

JUNE 2022 CURRENT EVENTS

PM IAS initiative

CRACK iT

PM IAS ACADEMY

CREATIVE THOUGHT AND ACTION



SNO	CONTEXT	PAGE NUMBER
1	History, Art & Culture Holy Relics of Lord Buddha	4
2	Geography What is lightning?	5
3	Polity & Constitution 1.Anti-Defection Law 2 Kihoto Hollohan Judgment 3 Reuters Institute Digital News Report 2022 4 Hate speech 5 Inter-State Council 6 The Essence of Time	7
4	Social Justice & Governance 1.Scheme for Residential Education For Students in High schools in Targeted Areas 2 Surrogacy Law Prime Minister Employment Generation Program (PMEGP) 3 CiSS application 4 Jal Jeevan Mission 5 Govt's new guidelines banning surrogate ads 6 Agnipath scheme 7 ADIP Scheme & Rashtriya Vayoshri Yojana 8 National Initiative for Promoting Upskilling of Nirman workers 9 National Air Quality Resource Framework of India 10 Indian laws on abortions 11 Dak Karmayogi 12 Performance Grading Index for Districts 13 Government e-Marketplace 14 National Air Sport Policy 2022 15 State Food Safety Index 16 Mahatma Gandhi National Rural Employment Guarantee Scheme 17 Amrit Sarovar Mission	15
5	International Relations 1.G20 2 Snake Island 3 14th BRICS Summit 4 Group of Seven (G7) 5 China's interventions in the Horn of Africa 6 Partnership for Global Infrastructure and Investment 7 The European Union's ban on Russian oil 8 Mutual Legal Assistance Treaties 9 Organisation of Islamic Cooperation 10 I2U2 Initiative 11 West Seti Power Project 12 How Hanoi and New Delhi Are Fortifying Defense Ties 13 India, EU Resume FTA Negotiations 14 Challenges in Dealing With Indo-Pacific 15 Russia-Ukraine conflict	
6	Indian Economy 1 Index of Eight Core Industries 2 Bad banks 3 The RBI rate hike and its impact	55

	4 The RBI plan to link credit cards with UPI 5 Periodic Labour Force Survey 6 Sovereign Gold Bond Scheme 7 World Competitiveness Index 2022 8 WTO Ministerial Conference 9 Black swan event 10 Open network for digital commerce 11 GST compensation cess 12 Gig Economy 13 Govt. hikes GST for household items 14 Bring The Shine Back on Government Jobs 15 Towards a Single Low Tax Regime 16 The Role of Caste in Economic Transformation 17 Monetary Tightening And Its Impact on Growth	
7	Agriculture 1 Purple Revolution	79
8	Industry & Infrastructure 1 Bharat Gaurav Scheme 2 Bedti-Varada Interlinking Project 3 The Problems Plaguing Thermal Power Generators	79
9	Science & Technology 1 What is Web 5.0? 2 Artillery rockets 3 D2M technology 4 Radio-frequency identification (RFID) technology Vs barcodes 5 World's first liquid-mirror telescope 6 The status of Evtol 7 Agni-4 8 Tiangong space station 9 The science behind the cancer cure 10 Prithvi-II Missile 11 Auctioning 5G spectrum bands 12 Critical information infrastructure 13 CAPSTONE, NASA's new satellite 14 Hermit, the Pegasus-like spyware 15 Black Death 16 eSanjeevani 17 Norovirus 18 Monkeypox Disease 19 Polio 20 World Mental Health Report: WHO 21 Drug Resistant Typhoid 22 Ayushman Bharat Digital Mission 23 Vertical Launch Short Range Surface to Air Missile 24 Next-generation Corvettes 25 Implications of India's New VPN Rules 26 From Higher to Hire Education	83
10	Environment & Ecology 1 NTPC's Biodiversity Policy 2 Sela Macaque 3 Posidonia Australis: World's Largest Plant 4 Eublepharis pictus 5 Eco-sensitive zones 6 Ethanol blending	114

	7 World's first Fishing Cat Census done in Chilika 8 Carbon bombs 9 Green jobs 10 Environmental Performance	
11	Disaster Management 1 Coalition for Disaster Resilient Infrastructure	134
12	Internal Security Challenges 1 Ex Khaan Quest 2022 2 Ex SAMPRITI-X 3 Op Sankalp 4 Unlawful Activities (Prevention) Act, 1967 (UAPA)	137

Holy Relics of Lord Buddha

Focus: GS I- History

Why in News?

- Holy Relics of Lord Buddha to be taken from India to Mongolia for an 11-day exposition on occasion of Mongolia's Buddha Purnima on 14th June, 2022
- The Holy Relics will be displayed at the Batsagaan Temple within the premises of Gandan Monastery.
- The Holy Buddha Relics, currently housed in the National Museum, are known as the 'Kapilvastu Relics' since they are from a site in Bihar first discovered in 1898 which is believed to be the ancient city of Kapilvastu.
- It is another historic milestone in India-Mongolia relations and will further boost cultural and spiritual relations between the two countries.

About Gautama Buddha:

- He was born in Lumbini, near the Indo-Nepal border, as Siddhartha Gautama to a royal family in around 563 BCE.
- His ancestors belonged to the Sakya clan, which governed from Lumbini's Kapilvastu.
- At the age of 29, Gautama left home and abandoned his affluent lifestyle in favour of asceticism, or intense self-discipline. Gautam gained Bodhi (enlightenment) under a pipal tree in Bodhgaya, Bihar, after 49 days of meditation.
- Buddha preached his first sermon in Sarnath, Uttar Pradesh, near Varanasi. Dharma Chakra Pravartana is the name given to this occurrence (turning of the wheel of law).
- He died at the age of 80 in 483 BCE at Kushinagara, Uttar Pradesh. The event is known as Mahaparinibban or Mahaparinirvana.
- He is believed to be the eighth of the ten incarnations of Lord Vishnu (Dashavatar).

About Buddha Purnima:

- It is celebrated to mark the birth of Gautam Buddha, the founder of Buddhism.
- It is also known as Vesak.
- In 1999, it became an UN-designated day, to acknowledge the contribution of Buddhism to society.

GEOGRAPHY

What is lightning?

- **Context:**
- Seventeen people have been killed by lightning over the last two days in various parts of Bihar
- Of all the atmospheric phenomena, lightning perhaps is the most dangerous and mysterious. In India, lightning kills about 2,000-2,500 people every year.

Relevance:

- GS I- Geography

Dimensions of the Article:

1. What is Lightning?
2. More about Clouds that generate lightning and how they are formed
3. What happens when lightning strikes Earth's Surface?
4. Which areas are lightning-prone?
5. How can the effects of lightning strikes be mitigated?

What is Lightning?

- Lightning is a natural 'electrical discharge of very short duration and high voltage between a cloud and the ground or within a cloud', accompanied by a bright flash and sound, and sometimes thunderstorms.
- In simple words, it is a very rapid and massive discharge of electricity in the atmosphere.
- It happens as a result of the difference in electrical charge between the top and bottom of a cloud, or between 2 clouds or between clouds and the ground.

- Inter cloud or intra cloud (IC) lightning are visible and harmless.
- Cloud to ground (CG) lightning is harmful as the 'high electric voltage and electric current' leads to electrocution.

More about Clouds that generate lightning and how they are formed

- The lightning-generating clouds are typically about 10-12 km in height, with their base about 1-2 km from the Earth's surface. The temperatures at the top range from -35°C to -45°C.
- As water vapour moves upwards in the cloud, it condenses into water due to decreasing temperatures. A huge amount of heat is generated in the process, pushing the water molecules further up.
- As they move to temperatures below zero, droplets change into small ice crystals. As they continue upwards, they gather mass, until they become so heavy that they start descending.
- It leads to a system where smaller ice crystals move upwards while larger ones come down. The resulting collisions trigger release of electrons, in a process very similar to the generation of electric sparks. The moving free electrons cause more collisions and more electrons leading to a chain reaction.
- The process results in a situation in which the top layer of the cloud gets positively charged while the middle layer is negatively charged.
- In little time, a huge current, of the order of lakhs to millions of amperes, starts to flow between the layers.

What happens when lightning strikes Earth's Surface?

- The Earth is a good conductor of electricity. While electrically neutral, it is relatively positively charged compared to the middle layer of the cloud. As a result, an estimated 20-25% of the current flow is directed towards the Earth. It is this current flow that results in damage to life and property.
- Lightning has a greater probability of striking raised objects on the ground, such as trees or buildings.
- Lightning Conductor is a device used to protect buildings from the effect of lightning. A metallic rod, taller than the building, is installed in the walls of the building during its construction.
- The most lightning activity on Earth is seen on the shore of Lake Maracaibo in Venezuela.

Which areas are lightning-prone?

- A recently released annual report on lightning by the **Climate Resilient Observing Systems Promotion Council (CROPC)**, which works closely with government agencies like the India Meteorological Department, includes a lightning atlas which maps vulnerability at the district level.
- According to the report, **Madhya Pradesh** has reported the largest number of cloud to ground lightning strikes, followed by Chhatisgarh, Maharashtra, Odisha and West Bengal.
- Other states with high strike rate include Bihar, UP, Karnataka, Jharkhand and Tamil Nadu.
- Lightning is fairly common, though it is not often realised in the urban centres.
- In India, well over one crore lightning strikes have been recorded in recent years. It is only over the last few years that lightning records have begun to be maintained, thanks to the efforts of CROPC and India Meteorological Department.

How can the effects of lightning strikes be mitigated?

- Lightning is not classified as a natural disaster in India.
- But recent efforts have resulted in the setting up of an early warning system, that is already saving many lives. More than 96% of lightning deaths happen in rural areas.
- As such, most of the mitigation and public awareness programmes need to focus on these communities.
- Lightning protection devices are fairly unsophisticated and low-cost. Yet, their deployment in the rural areas, as of now, is extremely low.
- States are being encouraged to prepare and implement lightning action plans, on the lines of heat action plans.
- An international centre for excellence on lightning research to boost detection and early warning systems is also in the process of being set up.

POLITY AND CONSTITUTION

Anti-Defection Law

Context:

- The political crisis in Maharashtra has given rise to the question whether the Shiv
- Sena rebels can avoid disqualification under the **anti-defection law**.

Relevance:

- GS-II: Polity and Constitution (Constitutional Provisions, Legislature and Elections, Executive, Separation of Powers)

Dimensions of the Article:

- 1. What is Defection?
- 2. 10th Schedule of the Indian Constitution (Anti-Defection Law)
- 3. When do the Legislators face risk of disqualification?
- 4. Issues with having an Anti-defection law

What is Defection?

- 'Defection' has been defined as, "To abandon a position or association, often to join an opposing group".
- A legislator is deemed to have defected if he either voluntarily gives up the membership of his party or disobeys the directives of the party leadership on a vote.
- This implies that a legislator defying (abstaining or voting against) the party whip on any issue can lose his membership of the House.
- The law applies to both Parliament and state assemblies.
- The anti-defection law sought to prevent such political defections which may be due to reward of office or other similar considerations.

10th Schedule of the Indian Constitution (Anti-Defection Law)

- The Tenth Schedule was inserted in the Constitution in 1985 by the 52nd
- Amendment Act and technically the Tenth Schedule to the Indian Constitution is the anti-defection law in India.
- It is designed to prevent political defections prompted by the lure of office or material benefits or other like considerations.
- It lays down the process by which legislators may be disqualified on grounds of defection by the Presiding Officer of a legislature based on a petition by any other member of the House.

The law applies to both Parliament and State Assemblies.

When do the Legislators face risk of disqualification?

