anti-defection law) is designed to prevent the evil or mischief of political defections motivated by the lure of office or material benefits or other similar considerations. Since the anti-defection provisions clearly mention the existence of political parties (and members being disqualified on leaving its membership), the Tenth schedule recognizes the system of political parties.

65) With reference to the apex committee for Performance and Efficiency Audit, consider the following statements:

1. Defence Ministry has set up an apex committee with Defence Secretary as Chairman to conduct a Performance and Efficiency Audit into various aspects of its activities.
2. It is a major shift from the existing transaction-based compliance audit to carry out an outcome-based Performance and Efficiency Audit aimed at enhancing overall efficiency.

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

Ans: C) Defence Ministry has set up an apex committee with Defence Secretary as Chairman to conduct a Performance and Efficiency Audit into various aspects of its activities.

- This kind of audit is expected to provide valuable inputs to the top management of the Ministry in planning and execution of projects, and suggest systemic improvements in internal controls, soundness of financial procedures and identification of risk factors.
- It is a major shift from the existing transaction-based compliance audit to carry out an outcome-based Performance and Efficiency Audit aimed at enhancing overall efficiency.

66) With reference to the e-commerce exports of jewellery through courier mode, consider the following statements:

1. The framework keeps in view the need for uniformity of action by Customs that brings certainty for the trade.
2. The first phase begins with exports through Bengaluru, Delhi and Mumbai locations.

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

Ans: C) Finance Ministry has issued a simplified regulatory framework for e-commerce exports of jewellery through courier mode.

- The framework keeps in view the need for uniformity of action by Customs that brings certainty for the trade. It also addresses a unique requirement of the e-commerce Eco-system for re-import of rejects in certain cases to the prescribed extent.
- The Ministry said, the Central Board of Indirect Taxes and Customs has issued the simplified

regulatory framework in the form of a Standard Operating Procedure (SOP).

- The SOP details the handling, movement, and procedural aspects of exports, based on electronic declarations, through International Courier Terminals.
- The Ministry said, a period of one month has been provided for transition. The first phase begins with exports through Bengaluru, Delhi and Mumbai locations.

67) Consider the following statements regarding Western Ghats.

1. The Western Ghats are second only to the Eastern Himalaya as a treasure trove of biological diversity in India.
2. Western Ghats region runs from the mouth of the river Tapti near the border of Gujarat and Maharashtra to Kanyakumari.
3. K. Kasturirangan committee designated the entire hill range of Western Ghats as an Ecologically Sensitive Area (ESA).

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Ans: A) Recognised as one of the world's biodiversity hotspots, the Western Ghats region runs to a length of 1,600 km starting from the mouth of the river Tapti near the border of Gujarat and Maharashtra to Kanyakumari, the southernmost tip of India in Tamil Nadu. It stretches over the six States of Tamil Nadu, Karnataka, Kerala, Goa, Maharashtra and Gujarat. The Ghats are second only to the Eastern Himalaya as a treasure trove of biological diversity in the country.

The WGEEP report, popular as Gadgil report, had designated the entire hill range as an Ecologically Sensitive Area (ESA). It had classified the 142 taluks in the Western Ghats boundary into three Ecologically Sensitive Zones (ESZs).

68) With reference to the Mission Shakti Scheme, consider the following statements:

1. Mission Shakti has two sub-schemes - Sambal and Samarthya.
2. The components of the Sambal sub-scheme do not consist of One Stop Centre.

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

Ans: A) Women and Child Development Ministry has issued guidelines for Mission Shakti Scheme.

- This scheme has been launched for the safety, security and empowerment of women.
- Mission Shakti has two sub-schemes - Sambal and Samarthya. While the Sambal stresses on safety and security of women, the Samarthya focuses on the empowerment of women.
- The components of the Sambal sub-scheme consist of schemes including One Stop Centre, Women Helpline, Beti Bachao, Beti Padhao and Nari Adalats.
- The components of the Samarthya sub-scheme consist of schemes of Ujjwala, Swadhar Greh and Working Women Hostel.

69) Build Back Better World (B3W) is the initiative undertaken by

- a) G7 Countries
- b) G20 Countries
- c) ASEAN
- d) OECD

Ans: A) Build Back Better World (B3W) is an initiative undertaken by G7 countries. Launched in June 2021, the initiative is designed to counter China's strategic influence of the BRI Project (Belt and Road Initiative) by providing an alternative to the Belt and Road Initiative for the infrastructure development of the low- and middle-income countries.