- Disqualification of a legislator (member of the parliament or legislative assemblies) is possible when the member:
- Gives up his membership of a political party voluntarily
- Votes or abstains from voting in the House, contrary to any direction issued by his political party (Party Whip is an official of a political party who acts as the party's 'enforcer' inside the legislative assembly or house of parliament.)
- Joins any party after being elected as independent candidate
- Joins any political party after 6 months of being nominated as a legislative member
- The Supreme Court mandated that in the absence of a formal resignation, the giving up of membership can be determined by the conduct of a legislator, such as publicly expressing opposition to their party or support for another party, engaging in anti-party activities, criticizing the party on public forums on multiple occasions, and attending rallies organised by opposition parties.

Exceptions:

- Legislators can change their party without the risk of disqualification to merge with or into another party provided that at least two-thirds of the legislators are in favour of the merger, neither the members who decide to merge, nor the ones who stay with the original party will face disqualification.
- Earlier, the law allowed parties to be split (this used to allow for legislators to hold their position while actually “defecting” to either of the split parties), but at present, this has been outlawed.
- Any person elected as chairman or speaker can resign from his party, and rejoin the party if he demits that post.

Who takes the decision on Defection?

- The decision on disqualification questions on the ground of defection is referred to the Speaker or the Chairman of the House, and his/her decision is final.
- The Presiding Officer has NO time limit to make his decision
- All proceedings in relation to disqualification under this Schedule are considered to be proceedings in Parliament or the Legislature of a state as is the case.
- The law initially stated that the decision of the Presiding Officer is not subject to judicial review. This condition was struck down by the Supreme Court in 1992, thereby allowing appeals against the Presiding Officer’s decision in the High Court and Supreme Court.
- There is no time limit as per the law within which the Presiding Officers should decide on disqualification for defection.

Issues with having an Anti-defection law

- The principle of the Anti-defection law basically forces members vote based on the decisions taken by the party leadership, and not based on what their constituents would like them to vote for – can be considered as a **hindrance to the “functioning of the legislature”** in the true sense of the word. It limits a legislator from voting according to his/her own conscience, judgement and electorate’s interests.
- The core role of an MP to examine and decide on a policy, bills, and budgets is side-lined. Instead, the MP becomes just another number to be tallied by the party on any vote that it supports or opposes.
- It can also be said that this provision goes **against the concept of representative democracy**.
- In the parliamentary form, the government is accountable daily through questions and motions and can be removed any time it loses the support of the majority of members of the Lok Sabha. In India, this chain of accountability has been broken by making legislators accountable primarily to the political party.
- Thus, anti-defection law is acting **against the concept of parliamentary democracy**.

Kihoto Hollohan Judgment**Context:**

- As the political battle in Maharashtra moves to the Supreme Court, the role and powers of the Deputy Speaker are in focus.
- In the context of the crisis, references have been made to the landmark judgment in ‘Kihoto Hollohan vs Zachillhu And Others’ (1992).

Relevance:

- GS II- Polity and Government

Dimensions of the Article:

- What is the ‘Kihoto Hollohan’ case?
- What did the Supreme Court rule in ‘Kihoto Hollohan’?
- What was the dissenting opinion?

- What about the role of the Deputy Speaker?

What is the 'Kihoto Hollohan' case?

- The law covering the disqualification of lawmakers and the powers of the Speaker in deciding such matters became part of the statute book in 1985 when the Tenth Schedule to the Constitution, commonly known as the 'anti-defection law', was adopted.
- A constitutional challenge to the Tenth Schedule was mounted, which was settled by the apex court in 'Kihoto Hollohan'.
- The principal question before the Supreme Court in the case was whether the powerful role given to the Speaker violated the doctrine of basic structure — the judicial principle that certain basic features of the Constitution cannot be altered by amendments by Parliament.
- The Supreme Court laid down the doctrine of basic principle in its landmark judgment in 'Kesavananda Bharati vs State Of Kerala' (1973).

What did the Supreme Court rule in 'Kihoto Hollohan'?

- The petitioners in 'Kihoto Hollohan' argued whether it was fair that the Speaker should have such broad powers, given that there is always a reasonable likelihood of bias.
- The majority judgment authored by Justices M N Venkatachaliah and K Jayachandra Reddy answered this question in the affirmative. It read- The Speakers/Chairmen hold a pivotal position in the scheme of Parliamentary democracy and are guardians of the rights and privileges of the House.
- They are expected to and do take far reaching decisions in the Parliamentary democracy.
- Vestiture of power to adjudicate questions under the Tenth Schedule in them should not be considered exceptionable.
- The provisions were "salutory and intended to strengthen the fabric of Indian Parliamentary democracy by curbing unprincipled and unethical political defections."

What was the dissenting opinion?

- Justices Lalit Mohan Sharma and J S Verma dissented and took a different view.
- The tenure of the Speaker, who is the authority in the Tenth Schedule to decide this dispute, is dependent on the continuous support of the majority in the House.
- Therefore, he does not satisfy the requirement of such an independent adjudicatory authority.
- They advocated for an independent adjudicatory machinery for resolving disputes relating to the competence of Members of the House,
- This is envisaged as an attribute of the democratic system which is a basic feature of our Constitution.

What about the role of the Deputy Speaker?

- **Article 93** of the Constitution mentions the positions of the Speaker and Deputy Speaker of the House of the People (Lok Sabha), and Article 178 contains the corresponding position for Speaker and Deputy Speaker of the Legislative Assembly of a state.
- Maharashtra has been without a Speaker since February 2021, and Deputy has been carrying out the responsibilities of the position.
- **Article 95(1)** says: "While the office of Speaker is vacant, the duties of the office shall be performed by the Deputy Speaker".
- In general, the Deputy Speaker has the same powers as the Speaker when presiding over a sitting of the House.
- All references to the Speaker in the Rules are deemed to be references to the Deputy Speaker when he presides.

Reuters Institute Digital News Report 2022

- According to the 2022 Reuters Institute Digital News Report, trust in news is falling in nearly half the countries surveyed, with significant proportions of the public, especially younger age groups, beginning

to turn away from news. Further, news consumption is increasingly happening via social media platforms such as TikTok rather than traditional media.

Relevance:

- GS II- Polity and Governance

Dimensions of the Article:

- 1. What is the scope of this report?
- 2. Major trends highlighted in the report
- 3. What does the report say about trends in India?

What is the scope of this report?

- This study, an annual one commissioned by the **Reuters Institute for the Study of Journalism**, tracks how news is consumed in different countries.
- This year's report, the eleventh overall, is based on a survey **conducted by YouGuv**, a British market research and data analytics firm, in January/February 2022 through online questionnaires.
- It covers 46 markets in six continents.
- Since it is based on online questionnaires, the findings are not necessarily nationally representative, especially for countries with lower internet penetration.
- For India, the data is more representative of younger English speakers and not the national population as such.

Major trends highlighted in the report

- Broadly, the report documents the ways in which “the connection between journalism and much of the public may be fraying”.
- It flags six major trends which could have wider socio-political implications.
- People are trusting news content less and less.
- Consumption of traditional news media declined in nearly all the countries surveyed.
- The proportion of news consumers who say that they “avoid news” has risen sharply across countries, with the report describing the phenomenon as “**selective avoidance**”.
- Despite small increases in the proportion of people willing to pay for online news (mostly in richer countries), the growth in digital subscriptions for news content seems to be leveling off.
- The smartphone has become the dominant way in which most people first access news in the morning.
- The report notes that while Facebook remained the most-used social network for news, it is TikTok that has become the fastestgrowing network, “reaching 40% of 18-24-year-olds, with 15% using the platform for news”.
- TikTok, however, is currently banned in India.

What is ‘selective avoidance’ of news?

- While the majority of people remained engaged with news, the report finds that a growing minority is increasingly choosing “to ration or limit their exposure to it — or at least to certain types of news”.
- The report calls this behaviour “selective avoidance” and says this is one of the reasons why news consumptions levels have failed to increase as per expectations.
- The proportion that says they avoid news has doubled in Brazil (54%) and the U.K. (46%) since 2017.

Reasons for this avoidance:

- Many said they were “put off by the repetitiveness of the news agenda — especially around politics and COVID-19 (43%).
- Some said they were “worn out by the news” (29%).
- A significant number said they avoided news because they didn’t trust it (29%).

- About one-third (36%), especially those under 35, said that news ruined their mood.
- About 17% said they avoided news because it led to arguments they would rather avoid, while 16% said reading the news led to feelings of powerlessness.
- A small percentage (14%) said that they didn't have time for news while 8% said that they found it too hard to understand.

What does the report say about trends in India?

- In the section on India, produced in collaboration with the **Asian College of Journalism**, the report, observing that "India is a strongly mobile-focussed market," says that 72% of the survey respondents accessed news through smartphones and 35% did so via computers.
- Also, 84% of the Indian respondents sourced news online, 63% from social media, 59% from television, and 49% from print.
- YouTube (53%) and WhatsApp (51%) were the top social media platforms for sourcing news.
- India registered a small increase in the level of trust, with 41% trusting news overall.
- While legacy print brands and public broadcasters continued to have high trust levels, only a minority — 36% and 35% — felt that the media was free from undue political influence and from undue business influence respectively.

Hate speech

Context:

- The debate surrounding the comments by BJP spokespersons have put the spotlight on the law that deals with criticism of or insult to religion. Provisions in the Indian Penal Code (IPC), primarily Section 295A, define the contours of free speech and its limitations with respect to offences relating to religion.
- India does not have a formal legal framework for dealing with hate speech.
- However, a cluster of provisions, loosely termed hate speech laws, are invoked.
- These are primarily laws to deal with offences against religions.

Relevance:

- GS II- Polity and Governance

Dimensions of the Article:

- 1. What is "Hate Speech"?
- 2. Laws related to hate speech in India
- 3. Indian Penal Code on Hate Speech
- 4. Observations of different institutions related to hate speech
- 5. Rangila Rasool case
- 6. Later cases

What is "Hate Speech"?

- **In general**, "Hate Speech" refers to words whose intent is to create hatred towards a particular group, that group may be a community, religion or race. This speech may or may not have meaning, but is likely to result in violence.
- **BPRD Definition:** The Bureau of Police Research and Development recently published a manual for investigating agencies on cyber harassment cases that defined hate speech as a "language that denigrates, insults, threatens or targets an individual based on their identity and other traits (such as sexual orientation or disability or religion etc.)."
- **According to the Law Commission of India**, "Hate speech generally is an incitement to hatred primarily against a group of persons defined in terms of race, ethnicity, gender, sexual orientation, religious belief and the like. This, hate speech is any word written or spoken, signs, visible representations within the hearing or sight of a person with the intention to cause fear or alarm, or incitement to violence."

Laws related to hate speech in India

- **Article 19 of the Constitution**– Freedom of Speech and Expression is guaranteed to all the citizens of India. However, the right is subjected to reasonable restrictions in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offence.

Indian Penal Code on Hate Speech

- **Section 295A** defines and prescribes a punishment for deliberate and malicious acts, intended to outrage religious feelings of any class by insulting its religion or religious beliefs.
- “Whoever, with deliberate and malicious intention of outraging the religious feelings of any class of citizens of India by words, either spoken or written, or by signs or by visible representations or otherwise, insults or attempts to insult the religion or the religious beliefs of that class, shall be punished with imprisonment of either description for a term which may extend to [three years], or with fine, or with both,” the IPC section reads.
- **According to Section 153A of IPC**, “promotion of enmity between different groups on grounds of religion, race, place of birth, residence, language, etc., and doing acts prejudicial to maintenance of harmony”, is a punishable offence and attracts three years of imprisonment.
- **According to Section 505 of IPC**, “Statements that promote mutiny by the armed forces, or causes such fear or alarm that people are induced to commit an offence against the state or public tranquillity; or is intended to incite or incites any class or community to commit an offence against another class or community”, will attract a jail term of up to three years under Section 505(1).
- **Under Section 505(2)**, “it is an offence to make statements creating or promoting enmity, hatred or ill-will between classes.
- **Under Section 505(3)**, the offence will attract up to a five-year jail term if it takes place in a place of worship, or in any assembly engaged in religious worship or religious ceremonies.