70) With reference to the Mission Indradhanush and Intensified Mission Indradhanush (IMI), consider the following statements:

1. Mission Indradhanush was launched in 2017.
2. The ultimate goal of Mission Indradhanush is to ensure full immunization with all available vaccines for children up to two years of age and pregnant women.

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

Ans: B) Mission Indradhanush was launched in December 2014.

- The ultimate goal of Mission Indradhanush is to ensure full immunization with all available vaccines for children up to two years of age and pregnant women.
- Earlier the increase in full immunization coverage was 1% per year which has increased to 6.7% per year through the first two phases of Mission Indradhanush.
- Intensified Mission Indradhanush (IMI): IMI was launched in October 2017 to further intensify the immunization programme.
- The aim is to reach every child up to two years of age and all those pregnant women who have been left uncovered under the routine immunisation programme/UIP.

71) Consider the following statements about Puri Jagannath Temple::

- 1) It is one of the most revered Shaivism sites of worship in India.
- 2) Its main shrine was built by Anantavarman of the Chodaganga dynasty in the tenth century.

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

Ans: B) About Puri Jagannath Temple:

It is an important Vaishnavite temple dedicated to Jagannath, a form of Sri Krishna in Puri in Odisha. The temple is believed to have been constructed in the 12th century by King Anatavarman Chodaganga Deva of the Eastern Ganga Dynasty.

Jagannath Puri temple is called 'Yamanika Tirtha' where, according to the Hindu beliefs, the power of 'Yama', the god of death has been nullified in Puri due to the presence of Lord Jagannath. The Puri temple is famous for its annual Ratha Yatra, or chariot festival, in which the three principal deities are pulled on huge and elaborately decorated temple cars.

72) Consider the following statements:

- 1) In India, an individual attains the age of majority at 18 as per the Prohibition of Child Marriage Act, 2006.
- 2) Currently, the law prescribes that the minimum age of marriage is 21 and 18 years for men and women, respectively.

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

Ans: b) Currently, the law prescribes that the minimum age of marriage is 21 and 18 years for men and women, respectively.

The minimum age of marriage is distinct from the age of majority, which is gender-neutral. An individual attains the age of majority at 18 as per the Indian Majority Act, 1875.

73) Consider the following statements about the Goods and Services Tax (GST) Council:

- 1) It is a constitutional body under Article 292.
- 2) It was introduced by the Constitution (One Hundred and First Amendment) Act, 2016.
- 3) It is chaired by the Union Finance Minister.

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

Ans: B) The GST council is the key decision-making body that will take all important decisions regarding the GST.

Article 279A (4) specifies that the Council will make recommendations to the Union and the States on the important issues related to GST, such as, the goods and services will be subject or exempted from the Goods and Services Tax.

It was introduced by the Constitution (One Hundred and First Amendment) Act, 2016.

The GST Council is chaired by the Union Finance Minister and other members are the Union State Minister of Revenue or Finance and Ministers in-charge of Finance or Taxation of all the States.

74) Consider the following statements about Pangong Tso:

- 1) It is very close to Chusul Valley.
- 2) It is formed from Tethys geosyncline.
- 3) It is a salt water lake.

Which of the given above statements is/are correct?

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

Ans: D) S1: Pangong Tso is strategically crucial as it is very close to Chusul Valley, which was one of the battlefronts between India and China during the 1962 war.

S2: It is formed from Tethys geosyncline.

S3: It is a salt water lake.

75) With reference to New Development Bank (NDB), consider the following statements:

- 1) It is a multilateral development bank established by the BRICS states.
- 2) It is headquartered in Shanghai, China.
- 3) India is the largest shareholder in NDB.

Which of the given above statements is/are correct?

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

Ans: A) About NDB:

It is a multilateral development bank operated by the BRICS states (Brazil, Russia, India, China and South Africa).

It was agreed to by BRICS leaders at the 5th BRICS summit held in Durban, South Africa in 2013.

It was launched in 2015, at the 6th BRICS Summit at Fortaleza, Brazil.

The bank is set up to foster greater financial and development cooperation among the five emerging markets.

Headquartered in Shanghai, China.

In 2018, the NDB received observer status in the United Nations General Assembly, establishing a firm basis for active and fruitful cooperation with the UN.

76) Santhal tribe, mainly resides in which of the following state?

- A. Odisha
- B. Kerala
- C. Gujarat
- D. Punjab

Ans: a) Former Jharkhand Governor and National Democratic Alliance (NDA) candidate Droupadi Murmu was elected the 15th President of India, the first tribal woman to be appointed to the position and the youngest as well.

- Ms. Murmu, who had been a former Governor of Jharkhand, hails from the Santhal tribe and was born in Mayurbhanj, coming up the hard way in life, graduating and teaching in Odisha before entering politics at the local body level and later being

elected MLA and serving as a Minister from 2000 to 2004.

77) Which of the following are related to regulations and steps taken to check food adulteration?

- 1) Consumer Protection Act, 2019
- 2) Codex Alimentarius Commission
- 3) Harmonised System (HS) code

Select the correct answer code:

- (a) 1 only
- b) 1, 2
- c) 1, 3
- d) 1, 2, 3

Ans: D)

**Regulations and steps taken to check food adulteration in India**

- **Food Safety and Standards Authority of India (FSSAI)**
  - It imposes a penalty for the import, manufacture, storage, sale or distribution of any injurious and non-injurious adulterants under Food Safety and Standards Act, 2006.
  - FSSAI has released a manual 'Detect Adulteration with Rapid Test (DART)' for quick detection of adulterants in everyday food items.
  - FSSAI released directives on import of golden syrup, invert sugar syrup and rice syrup used for adulteration in honey.
- **Consumer Protection Act, 2019:** It provides for a three tier quasi-judicial machinery at national, state and district level to provide simple and speedy redressal to consumer disputes.
- **Codex Alimentarius commission:** It adopts international food standards, guidelines and codes of practice which contribute to the safety, quality and fairness of this international food trade.
- **Harmonised system (HS) code:** It describes the type of good that is shipped, so certain items that are used for adulteration can be scrutinized well during custom clearance.

78) India Innovation Index, 2022, recently seen in news, is published by:

- A. NITI Aayog
- B. World Bank
- C. WEF
- D. None of the above

Ans: a) Karnataka has bagged the top rank in NITI Aayog's India Innovation Index, 2022, which determines innovation capacities and ecosystems at the sub-national level. The State has held this position, under the Major States category, in all three editions of the Index so far.

79) Consider the following statements.



- 1) The Fundamental Duties are held obligatory for all citizens subject to the State enforcing the same by means of a valid law.
- 2) Any law that even though it deviates from the Fundamental Rights, but has been made to give effect to the Directive Principles in Article 39(b) and Article 39(c) would not be deemed invalid.

Which of the above statements is/are incorrect?

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

Ans: d) The Relationship Between the Fundamental Rights, Directive Principles and Fundamental Duties:

- Directive Principles have been used to uphold the Constitutional validity of legislation in case of conflict with Fundamental Rights.
- According to the amendment of 1971, any law that even though it deviates from the Fundamental Rights, but has been made to give effect to the Directive Principles in Article 39(b) and Article 39(c) would not be deemed invalid.
- The Fundamental Duties will be held obligatory for all citizens subject to the State enforcing the same by means of a valid law.

80) Nord Stream pipeline is located in:

- A. Europe
- B. South America
- C. North America
- D. Africa

Ans: a) Russia restored critical gas supplies to Europe through Germany via the Nord Stream pipeline after 10 days of maintenance, but uncertainty lingered over whether the Kremlin would still trigger an energy crisis on the continent this winter.

81) With reference to the right to a safe abortion, consider the following statements:

- 1) According to Supreme Court of India, denying an unmarried woman the right to a safe abortion violates her personal autonomy and freedom.
- 2) According to Supreme Court of India, the court noted that an amendment to the Act in 2021 had substituted the term 'husband' with 'partner'.

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

Ans: c) Denying an unmarried woman the right to a safe abortion violates her personal autonomy and freedom, the Supreme Court held in an order.

- A Bench led by Justice D.Y. Chandrachud was hearing the appeal of a woman who wanted to abort her 24-week pregnancy after her relationship failed and her partner left her.
- The court noted that an amendment to the Act in 2021 had substituted the term 'husband' with 'partner', a clear signal that the law covered unmarried women within its ambit.
- A woman's right to reproductive choice is an inseparable part of her personal liberty under Article 21 of the Constitution. She has a sacrosanct right to bodily integrity.