Observations of different institutions related to hate speech

- The **Supreme Court** had observed that “hate speech is an effort to marginalize individuals based on their membership in a group. It seeks to delegitimize group members in the eyes of the majority, reducing their social standing and acceptance within society. It, therefore, rises beyond causing distress to individual group members and lays the groundwork for later, broad attacks on vulnerable....”
- **The Human Rights Council’s** ‘Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression’ expressed that freedom of expression can be restricted on the following grounds:
 - Child pornography (to protect the rights of children).
 - Hate speech (to protect the rights of affected communities)
 - Defamation (to protect the rights and reputation of others against unwarranted attacks)
 - Direct and public incitement to commit genocide (to protect the rights of others)
 - Advocacy of national, racial or religious hatred that constitutes incitement to discrimination, hostility or violence (to protect the rights of others, such as the right to life).

Rangila Rasool case

- Rangila Rasool was a tract — brought out by a Hindu publisher — that had made disparaging remarks about the Prophet’s private life. Cases against the first pamphlet, filed under **Section 153A**, were dismissed by the Punjab and Haryana High Court, which examined the question whether targeting religious figures is different from targeting religions.
- When a second, similar piece was published, it raised tensions. While the magistrate had convicted the publisher Rajpaul under Section 153A, the Lahore High Court held that a “scurrilous and foul attack” on a religious leader would prima facie fall under Section 153A — although not every criticism.
- This debate in interpretation prompted the colonial government to enact Section 295A with a wider scope to address these issues.

Later cases

- In 1957, the constitutionality of Section 295A was challenged in **Ramji Lal Modi v State of Uttar Pradesh**.
- The Supreme Court upheld the law on the grounds that it was brought in to preserve “public order”.
- Public order is an exemption to the fundamental right to freedom of speech and expression and the right to religion recognised by the Constitution.
- In a 1960 ruling, in **Baba Khalil Ahmed v State of Uttar Pradesh**, the Supreme Court said that “malicious intent” of the accused can be determined not just from the speech in question but also from external sources.
- In 1973, in **Ramlal Puri v State of Madhya Pradesh**, the Supreme Court said the test to be applied is whether the speech in question offends the “ordinary man of common sense” and not the “hypersensitive man”.
- However, these determinations are made by the court and the distinction can often be vague and vary from one judge to the other.
- In **Baragur Ramachandrappa v State of Karnataka**, a 2007 decision of the Supreme Court, “a pragmatic approach” was invoked in interpreting Section 295A.
- The state government had issued a notification banning Dharmakaarana, a Kannada novel written by award-winning author P V Narayana on the ground that it was hate speech, invoking a gamut of provisions including Section 295A.
- The pragmatic approach was to restore public order by “forfeiture” of a book over individual interest of free speech.

Inter-State Council

- Recently, Tamil Nadu Chief Minister wrote to Prime Minister, asking that at least three meetings of the Inter-State Council should be held every year to “strengthen the spirit of cooperative federalism”.
- He also suggested that bills of national importance should be placed before the Council before being tabled in Parliament. He said this was because there is no “effective and interactive communication” between the states and the Centre on issues of common interest.

Relevance:

- GS II- Polity and Governance (Federalism)

Dimensions of the Article:

- 1. About Inter-State Council:
- 2. Aims of the ISC
- 3. Composition
- 4. Functions of Inter-State Council

About Inter-State Council:

- **Article 263** of the Indian constitution gives provision for the establishment of an Inter-State Council.
- This will improve collaboration between the Center and the States.
- It is the most vibrant platform for debating policies, strengthening Centre-State relations, and serving as a bridge between the Center and the States.

Aims of the ISC

- Decentralisation of powers to the states as much as possible
- More transfer of financial resources to the states
- Arrangements for devolution in such a way that the states can fulfil their obligations
- Advancement of loans to states should be related to as ‘the productive principle’
- Deployment of Central Armed Police Forces in the states either on their request or otherwise

Composition

- **Prime Minister** acts as the chairman of the council.

Members of Inter-State Council

- Union Ministers of Cabinet rank in the Union
- Council of Ministers nominated by the Prime Minister.
- Chief Ministers of all states.
- Chief Ministers of Union Territories having a Legislative Assembly
- Administrators of UTs not having a Legislative Assembly.
- Governors of the states being administered under President's rule.

Functions of Inter-State Council

- Inquiring into and providing advice on potential inter-state disputes
- Investigating and debating topics of common interest to the states of the union.
- Making recommendations on any such subject for enhanced policy and action coordination on that subject.

The Essence of Time***Context***

- SC issued an order granting time until July 12 to dissident Shiv Sena legislators in the Maharashtra Assembly to reply to the Deputy Speaker's notice under the anti-defection law as against 2 days period granted by the Deputy Speaker. This has brought to the fore the significant question of whether the Court should have done this in the face of specific bar on judicial intervention in disqualification proceedings at any stage prior to final adjudication under the Tenth Schedule.

Relevance

- GS II: Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these, Judiciary

Dimensions of the Article

- 1. Why SC Exercised Judicial Review Power
- 2. Scope of Judicial Review wrt Anti Defection Law.
- 3. Conclusion

Why SC Issued Exercised Judicial Review Power

- Time is of the essence when it comes to executing political maneuvers to reduce government to a minority. Dissident legislators need time to gather enough numbers to vote out the regime.
- Ruling parties need to close the window of opportunity soon, often using the threat of disqualification for defection.
- It is in this backdrop that judicial intervention in matters relating to disqualifying lawmakers for defection takes place — either buying the dissidents time or allowing disqualification proceedings to go on unhindered.
- Hence the Supreme Court has effectively made it possible for them to actualize their objective without the threat of disqualification for now.
- But brings the concern of judicial restraint as judicial intervention should strengthen anti-defection law, not undermine it.

Scope of Judicial Review wrt Anti Defection Law

- In Kilhota Hollohan Case of 1992, a Constitution Bench, while upholding the validity of the antidefection law, held that the Speaker's decision was subject to judicial review, albeit on limited grounds.
- It also made it clear that this should take place after a final decision, and there can be no interim order, except if there is an interim disqualification or suspension.
- The Deputy Speaker's grant of just two days for the MLAs to reply may have occasioned the intervention; but it is doubtful whether the Court should concern itself with the question now, when it can be decided after their possible disqualification.
- There are Court judgments that say compliance with natural justice is not based on the number of days given, but on whether sufficient opportunity was given before a decision.
- Based on a conclusion in Nabam Rebia (2016) that a Presiding Officer should not adjudicate any defection complaint while a motion for his own removal is pending, the dissidents sent a motion to get the Deputy Speaker removed.
- After he rejected it, the rejection has also been questioned in court, thus raising a jurisdiction question on the adjudicatory power of the Deputy Speaker, who, of necessity, has to decide disqualification questions in the absence of a Speaker.

Conclusion

- Motions to remove a Presiding Officer should not become a ploy to circumvent disqualification proceedings. If courts countenance maneuvers to preempt a decision on whether legislators camping in another State and questioning the Chief Minister's majority have incurred disqualification by "voluntarily giving up membership" of their party, they undermine the anti defection law and render nugatory rulings by Constitution Benches.
- When defection is seen as a serious menace by the Constitution, courts should not act in furtherance of it. The duty to protect those wrongly disqualified is important, but so is calling to account defectors whose motives are suspect.

SOCIAL JUSTICE AND GOVERNANCE

Scheme for Residential Education For Students in High schools in Targeted Areas

Focus: GS II- Welfare schemes

Why in News?

- Recently, the Ministry of Social Justice and Empowerment has launched the **scheme 'SHRESHTA.'**

About SHRESHTA

- The government has approved a new scheme named SHRESHTA (Residential Education for Students in High Schools in Targeted Areas) for the purpose of providing seats for the meritorious SC boys and girls in the best private residential schools in the country.

National Entrance Test for SHRESHTA

- Under this, each year a specified number of meritorious SC students (Approx 3000) in States / UTs are selected through a transparent mechanism of a National Entrance Test for SHRESHTA (NETS), conducted by the National Testing Agency (NTA).
- Selected students are admitted in the Best Private Residential Schools, affiliated by CBSE, in classes 9th and 11th for completion of education till 12th standard.
- Thereafter, the students may be connected to Post Metric Scholarship Scheme or Top - Class Education Scheme of the

- Ministry to continue their further studies with adequate financial aid from the Government of India.

Selection of Schools:

- For selection of Schools , the Ministry through a committee with the representative of Ministry of Education and CBSE and Finance Division of the Department , has selected the best performing private residential schools affiliated with the CBSE , based on certain parameters such as
- Schools is in existence for at least for last 5 years
- Boards results of the schools were more than 75 % in Class 10 and 12 for the last 3 years
- the Schools have adequate infrastructure for admitting additional at SC students in classes 9th and 11th

Quality of Education:

- For ensuring the quality of students in the scheme , the Department has decided to seek the students based on All India Entrance Examination from the National Testing Agency (NTA) , which conducts all major exams including JEE / NEET and selection of employee for the Government through SSC and others .
- The Ministry intends to provide level playing field to the poor and meritorious SC students, by providing facilities for providing High Quality Education in the CBSE based Private Schools having Residential Facility (Hostel) from class 9th to 12th .
- Entire cost of school fee and hostel fee including food charges shall be borne by the Government of India. The Students under the Scheme may select any school across the country for their academics.

Objectives of the Scheme:

- To enhance the reach of the development initiative of the government.
- To fill the gap in service-deprived Scheduled Castes (SCs) dominant areas in the sector of education by collaborating with voluntary organizations.
- To provide an environment for socio-economic upliftment and overall development of the Scheduled Castes (SCs).
- To provide access to high-quality education to bright Scheduled Caste (SC) students so that they can explore future opportunities.

Surrogacy Law

- ***Context:***
- A person has approached the Delhi High Court to question why marital status, age or gender should be the criteria for prohibiting someone from commissioning a surrogacy.
- The petitioner have challenged in the court the surrogacy law and the Assisted Reproductive Technology (Regulation) Act, 2021 which provides a regulatory framework for surrogacy.
- ***Relevance:***
- GS II- Government policies and Interventions
- ***Dimensions of the Article:***
- 1. Issues raised by the petition
- 2. About Surrogacy (Regulation) Act, 2021
- 3. Eligibility criteria for intending couple
- 4. Eligibility criteria for surrogate mother
- 5. Offences and penalties

Issues raised by the petition

- Single males are currently not allowed to have children through surrogacy, and married women can only use surrogacy services if they are unable to have children due to medical reasons.
- Women must be between the ages of 35 and 45 and widowed or divorced to be eligible for surrogacy services.

- Surrogacy is only available to women between the ages of 25 and 35 who are married and have at least one biological child.
- According to their petition, the laws also require a surrogate to be genetically linked to the couple that wishes to conceive a child through this method.
- The personal decision of a single person about the birth of a baby through surrogacy, i.e., the right of reproductive autonomy is a facet of the right to privacy guaranteed under Article 21 of the Constitution.
- Thus, the right to privacy of every citizen or person affecting a decision to bear or beget a child through surrogacy cannot be taken away.