82) The multiple rocket launcher produced in India and developed by the Defence Research and Development Organisation (DRDO) for the Indian Army is named as

- A. Pralay
- B. Pinaka
- C. Python
- D. Pratyush

Ans: b) Pinaka is a multiple rocket launcher produced in India and developed by the Defence Research and Development Organisation (DRDO) for the Indian Army. Pinaka saw service during the Kargil War, where it was successful in neutralising enemy positions on the mountain tops. It has since been inducted into the Indian Army in large numbers.

83) With reference to the Indian Antarctic Bill, 2022, consider the following statements:

1. The Bill seeks to give effect to the Antarctic Treaty, the Convention on the Conservation of Antarctic Marine Living Resources, and the Protocol on Environmental Protection to the Antarctic Treaty.
2. The provisions of the Bill will apply to any person, vessel or aircraft that is a part of an Indian expedition to Antarctica under a permit issued under the Bill.

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

Ans: c) The Lok Sabha deferred the consideration and passing of the Indian Antarctic Bill, 2022, due to protests by the Congress members outside of Parliament over the Enforcement Directorate's summoning of their party president Sonia Gandhi for questioning.

- The Indian Antarctic Bill, 2022 was introduced in Lok Sabha on April 1, 2022.
- The Bill seeks to give effect to the Antarctic Treaty, the Convention on the Conservation of Antarctic Marine Living Resources, and the Protocol on Environmental Protection to the Antarctic Treaty.
- Applicability: The provisions of the Bill will apply to any person, vessel or aircraft that is a part of an Indian expedition to Antarctica under a permit issued under the Bill.

84) In India, Internal Debt comprises

1. Loans raised in the open market
2. Treasury bills issued to State Governments and Commercial Banks.
3. Non-interest bearing rupee securities issued to International Financial Institutions.

Select the correct answer code:

- a) 1, 2

b) 1, 3

c) 2, 3

d) 1, 2, 3

Ans: d) Internal Debt comprises loans raised in the open market, compensation and other bonds, etc. It also includes borrowings through treasury bills including treasury bills issued to State Governments, Commercial Banks and other Investors, as well as non-negotiable, non-interest bearing rupee securities issued to International Financial Institutions

85) The World's longest land border occurs between

- a) India and Bangladesh
- b) Russia and China
- c) Canada and United States
- d) Chile and Argentina

Ans: c) Canada's border with the United States is the world's longest international border, at 8,890 km.

86) With reference to the monkeypox, consider the following statements:

1. World Health Organization (WHO) has declared monkeypox a global health emergency.
2. The classification is the highest alert that the WHO can issue and follows a worldwide upsurge in cases.

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

Ans: c) World Health Organization (WHO) has declared monkeypox a global health emergency.

- It came at the end of the second meeting of the WHO's emergency committee on the virus.
- The classification is the highest alert that the WHO can issue and follows a worldwide upsurge in cases.
- There are only two other such health emergencies at present - the coronavirus pandemic and the continuing effort to eradicate polio.

87) Consider the following statements.

1. Low-pressure zones tend to draw air toward them.
2. Changes in the jet stream can increase the frequency and intensity of heat waves in Europe.
3. As the Arctic warms at a faster rate, the temperature differential between it and the equator increases.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: a) Now temperatures across Europe are soaring yet again, at or near triple digits from Spain to the British Isles and spreading east.

- Low-pressure zones tend to draw air toward them. In this case, the low-pressure zone has been steadily drawing air from North Africa toward it and into Europe.
- Heat waves in Europe had increased in frequency and intensity over the past four decades, and linked the increase at least in part to changes in the jet stream. The researchers found that many European heat waves occurred when the jet stream had temporarily split in two, leaving an area of weak winds and high-pressure air between the two branches that is conducive to the buildup of extreme heat
- Warming in the Arctic, which is occurring much faster than other parts of the world, may play a role. As the Arctic warms at a faster rate, the temperature differential between it and the equator decreases. This leads to a decrease in summertime winds, which has the effect of making weather systems linger for longer.

88) With reference to the Flag Code of India, consider the following statements:

1. The government has amended the Flag Code of India to allow the tricolour to be displayed in the open and on individual houses or buildings through day and night.
2. The Flag Code of India was earlier amended on December 30, 2021, allowing the use of polyester, apart

from cotton, wool, silk and khadi for making hand-spun, hand-woven and machine-made flags.