About Surrogacy (Regulation) Act, 2021

- The Act **prohibits commercial surrogacy, but allows altruistic surrogacy.**
- In altruistic surrogacy, the surrogate mother receives no monetary remuneration other than medical bills and insurance coverage during the pregnancy.
- Commercial surrogacy refers to surrogacy or associated treatments that are performed for a monetary gain or reward (in cash or kind) that exceeds the cost of basic medical care and insurance coverage.

Surrogacy is permitted when it is:

- For intending couples who suffer from proven infertility;
- Altruistic
- Not for commercial purposes
- Not for producing children for sale, prostitution or other forms of exploitation
- For any condition or disease specified through regulations.

Eligibility criteria for intending couple

- The intending couple should have a '**certificate of essentiality**' and a '**certificate of eligibility**' issued by the appropriate authority.
- A **certificate of essentiality** will be issued upon fulfilment of the following conditions:
- A certificate of proven infertility of one or both members of the intending couple from a District Medical Board;
- An order of parentage and custody of the surrogate child passed by
- a Magistrate's court; and
- Insurance coverage for a period of 16 months covering postpartum delivery complications for the surrogate.
- The **certificate of eligibility** to the intending couple is issued upon fulfilment of the following conditions:
- The couple being **Indian citizens and married for at least five years;**
- **Between 23 to 50 years old (wife) and 26 to 55 years old (husband);**
- **They do not have any surviving child** (biological, adopted or surrogate); this would not include a child who is mentally or physically challenged or suffers from life threatening disorder or fatal illness;
- Other conditions that may be specified by regulations.

Eligibility criteria for surrogate mother

- To obtain a **certificate of eligibility** from the appropriate authority, the surrogate mother has to be:
- A **close relative** of the intending couple;
- A **married woman** having a child of her own;
- **25 to 35 years old;**
- A **surrogate only once** in her lifetime;
- Possess a **certificate of medical and psychological fitness** for surrogacy.
- Further, the surrogate mother cannot provide her own gametes for surrogacy.

National and State Surrogacy Boards

- The central and the state governments shall constitute the **National Surrogacy Board (NSB)** and the **State Surrogacy Boards (SSB)**, respectively.

Functions of the NSB include,

- Advising the central government on policy matters relating to surrogacy;
- Laying down the code of conduct of surrogacy clinics;
- Supervising the functioning of SSBs.

Parentage and abortion of surrogate child

- A child born out of a surrogacy procedure will be **deemed to be the biological child of the intending couple**.
- An abortion of the surrogate child requires the **written consent** of the surrogate mother and the authorisation of the appropriate authority.
- This authorisation must be compliant with the **Medical Termination of Pregnancy Act, 1971**.
- Further, the surrogate mother will have an option to withdraw from surrogacy before the embryo is implanted in her womb.

Offences and penalties

- The offences under the Act include:
- Undertaking or advertising commercial surrogacy;
- Exploiting the surrogate mother;
- Abandoning, exploiting or disowning a surrogate child; and
- Selling or importing human embryo or gametes for surrogacy.
- The penalty for such offences is imprisonment up to 10 years and a fine up to 10 lakh rupees.

Prime Minister Employment Generation Program (PMEGP)

Focus: Government Policies and Interventions

Why in News?

- The Ministry of Micro, Small and Medium Enterprises has approved the extension of the Prime Minister's Employment Generation Programme (PMEGP) for five years till FY26.
- The PMEGP has now been approved for continuation over the 15th Finance Commission Cycle for five years from 2021-22 to 2025-26 with an outlay of Rs 13,554.42 crore.

Prime Minister Employment Generation Program (PMEGP)

- The Prime Minister's Employment Generation Programme (PMEGP) the result of the merger of two schemes – Prime Minister's Rojgar Yojana (PMRY) and The Rural Employment Generation Programme (REGP).
- PMEGP is a credit-linked subsidy scheme which promotes self-employment through setting up of micro-enterprises, where subsidy up to 35% is provided by the Government through Ministry of MSME for loans up to ₹25 lakhs in manufacturing and ₹10 lakhs in the service sector.
- PMEGP was established for generation of employment opportunities through establishment of micro enterprises in rural as well as urban areas.
- PMEGP is a central sector scheme administered by the Ministry of Micro, Small and Medium Enterprises (MoMSME).
- At the national level, the Scheme is being implemented by Khadi and Village Industries Commission (KVIC), a statutory organization under the administrative control of the Ministry of MSME as the single nodal agency.
- At the State level, the Scheme will be implemented through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs) and District Industries Centres (DICs) and banks.

Objectives of PMEGP

- To generate continuous and sustainable employment opportunities in Rural and Urban areas of the country
- To provide continuous and sustainable employment to a large segment of traditional and prospective artisans, rural and urban unemployed youth in the country through setting up of micro enterprises.
- To facilitate participation of financial institutions for higher credit flow to micro sector.

Eligibility to avail this scheme:

- Individuals above 18 years of age
- VIII Std. pass required for project above Rs.10.00 lakhs in manufacturing and above Rs. 5.00 lakhs for Service Sector
- Self Help Groups and Charitable Trusts
- Institutions Registered under Societies Registration Act- 1860
- Production based Co-operative Societies

CiSS application

Focus: GS II- Government policies and Intervention

Why in News?

- The National Commission for the Protection of Child Rights (NCPCR) has launched a “CiSS application” under the Baal Swaraj portal to help in the rehabilitation process of Children in Street Situations (CiSS).

CiSS Application

- The CiSS application is used for receiving data of children in street situations from all the states and union territories, tracking their rescue and rehabilitation process.
- The initiative is taken under the direction of the Supreme Court of India.
- The program embodies Article 51 (A) of the Constitution of India, as it provides a platform to the public and organizations catering to the welfare of the children to report any child in need of assistance.
- The platform serves to collect data and report to the District Child Protection Officer (DCPO) for them to take necessary action.
- It also provides a platform for professionals and organizations to provide any help that they can to children in need.
- Help can be provided in the form of open shelters, counselling services, medical services, sponsorships, de-addiction services, education services, legal/paralegal services, volunteering etc.
- It categorizes any child under ‘Children in Street Situation’ if the child is living on the streets alone, living on the streets during the day, or living on the streets with the family.
- The root cause of this phenomenon is the migration of families from rural to urban areas in search of a better standard of living.

How does it work?

- *Collection of the child's details*, which is accomplished through the portal.
- *Social Investigating Report (SIR)*e, investigating the child's background. This is done under the supervision of the District Child Protection Unit (DCPU) by the District Child Protection Officer (DCPO) by conversing and counselling the child.
- *Formulating an Individual Care Plan (ICP)* for the child.
- *Child Welfare Committee (CWC)* based on the SIR submitted to the CWC.
- *Allocating the schemes and benefits* that the beneficiary can avail of.
- *A checklist is made for the evaluation of the progress* i.e. (Follow Ups).

Jal Jeevan Mission

- **Focus:** GS II- Government policies and Interventions

Why in News?

- Recently, the Centre announced that over **50% of rural households have access to tap water supply.**

About Jal Jeevan Mission:

- ***Nodal:*** Ministry of Jal Shakti
- Jal Jeevan Mission, a central government initiative under the Ministry of Jal Shakti, aims to ensure access of piped water for every household in India.
- National Rural Drinking Water Programme (NRDWP) was restructured and subsumed into Jal Jeevan Mission (JJM) – to provide Functional Household Tap Water (FHTC) to every rural household with service level at the rate of 55 lpcd i.e., Har Ghar Nal Se Jal (HGNSJ) by 2024.

Implications

- Supply of water to all households is a basic necessity
- Reduction in water borne diseases which was due to consumption of substandard water

Challenges

- Critical situation of Decrease in ground water table.
- Water demand and supply is a miss match
- Contamination of local ground level sources of water like, ponds lakes and wells.
- Sustaining the provision of water to all households is a challenge, not just starting it.

Govt's new guidelines banning surrogate ads

Context:

- Sellers of alcoholic beverages have asked the government to provide clarity on 'surrogate advertisements', which have been banned under the new guidelines to tackle misleading advertisements.

Relevance:

- GS II- Government policies and Interventions

Dimensions of the Article:

- 1. Details
- 2. What do the new advertising guidelines say?
- 3. What is surrogate advertising?
- 4. Why are advertisers seeking clarity?

Details:

- The guidelines were issued by the Central Consumer Protection Authority (CCPA)
- It includes a Rs.10 lakh penalty for first violation and a Rs.50 lakh penalty for subsequent violations.
- Notified by the Consumer Affairs Ministry, the guidelines were issued days after outrage over a controversial perfume ad.

What do the new advertising guidelines say?

- The Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022, have been released to "protect the consumers" and "to ensure that consumers are not being fooled with unsubstantiated claims, exaggerated promises, misinformation and false claims". for children.
- Surrogate ads, meanwhile, have been banned completely.
- Misleading ads have not been defined, instead characteristics of nonmisleading ads have been mentioned such as those which "contain truthful and honest representation" and do not exaggerate benefits.

- On advertisements aimed at children, detailed criteria has been spelt out to disqualify certain ads, such as: ads that encourage practices detrimental to children's physical health or mental well-being, imply children are "likely to be ridiculed or become less popular" if they do not purchase the goods, and ads that use qualifiers such as 'just' or 'only' to make the price of goods seem less expensive even when additional charges are present.

What is surrogate advertising?

- Surrogate advertising is the strategy of advertising a product that cannot be advertised openly.
- Advertisers instead create ads that help in building a brand, and often involve popular celebrities – all without naming the actual product that is being indirectly advertised.
- In India, tobacco products and alcohol cannot be advertised openly under laws like the Cigarette and Other Tobacco Products Act, 2003, which bans all kinds of direct and indirect advertisements of tobacco products.
- To circumvent them, surrogate advertising is done.
- A few years ago, the Delhi government pulled up actor Pierce Brosnan for endorsing an Indian pan masala brand. Brosnan claimed he was "cheated" by the brand and unaware of the fact that the "breath freshener" ad was a surrogate ad used to disguise the actual product – areca nut or supari, which the Delhi government argued was a cancer-causing agent.

Why are advertisers seeking clarity?

- As per the new guidelines, a surrogate ad will refer to an ad which indicates directly or indirectly to consumers that it is an advertisement for the goods whose advertising is prohibited.
- Using any brand name, logo, colour, etc. associated with goods whose advertisement is banned is also not allowed.
- This is the area that needs clarity, said the liquor sellers.
- Companies put their name on objects such as water bottles, or events like music festivals for surrogate advertising, but some of these products exist on their own as well.
- Whether advertising these objects and events will then also be prohibited is unclear at present, advertisers have sought to know.

Agnipath scheme

Context:

- Recently, the government unveiled its new Agnipath scheme for recruiting soldiers across the three services.
- The new defence recruitment reform, which has been cleared by the Cabinet Committee on Security, will come into effect immediately, and the soldiers recruited under the scheme will be called Agniveers.

Relevance:

- GS II- Government policies and Interventions

Dimensions of the Article:

1. What is the Agnipath scheme?
2. What is the eligibility criteria?
3. What happens after selection?
4. When will the recruitment actually begin?
5. How will the scheme benefit the armed forces and the recruits?

What is the Agnipath scheme?

- Under the new scheme, around 45,000 to 50,000 soldiers will be recruited annually, and most will leave the service in just four years.
- Of the total annual recruits, only 25 per cent will be allowed to continue for another 15 years under permanent commission.
- The move will make the permanent force levels much leaner for the over 13- lakh strong armed forces in the country.