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

Ans: c) The government has amended the Flag Code of India to allow the tricolour to be displayed in the open and on individual houses or buildings through day and night.

- The provision earlier allowed the flag, when displayed in the open, to be flown from sunrise to sunset as far as possible.
- Now, a member of the public, a private organisation or an educational institution is allowed to hoist the flag on all days and occasions, ceremonial or otherwise, consistent with dignity and honour of the national flag. The move comes ahead of 75th anniversary of Indian Independence.
- The Flag Code of India was earlier amended on December 30, 2021, allowing the use of polyester, apart from cotton, wool, silk and khadi for making hand-spun, hand-woven and machine-made flags.

89) Consider the following statements.

1. The Constitution of India provides for designation of Tribal areas in terms of Fifth Schedule and designation of Scheduled areas in terms of sixth Schedule.
2. According to the Constitution of India, specification of a 'Scheduled Area' or modification of an existing Scheduled Area is done after consultation with the Governor of that state and through notification issued with the approval of the President of India.
3. The state of Uttarakhand has neither Scheduled areas nor Tribal areas.

Which of the above statements is/are correct?

- a) 1, 2
- b) 2 only
- c) 2, 3

d) 1, 3

Ans: (C)

(e): As per available record neither the "Scheduled Areas" in the Constitution, nor the "Tribal Areas" under article 244(2) of notified in the State of Uttarakhand so far.

90) With reference to the *Athelia rolfsii*, consider the following statements:

1. It is perhaps the first time that fruit rot caused by the fungus *Athelia rolfsii* is being reported in jackfruit (*Artocarpus heterophyllus*) in India.
2. A soil-borne fungal pathogen, *Athelia rolfsii* is a major threat to several crops.

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

Ans: c) It is perhaps the first time that fruit rot caused by the fungus *Athelia rolfsii* is being reported in jackfruit (*Artocarpus heterophyllus*) in India.

- A soil-borne fungal pathogen, *Athelia rolfsii* is a major threat to several crops and, hence, the new development warrants immediate attention.
- *Athelia rolfsii* is a soil-borne fungal pathogen with a wide host range which attacks various commercially cultivated crops belonging to different families. But this is the first time it is being reported in jackfruit in the country.
- One disease which is found in immature jackfruit is the Rhizopus fruit rot, but it does not affect mature fruit.

91) With reference to the Aadi Krithigai, consider the following statements:

1. Aadi Krithigai is an important festival celebrated in the Tamil month of Adi or Aadi.
2. The festival is dedicated to Lord Muruga or Subramanya.

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

Ans: C) Aadi Krithigai is an important festival celebrated in the Tamil month of Adi or Aadi. In 2022, the date of Aadi Krithigai is July 23. The festival is dedicated to Lord Muruga or Subramanya.

- Incidentally, the festival is also referred as Aadi Krittika, Kirthigai, Kritika and Krithika. The festival is celebrated with fervor in the Murugan Temples in Tamilnadu.
- As per some beliefs Muruga first appeared on earth on Aadi Krithigai day.
- Aadi Krithigai in some regions is celebrated to symbolize the victory of good over evil when Murugan slew the demon Surapadman.

92) The criteria for declaration of Scheduled areas include:

1. Preponderance of tribal population
2. Compactness and reasonable size of the area
3. Economic backwardness of the area as compared to neighbouring areas

Select the correct answer code:

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) 1, 2, 3

Ans: D)

For declaration of Scheduled Areas the criteria followed are - preponderance of tribal population, compactness and reasonable size of the area, a viable administrative entity such as a district, block or taluk, and economic backwardness of the area as compared to neighboring areas.

93) With reference to the All India Institute of Ayurveda, consider the following statements:

1. It is an autonomous organisation under Ministry of Health and Family Welfare.
2. It aims at bringing synergy between the traditional wisdom of Ayurveda and modern tools and technology.

Which of the statements given above is/are correct?

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

Ans: B) Union Minister of Ayush Shri Sarbananda Sonowal inaugurated Vaccination Centre for children at the All India Institute of Ayurveda (AIIA).

- He also launched the Bal Raksha mobile app, which is aimed at creating awareness of paediatric preventive healthcare through Ayurveda intervention amongst parents.
- The app will also collect feedback from parents regarding the impact of the kit on their children's health and immunity.
- The All India Institute of Ayurveda, an autonomous organisation under Ministry of Ayush, aims at bringing synergy between the traditional wisdom of Ayurveda and modern tools and technology.