- This will, in turn, considerably reduce the defence pension bill, which has been a major concern for governments for many years.

What is the eligibility criteria?

- The new system is only for personnel below officer ranks (those who do not join the forces as commissioned officers).
- Under the Agnipath scheme, aspirants between the ages of 17.5 years and 21 years will be eligible to apply.
- The recruitment standards will remain the same, and recruitment will be done twice a year through rallies.

What happens after selection?

- Once selected, the aspirants will go through training for six months and then will be deployed for three and a half years.
- During this period, they will get a starting salary of Rs 30,000, along with additional benefits which will go up to Rs 40,000 by the end of the four-year service.
- Importantly, during this period, 30 per cent of their salary will be set aside under a Seva Nidhi programme, and the government will contribute an equal amount every month, and it will also accrue interest.
- At the end of the four-year period, each soldier will get Rs 11.71 lakh as a lump sum amount, which will be tax-free.
- They will also get a Rs 48 lakh life insurance cover for the four years.
- In case of death, the payout will be over Rs 1 crore, including pay for the unserved tenure.
- However, after four years, only 25 per cent of the batch will be recruited back into their respective services, for a period of 15 years.
- For those who are re-selected, the initial four-year period will not be considered for retirement benefits.

When will the recruitment actually begin?

- Recruitment will begin within 90 days under the scheme which will bring “all India, all class” recruitment to the services.
- This is especially significant for the Army, where the regiment system has region and caste bases, and with time that will be eliminated to allow anybody from any caste, region, class or religious background to become part of existing regiments.

How will the scheme benefit the armed forces and the recruits?

- The average age in the forces is 32 years today, which will go down to 26 in six to seven years, the scheme envisions.
- It will create “future-ready” soldiers.
- A youthful armed forces will allow them to be easily trained for new technologies.
- It will increase employment opportunities and because of the skills and experience acquired during the four-year service such soldiers will get employment in various fields.
- This will also lead to availability of a higher-skilled workforce to the economy which will be helpful in productivity gain and overall GDP growth.
- The government will help rehabilitate soldiers who leave the services after four years. They will be provided with skill certificates and bridge courses.
- The impetus will be to create entrepreneurs.

ADIP Scheme & Rashtriya Vayoshri Yojana

- **Focus:** Government policies and Interventions

Why in News?

- A 'Samajik Adhikarita Shivar' for distribution of aids and assistive devices to 'Divyangjan' under the ADIP Scheme of the Ministry of Social Justice and Empowerment, Government of India will be organized by the Department of Empowerment of Persons with Disabilities (DEPWD) in association with ALIMCO and District Administration Sonitpur

ADIP Scheme- the Assistance to Disabled persons for purchasing/fitting of aids/appliances (ADIP) scheme:

Nodal: Ministry of Social Justice & Empowerment.

- **Objective:** to assist the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances that can promote their physical, social and psychological rehabilitation, by reducing the effects of disabilities and enhance their economic potential.
- The aids and appliances supplied under the Scheme shall conform to BIS specifications to the extent possible.
- **The aim** is to promote physical, social, psychological rehabilitation of Persons with Disabilities by reducing the effects of disabilities and at the same time enhance their economic potential.
- **Grant-in-aid** under the Scheme will Not be given for commercial supply of aids/appliances.
- **Implementation:** The scheme is implemented through implementing agencies such as NGOs, National Institutes under the Ministry of Social Justice & Empowerment and ALIMCO (a PSU that manufactures artificial limbs).
- ***The following agencies would be eligible to implement the Scheme on behalf of Ministry of Social Justice and Empowerment, subject to fulfillment of laid down terms and conditions:***
 - Societies, registered under the Societies Registration Act, 1860 and their branches, if any, separately.
 - Registered charitable trusts
 - District Rural Development Agencies, Indian Red Cross Societies and other Autonomous Bodies headed by District Collector/Chief Executive Officer/District Development Officer of Zilla Parishad.
 - National/Apex Institutes including ALIMCO functioning under administrative control of the Ministry of Social Justice and Empowerment/Ministry of Health and Family Welfare.
 - State Handicapped Development Corporations.
 - Local Bodies- Zilla Parishad, Municipalities, District Autonomous Development Councils and Panchayats.
 - Hospitals registered as separate entity, as recommended by state/central government
 - Nehru Yuvak Kendras.

Eligibility

- He/she should be an Indian citizen of any age.
- Should be certified by a Registered Medical Practitioner that he/she is disabled and fit to use prescribed aid/appliance. Holds a 40% Disablement Certificate.
- Person who is employed/self-employed or getting pension and whose monthly income from all sources does not exceed Rs. 20,000/- per month.
- In case of dependents, the income of parents/guardians should not exceed Rs. 20,000/- per month.
- Persons who have not received assistance from the Government, local bodies and Non-Official Organisations during the last 3 years for the same purpose.
- However, for children below 12 years of age this limit would be 1 year.
- Aids/appliances which do not cost more than Rs. 10,000/- are covered under the Scheme for single disability. However, in the case of SwDs, students beyond IX class, the limit would be raised to Rs.12,000/-.

About Rashtriya Vayoshri Yojana (RVY)

- Nodal: Ministry of Social Justice & Empowerment.
- The RVY was launched in 2017 at Nellore, Andhra Pradesh.

- Rashtriya Vayoshri Yojana (RVY) is a scheme for providing Physical Aids and Assisted-living Devices for Senior citizens belonging to BPL category.
- This is a Central Sector Scheme, fully funded by the Central Government.
- The expenditure for implementation of the scheme will be met from the "Senior Citizens' Welfare Fund".
- The Scheme will be implemented through the sole implementing agency -
- Artificial Limbs Manufacturing Corporation (ALIMCO), a PSU under the Ministry of Social Justice and Empowerment.
- Under the scheme, the physical aids will be provided only to the senior citizens of the nation.
- This implies those who are aged above 60 years will get free assisted living aids and physical devices which are required for their sustainability.
- Also the govt. has selected the list of cities where the scheme will be implemented.
- The main criteria for the senior citizens to get full benefits of Rashtriya Vayoshri Yojana (RVY) scheme is that they must belong to BPL family and should hold valid BPL card issued by the concerned authority.
- Beneficiaries in each district will be identified by the State Governments/UT Administrations through a Committee chaired by the Deputy Commissioner/District Collector.
- As far as possible, 30% of the beneficiaries in each district shall be women.

About Significance of RVY Scheme

- According to Census 2011, there are 10.38 crores of senior citizens.
- And of these, more than 70% of them live in rural areas.
- Therefore, it is essential to take special care towards them through these camps organized under Rashtriya Vayoshri Yojana.

National Initiative for Promoting Upskilling of Nirman workers

Focus: GS II- Government policies and Interventions

Why in News?

- Minister of Housing & Urban Affairs and Petroleum & Natural Gas, Government of India, launched an innovative project for skill training of construction workers called 'NIPUN' i.e. National Initiative for Promoting Upskilling of Nirman workers.

About NIPUN:

- The project NIPUN is an initiative of the **Ministry of Housing & Urban Affairs (MoHUA)** under its flagship scheme of the **Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)**
- It will also facilitate and support convergence with related line ministries.
- The **National Skill Development Corporation (NSDC)**, the nodal agency under the Ministry of Skill Development & Entrepreneurship (MSDE), Government of India, will be the Implementation Partner for the project NIPUN.
- It will provide trainees with 'Kaushal Bima', a three-year accidental insurance with coverage of INR 2 lakhs, digital skills such as cashless transactions and the BHIM app, orientation about entrepreneurship, and EPF and BOCW facilities.
- A project committee with members from both NSDC and MoHUA will be formed under the chairmanship of the Additional Secretary-cum-Mission Director, DAY-NULM to oversee and monitor the project.

Objectives:

- To train over 1 lakh construction workers, through fresh skilling and upskilling programmes and provides them with work opportunities in foreign countries also.
- It will enable the construction workers to seek better job opportunities, increase their wages and even pursue overseas placements - an indication of a new eco-system.

The project implementation is divided into three parts -

- Training through Recognition of Prior Learning (RPL) at construction sites,
- Training through Fresh Skilling by Plumbing and Infrastructure SSC and
- International Placement through industries/ builders/ contractors.
- Under NIPUN, it is also envisaged that NSDC will place approximately 12,000 people in foreign countries such as the Kingdom of Saudi Arabia, UAE and other GCC countries.

DAY-NULM

- It is a Centrally Sponsored Scheme, being implemented since 2014-15,
- **Aim:** To reduce poverty and vulnerability of urban poor households in the country by enabling them to access self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis.

National Air Quality Resource Framework of India

Focus: GS II- Government Policies and Interventions

Why in News?

- Principal Scientific Adviser to the Government inaugurated the National Mission on
- "National Air Quality Resource Framework of India (NARFI)".

About NARFI:

- The NARFI is an information mechanism to help decision-makers in government, municipalities, start-ups and in the private sectors to address air pollution issues in different climatic zones of India.
- Research-based audited Information and industry-oriented solutions will be shared in an easy-to-understand format.
- The short-term basic training modules tailored for different groups such as active ground level staff in government establishments, implementers, media and policymakers, would be an integral part of the framework.
- NARFI has been developed by the National Institute of Advanced Studies (NIAS), Bengaluru.

Objective:

- To help enrich communication and enhance general awareness, leading to self-mitigation.

Significance:

- It will enable knowledge creation, developing infrastructure and industrial structures and studying its effects on human health in the country.
- It will provide an all-inclusive guide to collecting air quality data, studying its impact and implementing science-based solutions.

Indian laws on abortions

Context:

- In a significant step backwards for women's rights in the U.S., the Supreme Court overturned the landmark **Roe v. Wade judgement of 1973**, which gave women in America the right to have an abortion before the foetus is viable outside the womb or before the 24-28 week mark. With the setting aside of the historic judgement on abortion in the U.S, here's a look at the laws that govern abortion in India.

Relevance:

- GS II- Government policies and Interventions

Dimensions of the Article:

- 1. How did abortion laws come about in India?
- 2. The Medical Termination of Pregnancy Act, 1971
- 3. Medical Termination of Pregnancy Amendment Act, 2021
- 4. Significance of the amendment
- 5. Criticisms of the 2021 amendment to the MTP act
- 6. Have there been judicial interventions in cases of abortions?

How did abortion laws come about in India?

Shantilal Shah Committee:

- In the 1960s, in the wake of a high number of induced abortions taking place, the Union government ordered the constitution of the Shantilal Shah Committee to deliberate on the legalisation of abortion in the country.

Indian Penal Code (IPC) provisions of 312 and 313:

- In order to reduce maternal mortality owing to unsafe abortions, the Medical Termination of Pregnancy (MTP) Act was brought into force in 1971.
- This law is an **exception to the Indian Penal Code (IPC) provisions of 312 and 313** and sets out the rules of how and when a medical abortion can be carried out.
- **Section 312** of the IPC, a person who “voluntarily causes a woman with child to miscarry” is liable for punishment, attracting a jail term of up to three years or fine or both, unless it was done in good faith where the purpose was to save the life of the pregnant woman.
- **Section 313** of the IPC states that a person who causes the miscarriage without the consent of the pregnant woman, whether or not she is in the advanced stages of her pregnancy, shall be punished with life imprisonment or a jail term that could extend to 10 years, as well as a fine.
- The Medical Termination of Pregnancy Act, 1971 The Medical Termination of Pregnancy (MTP) Act, 1971 provides the legal framework for making CAC services available in India.
- Termination of pregnancy is permitted for a broad range of conditions up to 20 weeks of gestation as detailed below:
 - When continuation of pregnancy is a risk to the life of a pregnant woman or could cause grave injury to her physical or mental health;
 - When there is substantial risk that the child, if born, would be seriously handicapped due to physical or mental abnormalities;
 - When pregnancy is caused due to rape (presumed to cause grave injury to the mental health of the woman);
 - When pregnancy is caused due to failure of contraceptives used by a married woman or her husband (presumed to constitute grave injury to mental health of the woman).

The MTP Act specifies

- who can terminate a pregnancy;
- till when a pregnancy can be terminated; and
- where can a pregnancy be terminated.

Medical Termination of Pregnancy Amendment Act, 2021

- The Act increases the gestation period of women seeking abortion up from **20 weeks to 24 weeks** - It allows abortion to be done on the advice of one doctor up to 20 weeks, and two doctors in the case of certain special categories of women between 20 and 24 weeks.
- The “special categories of women” include rape survivors, victims of incest, the differently-abled and minors.

- In case of the gestational period beyond 24 weeks, pregnancy may be terminated only in cases of substantial foetal abnormalities diagnosed by the Medical Board or if there is a threat to the life of the mother.
- Opinion of only one provider will be required up to 20 weeks of gestation and two providers for termination of pregnancy of 20-24 weeks of gestation.
- (Opinion of only one doctor will be required up to 20 weeks of gestation and two doctors for termination of pregnancy of 20-24 weeks of gestation.)
- Under the Act, a pregnancy may be terminated up to 20 weeks by a married woman in the case of failure of contraceptive method or device. It allows unmarried women to also terminate a pregnancy for this reason.
- All state and union territory governments will constitute a Medical Board. The Board will decide if pregnancy may be terminated after 24 weeks due to substantial foetal abnormalities.

Significance of the amendment

- It will provide greater reproductive rights and dignity to women as abortion is considered an important aspect of the reproductive health of women.
- Deaths and injuries from unsafe abortions are largely preventable provided services are performed legally by trained practitioners.
- The rape victims and vulnerable victims will also be benefitted from Privacy Clause.
- Many cases which were filed in High Courts to seek permission for abortion beyond 20 weeks will be reduced. Also, often 20 weeks were spent in completing the legal procedures and formalities – hence, there was a need to increase the upper limit of time

Criticisms of the 2021 amendment to the MTP act

- One opinion is that terminating a pregnancy is the choice of the pregnant woman and a part of her reproductive rights. Another is that the state should protect life and hence should provide for the protection of the foetus.
- It enhances the gestational limit for legal abortion from 20 to 24 weeks only for specific categories of women. A woman who does not fall into these categories would not be able to seek an abortion beyond 20 weeks.
- The Act does not provide a time frame within which the Board must make its decision. Also, the shortage of specialised doctors will further delay the case.
- There may be cases where persons who identify as transgender (and not women) can become pregnant even after receiving hormone therapy to transition from female to male, and may require termination services. The Act is silent over this.
- The boards are unnecessary and an invasion of privacy of the pregnant women which pushes the laborious process a woman had to undergo in order to get an abortion.
- Many are still not aware of their reproductive rights and the amendment does not show concerns towards the need for awareness.

Have there been judicial interventions in cases of abortions?

- **Justice K.S. Puttaswamy v. Union of India:**
- Despite the fact that existing laws do not permit unconditional abortion in the country, in the landmark 2017 Right to Privacy judgement in the Justice K.S. Puttaswamy v. Union of India and others, the Supreme Court had held that the decision by a pregnant person on whether to continue a pregnancy or not is part of such a person's right to privacy as well and, therefore, the right to life and personal liberty under Article 21 of the Constitution.

Foetal abnormality:

- Several women annually approach the apex court and High Courts, when medical boards reject their application to access MTP beyond the gestational upper limit (now 24 weeks), seeking permission to

about a pregnancy, mostly in cases where it is a result of sexual assault or when there is a foetal abnormality.

- Recently, the Calcutta High Court allowed a 37-year-old woman, who was 34 weeks into her pregnancy, to get a medical abortion as the foetus was diagnosed with an incurable spinal condition. This judgment allowed abortion for the furthest gestational in the country so far.

Dak Karmayogi

Focus: GS II- Government Policies and Interventions

Why in News?

- Dak Karmayogi', an e-learning portal of the Department of Posts was launched by, Minister of Communications, Railways, Electronics & IT, and Minister of State for Communications, at a function held at Stein Auditorium, Indian Habitat Centre.

About Dak Karmayogi

- This portal has been developed 'In-House' under vision of 'Mission Karmayogi', which was conceptualized by Prime Minister Shri Narendra Modi with a view to bring efficiency in actions of all the employees of Government of India and transforming efficiency of bureaucracy with **'Minimum**

Government' and 'Maximum Governance'.

- On successful completion of final summative assessment, a system generated course completion certificate will be sent on trainee's registered email ID automatically.
- Trainees can give their feedback, ratings and suggestions for each and every video and other learning content so that necessary enrichment can be ensured.
- Department of Posts has been imparting training to its employees through its network of 10 Postal Training Centres/Regional Training Centre and Rafi Ahmed Kidwai National Postal Academy (RAKNPA), a Central Training Institute.
- To recognise the good performance of employees of Department of Posts and motivate them to maintain or improve their good work, Meghdoot Awards were also conferred in eight different categories by Minister of Railways, Communications and Electronics & Information Technology and Minister of State for Communications during the event.

Objectives:

- It will enhance the competencies of about 4 lakh Gramin Dak Sevaks & Departmental employees by enabling the trainees to access the uniform standardized training content online or in blended campus mode to enable them to effectively deliver a number of G2C services for enhanced customer satisfaction.
- However, with the launch of this portal, Departmental employees and Gramin
- Dak Sevaks will be able to avail training 'Any-time, Any-where' and upgrade their Attitude, Skill and Knowledge (ASK), as per their convenience.
- The portal is expected to go a long way in being an enabler in providing better services by upgrading employees and Gramin Dak Sevaks.

Performance Grading Index for Districts

Focus: GS II- Government policies and Interventions

Why in News?

- The Ministry of Education has released the Performance Grading Index for Districts (PGID) for 2019 which studied 83 indicators grouped in six categories.

What is PGI-D?

- The PGI for District (PGI-D), which comprises 83 indicators, was created to assess how well each district is performing in terms of education.
- Through an internet portal, districts enter the data.
- A district's areas for improvement are shown by the indicator-by-indicator PGI score.
- There are 83 indications totaling 600 points in the PGI-D framework.
- They are divided into six categories: outcomes, effective classroom transactions, infrastructure facilities and students' entitlements, school safety and child protection, digital learning, and governance process.
- These categories are outcomes, effective classroom transaction, infrastructure facilities and student's entitlements, school safety and child protection, digital learning and governance process.

Significance

- In order to motivate districts to perform better, the PGI-D will reflect the relative performance of each district on a consistent scale.
- The state education agencies should be able to use it to discover performance gaps at the district level and make decentralised improvements.

How does the grading scale works?

- The PGI-D grades the districts into 10 grades with the highest achievable grade being 'Daksh', which is for districts scoring more than 90% of the total points in that category or overall.
- 'Utkarsh' category is for districts with score between 81-90%, followed by 'Ati-Uttam' (71-80%), 'Uttam' (61-70%), 'Prachesta-I' (51-60%), 'Prachesta-II' (41-50%) and 'Prachesta III' (31-40%).
- The lowest grade in PGI-D is called 'Akanshi-3' which is for scores up to 10% of the total points.

Performance of the states

- Rajasthan's Sikar is the top performer, followed by Jhunjhunu and Jaipur.
- The other States whose districts have performed best are Punjab with 14 districts in 'Ati-uttam' grade (scoring 71-80% on a scale of 100).
- It followed by Gujarat and Kerala with each having 13 districts in this category.
- However, there are 12 States and UTs which do not have even a single district in the 'Ati-uttam' and 'Uttam' categories and these include seven of the eight States from the North East region.

Government e-Marketplace

Focus: GS II- Government policies and Intervention

Why in News?

- The Union Cabinet, chaired by the Prime Minister has given its approval for expanding the mandate of GeM to allow procurement by Cooperatives as buyers on GeM.

About Government e-Marketplace (GeM)

Nodal: Ministry of Commerce and Industry

- The Government e Marketplace (GeM) was launched on August 9, 2016.
- To create an open and transparent procurement platform for Government buyers.
- A Special Purpose Vehicle (SPV) by the name of Government e- Marketplace (GeM SPV) was set up as the National Public Procurement Portal
- It has been developed by Directorate General of Supplies and Disposals (Ministry of Commerce and Industry) with technical support of National e-governance Division (Ministry of Electronic and Information Technology).
- It is a completely paperless, cashless and system driven e-market place that enables procurement of common use goods and services with minimal human interface.

- At present, the platform is open for procurement by all government buyers:
- central and state ministries, departments, public sector enterprises, autonomous institutions, local bodies, etc.
- As per existing mandate, GeM is not available for use by private sector buyers.
- Suppliers (sellers) can be from across all segments: government or private.

The following are the objectives of the online platform:

- Easier availability of various goods and services for the government buyers.
- Create transparency in public procurement.
- Cost saving on government expenditure.
- Achieve and promote cashless transactions.

National Air Sport Policy 2022

- Focus: GS II- Government policies and Interventions
- Why in News?
- The Minister of Civil Aviation launched National Air Sport Policy 2022 (NASP 2022).
- About NASP 2022:
- NASP 2022 lays out the vision of making India as one of the top sports nations by 2030, by providing a safe, affordable, accessible, enjoyable and sustainable air sports ecosystem in India.
- **Air sports:**
- Air sports, as the names suggests, **encompasses various sports activities involving the medium of air.**
- These include sports like air-racing, aerobatics, aero modeling, hang gliding, paragliding, para motoring and skydiving etc.
- India has the potential to be among the leading nations in the world of air sports.
- It has a large geographical expanse, diverse topography, and fair-weather conditions.
- It has a large population, especially the youth. It has a growing culture for adventure sports and aviation.
- The NASP 2022, is a step in this direction. It has been drafted based on the inputs received from policy makers, air sports practitioners and public at large and will ensure establishment of good quality of infrastructure, equipment, instructors and services.
- **The policy will cover the following air sports in India: -**
- Aerobatics
- Aero modeling and model rocketry
- Amateur-built and experimental aircraft
- Ballooning
- Drones
- Gliding and powered gliding
- Hang gliding and powered hang gliding
- Parachuting (including skydiving, BASE jumping and wing suits etc.)
- Paragliding and para motoring (including powered parachute trikes etc.)
- Powered aircraft (including ultra light, micro light and light sports aircraft etc.)
- Rotorcraft (including autogyro)
- **Under the new policy, there will be four-tier governance structure for air sports in India namely**
- Air Sports Federation of India (ASFI) as the apex governing body
- National associations for individual air sports or a set of air sports, as appropriate

- Regional (e.g. West/ South/ North East etc.) or State and Union Territory level
- units of the national air sports associations, as appropriate; and
- District-level air sports associations, as appropriate.
- **Key Objectives of NASP 2022:-**
- Promote an air sports culture in the country
- Enable adoption of international good practices in safety including but not limited to, air sports infrastructure, equipment, operations, maintenance and training
- Develop a simple, stakeholder-friendly and effective governance structure
- Enhance participation and success of Indian sportspersons in global air sports events; and
- Promote design, development and manufacturing of air sports equipment in India in line with the Atmanirbhar Bharat Abhiyan.