94) Consider the following statements regarding Non fungible tokens (NFTs) sometimes seen in news.

1. A non-fungible token (NFT) is an interchangeable unit of data.
2. NFT works on blockchain.
3. Anything that can be converted into a digital form can be an NFT.

Which of the above statements is/are correct?

- a) 1, 2
- b) 2, 3
- c) 1, 3
- d) 1, 2, 3

Ans: B) A non-fungible token (NFT) is a non-interchangeable unit of data stored on a blockchain, a form of digital ledger, that can be sold and traded. Types of NFT data units may be associated with digital files such as photos, videos, and audio. Because each token is uniquely identifiable, NFTs differ from blockchain cryptocurrencies, such as Bitcoin.

- NFTs have drawn increasing criticism for the energy cost and carbon footprint associated with validating blockchain transactions.

Anything that can be converted into a digital form can be an NFT. Everything from your drawings, photos, videos, GIF, music, in-game items, selfies, and even a tweet can be turned into an NFT, which can then be traded online using cryptocurrency.

95) Agastyamalai and Periyar Tiger Reserve, recently seen in news, is located in:

- A. Kerala
- B. Karnataka
- C. Punjab
- D. Gujarat

Ans: A

96) Which of the following article of the Indian constitution deals with the borrowing by States?

- A. Article 293
- B. Article 292
- C. Article 72
- D. None of the above

Ans: A) Article 293 of Indian constitution deals with the borrowing by States (Article 292 regulates borrowing by Central Govt.)

- Under Article 293 (3), state governments are required to take the Centre's permission for fresh borrowing, if they are indebted to the Government of India.
- Every single state is currently indebted to the Centre and thus, all of them require the Centre's consent in order to borrow.

97) Consider the following statements regarding Black Sea.

1. The Black Sea is a marginal Mediterranean Sea of the Atlantic Ocean lying between Europe and Asia.
2. Dardanelles Strait connects the Black Sea to the Sea of Marmara.
3. Russia is the only nation that borders both Black Sea and Caspian Sea.



Which of the above statements is/are correct?

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

Ans: C) The Black Sea is a marginal Mediterranean Sea of the Atlantic Ocean lying between Europe and Asia.

- The Dardanelles Strait, a vital transportation bridge between the Black Sea and Mediterranean Sea, is a narrow channel of water that connects the Aegean Sea to the Sea of Marmara.

98) The Foreign exchange reserves of India consist of which of the following?

- 1. Foreign Currency Assets
- 2. Gold
- 3. SDR

Select the correct answer using the code given below:

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

Ans: D) The Foreign exchange reserves of India consists of below four categories:

- Foreign Currency Assets
- Gold
- SDR
- The SDR is an international reserve asset used by IMF for internal accounting purposes.
- Also known as paper gold, the value of SDR is based on a basket of five currencies - the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.
- Reserve with the International Monetary Fund (also known as reserve tranche position)
- Reserve tranche position is the difference between the IMF's holdings of that country's currency and the country's IMF-designated quota.

99) With reference to the 30×30 target, consider the following statements:

- 1. The 30×30 target implies protection of at least 30 % the of world's land and ocean by 2030.
- 2. High Ambition Coalition (HAC) for Nature and People has been formed in 2021 to promote an international agreement on 30×30 target.
- 3. Recently, India officially joined the High Ambition Coalition for Nature and People.

Which of the statements given above is/are correct?

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

Ans: D) The 30×30 target implies protection of at least 30 % the of world's land and ocean by 2030.

- It is a global target that aims to halt the accelerating loss of species and protect vital ecosystems that are the source of our economic security.
- High Ambition Coalition (HAC) for Nature and People has been formed in 2021 to promote an international agreement on 30×30 target.
- Recently, India officially joined the High Ambition Coalition for Nature and People.

100) National Broadcasting Day was observed on:

- A. July 23
- B. July 14
- C. July 30
- D. August 4

Ans: A) National Broadcasting Day was observed on July 23, 2022.

- On this day in 1927, the first-ever radio broadcast in the country went on the air from the Bombay Station under a private company, the Indian Broadcasting Company
- On the 8th of June, 1936, the Indian State Broadcasting Service became All India Radio.