State Food Safety Index

Context:

- In an effort to galvanize States/UTs to work towards ensuring safe food for citizens, Union Minister for Health and Family Welfare released Food Safety and Standards Authority of India (FSSAI)'s 4th State Food Safety Index (SFSI) to measure the performance of States across five parameters of food safety.

Relevance:

- GS-II: Social Justice (Issues related to Health, Government Policies and Interventions)

Dimensions of the Article:

- 1. About the State Food Safety Index (SFSI)
- 2. Food Safety and Standards Authority of India (FSSAI)
- 3. Highlights of the SFSI

About the State Food Safety Index (SFSI)

- The index is developed by **FSSAI (Food Safety and Standards Authority of India)** to measure the performance of states on five significant parameters of Food Safety.
- The parameters include **Human Resources and Institutional Data, Compliance, Food Testing – Infrastructure and Surveillance, Training & Capacity Building and Consumer Empowerment.**
- The Index is a dynamic quantitative and qualitative benchmarking model that provides an objective framework for evaluating food safety across all States/UTs.
- The first State Food Safety Index for the year 2018-19 was announced on the first-ever World Food Safety Day on 7th June 2019.

Food Safety and Standards Authority of India (FSSAI)

- FSSAI is an autonomous body established under **the Ministry of Health & Family Welfare**, Government of India.
- The FSSAI has been established under the **Food Safety and Standards Act, 2006** which is a consolidating statute related to food safety and regulation in India.
- Hence, FSSAI is a **Statutory Body**.
- FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety.

The main aim of FSSAI is to

- Lay down science-based standards for articles of food
- To regulate manufacture, storage, distribution, import and sale of food

- To facilitate safety of food
- Standards framed by FSSAI are prescribed under:
 - Food Safety and Standards (Food Product Standards and Food Additives) Regulation, 2011,
 - Food Safety and Standards (Packaging and Labelling) Regulation, 2011
 - Food Safety and Standards (Contaminants, Toxins, and Residues) Regulations, 2011.

Highlights of the SFSI 2021

- **Tamil Nadu** topped the State Food Safety Index (SFSI) this year, followed by Gujarat and Maharashtra.
- Among the smaller States, **Goa** stood first, followed by Manipur and Sikkim.
- Among the Union Territories, **Jammu and Kashmir**, Delhi and Chandigarh secured the first, second and third ranks.

Mahatma Gandhi National Rural Employment Guarantee Scheme

Context:

- Certain groups has asked to discontinue manual attendance for Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) work sites with more than 20 workers and use a mobile phone-based application.

Relevance:

- GS-II: Social Justice and Governance (Health and Poverty related issues, Government Interventions and Policies, Issues arising out of the design and implementation of Government Policies)

Dimensions of the Article:

- 1. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
- 2. How MGNREGA came to be?
- 3. Features of MGNREGA
- 4. Objectives of MGNREGA

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

- Mahatma Gandhi National Rural Employment Guarantee Act, MGNREGA, is an Indian labour law and social security measure that aims to guarantee the 'right to work'. This act was passed in September 2005.
- It aims to enhance livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work.
- It covers all districts of India except the ones with 100% urban population.
- MGNREGA is to be implemented mainly by gram panchayats (GPs). The involvement of contractors is banned.
- Apart from providing economic security and creating rural assets, NREGA can help in protecting the environment, empowering rural women, reducing ruralurban migration and fostering social equity, among others.
- The MGNREGA wage rates are fixed according to changes in the **CPI-AL (Consumer Price Index-Agriculture Labour)**, which reflects the increase in the **inflation** in rural areas.

How MGNREGA came to be?

- In 1991, the P.V Narashima Rao government proposed a pilot scheme for generating employment in rural areas with the following goals:
 - Employment Generation for agricultural labour during the lean season.
 - Infrastructure Development
 - Enhanced Food Security

- This scheme was called the Employment Assurance Scheme which later evolved into the MGNREGA after the merger with the Food for Work Programme in the early 2000s.

Features of MGNREGA

- It gives a significant amount of control to the Gram Panchayats for managing public works, strengthening Panchayati Raj Institutions.
- Gram Sabhas are free to accept or reject recommendations from Intermediate and District Panchayats.
- It incorporates accountability in its operational guidelines and ensures compliance and transparency at all levels.

Objectives of MGNREGA

- Provide 100 days of guaranteed wage employment to rural unskilled labour
- Increase economic security
- Decrease migration of labour from rural to urban areas.

Amrit Sarovar Mission

Context:

- The Union government has asked the Ministry of Railways and the National Highways Authority of India (NHAI) to use the soil/silt excavated from ponds/tanks in all districts across the country under the Amrit Sarovar Mission for their infrastructure projects.

Relevance:

- GS II- Government policies and Intervention

Dimensions of the Article:

- 1. About Amrit Sarovar Mission
- 2. Aim of the mission
- 3. Target of the mission

About Amrit Sarovar Mission

- On April 24, 2022, the Amrit Sarovar Mission was begun with the goal of conserving water for the future.
- The Mission's technical partner is the Bhaskaracharya National Institute for Space Application and Geoinformatics (BISAG-N).
- The Mission operates through States and Districts, emphasising several initiatives such as Mahatma Gandhi NREGS, XV Finance Commission Grants, PMKSY sub-schemes such Watershed Development Component and Har Khet Ko Pani, as well as State-specific schemes.

Ministries Involved:

- This Mission has been launched with a whole Government Approach with 6 Ministries/Department namely:
- Department of Rural Development
- Department of land resources
- Department of Drinking Water and Sanitation
- Department of Water resources
- Ministry of Panchayati Raj
- Ministry of Forest, Environment and Climate Changes

Aim of the mission:

- As part of the Azadi Ka Amrit Mahotsav celebrations, the Mission aims to develop and rejuvenate 75 water bodies in each district in the country.
- It would result in the production of 50,000 water bodies, each roughly an acre in size or more.
- The Mission urges citizens and non-governmental resources to help supplement their efforts.

Target of the mission:

- Mission Amrit Sarovar is to be completed by 15th August 2023.
- Around 50,000 Amrit Sarovars could be built across the country.
- Each of these Amrit Sarovars will be about 1 acre in size and have a water storage capacity of 10,000 cubic metres. The fundamental focus is on people's participation in the Mission.
- Local freedom fighter, their family members, Martyr's family members, Padma Awardee and citizens of the local area wherein an Amrit Sarovar is to be constructed, will be engaged at all stages.
- Every 15th of August, a National Flag Raising Ceremony will be held at each Amrit Sarovar location.

INTERNATIONAL RELATIONS

G20

- **Focus:** GS-II: International Relations (Important International Groupings and Agreements, Foreign Policies affecting India's Interests)
- **Why in News?**
- Union Health & Family Welfare and Chemicals and Fertilizer virtually addressed the inaugural session at the G20 Health Ministers meeting at Yogyakarta, Indonesia.
- Indonesia has hosted two Health Working Group Meetings in Yogyakarta and Lombok wherein priority issues of 'Harmonizing Global Health Protocol Standards' and 'Building Global Health System Resilience' were discussed and deliberated upon.

About G20

- The G20 is an informal group of 19 countries and the European Union, with representatives of the **International Monetary Fund and the World Bank**.
- The G20 membership comprises a mix of the world's largest advanced and emerging economies, representing about two-thirds of the world's population, 85% of global gross domestic product, 80% of global investment, over 75% of global trade and roughly half the world's land area.
- The members of the G20 are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.
- Spain as a permanent, non-member invitee, also attends leader summits.
- India will hold the Presidency of the G20 from 1 December 2022 to 30 November 2023, culminating with the G20 Summit in India in 2023.

Structure and functioning of G20

- The G20 Presidency rotates annually according to a system that ensures a regional balance over time.
- For the selection of presidency, the 19 countries are divided into 5 groups, each having no more than 4 countries. The presidency rotates between each group.
- Every year the G20 selects a country from another group to be president.
- India is in Group 2 which also has Russia, South Africa and Turkey.
- The G20 does not have a permanent secretariat or Headquarters.
- The work of G20 is divided into two tracks:

- The Finance track comprises all meetings with G20 finance ministers and central bank governors and their deputies. Meeting several times throughout the year they focus on monetary and fiscal issues, financial regulations, etc.
- The Sherpa track focuses on broader issues such as political engagement, anti-corruption, development, energy, etc.
- Since 2008, the group convenes at least once a year, with the summits involving each member's head of government.

Snake Island

- **Context:**
- Ukraine has said it has caused "significant losses" to the Russian military in airstrikes on Zmiinyi Island, also known as Snake Island, in the Black Sea.

Relevance:

- GS II- International Relations

Dimensions of the Article:

- 1. About Snake Island
- 2. About the Black Sea
- 3. Russia and the Black Sea
- 4. Black Sea in the Ukraine war

About Snake Island

- Zmiinyi Island, also known as Snake or Serpent Island, is a small piece of rock less than 700 metres from end to end, that has been described as being "Xshaped".
- It is located 35 km from the coast in the Black Sea, to the east of the mouth of the Danube and roughly southwest of the port city of Odessa.
- The island, which has been known since ancient times and is marked on the map by the tiny village of Bile that is located on it, belongs to Ukraine.
- On February 24, the day Russia launched its invasion, two warships from the Russian Black Sea Fleet, Vasily Bykov and Moskva, attacked Snake Island, followed by Russian troops landing on it.
- Ukraine has claimed to have launched several attacks on the Russian occupiers of Snake Island even before the latest ongoing operation.
- Recently, Ukraine said it had sunk a Russian naval tug called Spasatel Vasily Bekh, which was delivering personnel and military supplies to the island.
- Earlier in April, it had sunk the Moskva, the 600-foot flagship of the Black Sea Fleet, which had attacked the island on day 1 of the war.
- The Black Sea is a marginal sea of the Atlantic Ocean lying between Europe and Asia; east of the Balkans (Southeast Europe), south of the East European Plain in Eastern Europe, west of the Caucasus, and north of Anatolia in Western Asia.
- The Black Sea is bordered by Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine.
- The Black Sea ultimately drains into the Mediterranean Sea, via the Turkish Straits and the Aegean Sea.
- The Bosphorus Strait connects it to the small Sea of Marmara which in turn is connected to the Aegean Sea via the Strait of the Dardanelles. To the north, the Black Sea is connected to the Sea of Azov by the Kerch Strait.

Russia and the Black Sea

- The famed water body bound by Ukraine to the north and northwest, Russia and Georgia to the east, Turkey to the south, and Bulgaria and Romania to the west, which links to the Sea of Marmara through the Bosphorus and then to the Aegean through the Dardanelles, has traditionally been Russia's warm water gateway to Europe.

- For Russia, the Black Sea is both a stepping stone to the Mediterranean as well as a strategic buffer between NATO and itself.
- Domination of the Black Sea region is a geostrategic imperative for Moscow, both to project Russian power in the Mediterranean and to secure the economic gateway to key markets in southern Europe.

Black Sea in the Ukraine war

- Russia has been making efforts to gain complete control over the Black Sea since the Crimean crisis of 2014.
- During the ongoing invasion, the domination of the Black Sea has been a major Russian objective, along with the land bridge to connect Russia and Crimea.
- As such, there have been intense efforts to capture Mariupol, the Sea of Azov port in the breakaway eastern Ukrainian oblast of Donetsk.

14th BRICS Summit

Focus: GS II- International Relations

Why in News?

- Prime Minister led India's participation at the 14th BRICS Summit, convened under the Chairship of President Xi Jinping of China, in a virtual format.

Highlights of the Summit:

- The leaders held discussions including in fields of Counter-Terrorism, Trade, Health, Traditional Medicine, Environment, Science, Technology & Innovation, Agriculture, Technical and Vocational Education & Training, and also key issues in the global context, including the reform of the multilateral system, COVID-19 pandemic, global economic recovery, amongst others.
- Prime Minister called for **strengthening of the BRICS Identity** and proposed establishment of Online Database for BRICS documents, BRICS Railways Research Network, and strengthening cooperation between MSMEs.
- **India will be organizing BRICS Startup event** this year to strengthen connection between Startups in BRICS countries.
- Prime Minister also noted that as BRICS members we should understand security concerns of each other and provide mutual support in designation of terrorists and this sensitive issue should not be politicized.
- Prime Minister highlighted India's development partnership with Africa, Central Asia, Southeast Asia, and from Pacific to Caribbean; India's focus on a free, open, inclusive, and rules-based maritime space; respect for sovereignty and territorial integrity of all nations from the Indian Ocean Region to Pacific Ocean;
- Reform of multilateral system as large parts of Asia and all of Africa and Latin America have no voice in global decision-making.
- Prime Minister noted the importance of circular economy and invited citizens of participating countries to join Lifestyle for Environment (LIFE) campaign.
- At the conclusion of the Summit, BRICS Leaders adopted the '**Beijing Declaration**'.

What is BRICS?

- BRICS is the international grouping of Brazil, Russia, India, China and South Africa.
- This was set up as a move towards greater multipolarity; hence the spread across three continents and both hemispheres.
- In terms of GDP, China occupies the second position; India the fifth; Brazil the ninth; Russia the 11th; and South Africa the 35th.
- In terms of growth rates, China grew at 6%;
- India at 4.5%, Russia 1.7%, Brazil 1.2% and South Africa 0.1%.

- BRICS does not exist in form of organization, but it is an annual summit between the supreme leaders of five nations.
- The Chairmanship of the forum is rotated annually among the members, in accordance with the acronym B-R-I-C-S.
- The BRICS seeks to deepen, broaden and intensify cooperation within the grouping and among the individual countries for more sustainable, equitable and mutually beneficial development.
- BRICS takes into consideration each member's growth, development and poverty objectives to ensure relations are built on the respective country's economic strengths and to avoid competition where possible.
- BRICS is emerging as a new and promising political-diplomatic entity with diverse objectives, far beyond the original objective of reforming global financial institutions.

Group of Seven (G7)

Context:

- Prime Minister is in Germany to attend the Group of Seven (G7) Summit at Schloss Elmau, a century-old retreat in a nature reserve in the Bavarian Alps.

Relevance:

- GS II- International Relations

Dimensions of the Article:

- 1. What is the G7?
- 2. History of the G7

What is the G7?

- The Group of 7 (G7) is an informal group of seven countries — the United States, Canada, France, Germany, Italy, Japan and the United Kingdom, the heads of which hold an annual summit with European Union and other invitees.
- Unlike other bodies such as NATO, the G7 has **no legal existence, permanent secretariat or official members**.
- It also has no binding impact on policy and all decisions and commitments made at G7 meetings need to be ratified independently by governing bodies of member states.
- The major purpose of the G-7 is to discuss and deliberate on international economic issues.
- G7 is capable of setting the global agenda because decisions taken by these major economic powers have a real impact. Thus, decisions taken at the G7 are not legally binding, but exert strong political influence.
- It sometimes acts in concert to help resolve other global problems, with a special focus on economic issues.

Other details:

- As of 2022, G7 countries make up 10% of the world's population, 31% of global GDP, and 21% of global carbon dioxide emissions, according to the Summit website.
- China and India, the two most populous countries with among the largest GDP figures in the world, are not part of the grouping.
- In all G7 countries, annual public sector expenditure exceeded revenue in 2021.
- Most G7 countries also had a high level of gross debt, especially Japan (263% of GDP), Italy (151%) and the US (133%).
- The G7 countries are important players in global trade.
- The US and Germany in particular are major export nations. Both sold goods worth well over a trillion US dollars abroad in 2021

History of the G7

- A meeting between the current G7 members, excluding Canada, in 1975 laid the basis for the formation G7. At the time, the global economy was in a state of recession due to the OPEC oil embargo.
- As the energy crisis was escalating, the then US Treasury Secretary decided that it would be beneficial for the large players on the world stage to coordinate with each other on macroeconomic initiatives.
- After this first summit, the countries agreed to meet annually and a year later, Canada was invited into the group which marked the official formation of the G7 as we know it.
- The President of the European Commission was asked to join the meetings in 1977 and following the collapse of the Soviet Union in 1991 and a subsequent thaw in relations between the East and West, Russia was also invited to join the group in 1998. Thereafter the group was named the G8 until 2014, when Russia was expelled for its annexation of Crimea from Ukraine.
- The presidency of G7 meetings is held by each of the seven countries in turn, each year. The country holding the presidency is responsible for organising and hosting the meeting.

China's interventions in the Horn of Africa*Context:*

- China has been investing across the African continent throughout the last decade. While the emphasis has been on investments and raw materials, it took a new turn recently, with the first "China-Horn of Africa Peace, Governance and Development Conference."

Relevance:

- GS II- International Relations

Dimensions of the Article:

- 1. About Horn of Africa
- 2. Recent projects between China and countries from the Horn of Africa
- 3. China's primary interests/investments in the Horn of Africa
- 4. Has the Horn of Africa been welcoming of China's presence?
- 5. Is China's new focus on peace in the Horn a shift from Beijing's principle of non-intervention?

About Horn of Africa

- Horn of Africa is the easternmost extension of African land and includes the region that is home to the countries of Djibouti, Eritrea, Ethiopia, and Somalia, whose cultures have been linked throughout their long history.
- The Horn of Africa has been at the centre of global attention for several decades because of protracted armed conflict, severe food crises and largescale displacement.

Recent projects between China and countries from the Horn of Africa

- China's focus on the Horn is a part of its focus on Africa.
- During the 17th trip to Africa, China's Foreign Minister and State Councillor focused on increasing the infrastructural investments in African countries.
- He refuted accusations of debt-trapping the countries and asserted **China's three objectives in Africa:**
 - 1. Controlling the pandemic,
 - 2. Implementing a Forum on China-Africa Cooperation (FOCAC) outcomes,
- The FOCAC promotes China's role in the infrastructural and societal development of the Horn.
- 3. Upholding common interests while fighting hegemonic politics.

In the 2021 forum, the entire region of the Horn participated and four resolutions were adopted:

- The Dakar Action Plan,

- The China-Africa Cooperation Vision 2035,
- The Sino-African Declaration on Climate Change
- The Declaration of the Eighth Ministerial Conference of FOCAC

During the COVID-19 pandemic,

- China donated over 3,00,000 vaccines to Ethiopia and Uganda, and 2,00,000 vaccines to Kenya and Somalia. Sudan and Eritrea have also benefited from China's vaccine diplomacy.
- Beijing has also initiated the "2035 vision for China-Africa cooperation"; it aims to transform the health sector, alleviate poverty, promote trade and investments, and expand digital innovation.
- The vision also focuses on green development, capacity building, improving people-to-people exchanges and facilitating peace and security in the continent.
- China's primary interests/investments in the Horn of Africa
- China's interests are related to four major areas:

Infrastructural projects:

- One of its landmark projects was fully funding the \$200 million African Union headquarters in Addis Ababa.
- It has also made significant investments in railways;
- It is building the Addis-Djibouti railway line connecting the landlocked country with Eritrean ports in the Red Sea.
- China has also invested in the Mombasa-Nairobi rail link in Kenya, and has already delivered on railway projects in Sudan.
- It also has a viable military hardware market in Ethiopia and has built over 80 infrastructural projects in Somalia, including hospitals, roads, schools and stadiums. In Djibouti, 14 infrastructural projects are funded by China.

Financial assistance:

- With respect to financial assistance, Ethiopia, is one of the top five African recipients of Chinese investments, and also has a debt of almost \$14 billion.
- China accounts for 67% of Kenya's bilateral debt. In 2022, China promised to provide \$15.7 million assistance to Eritrea.

Natural resources:

- The third major Chinese interest in Africa is the presence of natural resources — oil and coal.
- Beijing has invested \$400 million in Mombasa's oil terminal.
- China is also interested in minerals such as gold, iron-ore, precious stones, chemicals, oil and natural gas in Ethiopia.
- South Sudan, a source for petroleum products, has had continued Beijing investment in the industry since the latter's initial entry in 1995.

Maritime interests:

- China's first and only military base outside its mainland is in Djibouti.
- During his visit in early 2022, Wang hinted at China's willingness to develop Eritrea's coast which would connect to China's investments in land-locked Ethiopia.
- The U.S. has speculated that China wishes to build another military base in Kenya and Tanzania, thereby increasing its military presence in the region.

Has the Horn of Africa been welcoming of China's presence?

- Africa has been keen on interacting with China.

- Despite the wariness surrounding China's projects in Africa, the governments have mostly been welcoming.
- When conflict broke out in Tigray in November 2020, Addis Ababa appreciated Beijing for respecting Ethiopia's sovereignty.
- In December 2021, Kenya defended Chinese projects in the country; President maintained that China-Africa partnership was mutually beneficial.
- In November 2021, Uganda's President suggested that China give access to its markets, in a fashion similar to the U.S. or Europe.

Is China's new focus on peace in the Horn a shift from Beijing's principle of nonintervention?

- Peace and stability is a mutual requirement for China and Africa.
- For Africa, Chinese investments could lead to stable environments which could help the countries achieve their peace and development objectives.
- For China, conflict in the region comes at a heavy cost.
- In Ethiopia, when the conflict broke out, over 600 Chinese nationals, working on different projects, were evacuated, putting several investments at risk.
- From a trading perspective, the region plays a significant role in achieving the objectives of the China-Africa Cooperation Vision 2035.

Shift in its principle of non-intervention:

- China's move towards peace in Africa indicates a shift in its principle of nonintervention.
- It is China's message that its presence in the continent has a larger objective and is not likely to be limited to the Horn of Africa.
- This includes an aim to project itself as a global leader and boost its international status.
- Further, the recent developments imply that China is focussing on a multifaceted growth in the continent for the long run.
- For Africa, China's presence is an alternative to the European powers, many of whom are facing criticism from African governments.
- Further, African governments, which do not conform to Western standards of democracy, interact better with powers like China and Russia.

Partnership for Global Infrastructure and Investment

Context:

- Recently, U.S. President along with his G7 allies unveiled the ambitious Partnership for Global Infrastructure and Investment (PGII), announcing the collective mobilisation of \$600 billion by 2027 to deliver "game-changing" and "transparent" infrastructure projects to developing and middle-income countries.

Relevance:

- GS II- International Relations

Dimensions of the Article:

1. What is the PGII?
2. What kind of projects will the PGII undertake?
3. What is China's BRI?
4. Is there any overlap between the two schemes?

What is the PGII?

- The PGII is being seen as the **G7's counter to China's multi-trillion dollar Belt and Road Initiative (BRI)** to build connectivity, infrastructure, and trade projects in Asia, Europe, Africa, and Latin America.
- The West has been sceptical of the BRI, since it was launched in 2013 by President Xi Jinping, as it was considered to be part of China's larger strategy to increase geopolitical influence in Asia and other developing countries.
- The U.S., along with G7 partners the U.K., Japan, France, Canada, Germany, Italy, and the European Union (EU), had in 2021 announced the launch of the **Build Back Better World (B3W)** with the aim of narrowing the \$40 trillion infrastructure gap in the developing world.
- **PGII is therefore, a relaunch of Mr. Biden's B3W plan.**
- The factsheet put out by the White House described the PGII as a "values-driven, high-impact, and transparent infrastructure partnership to meet the enormous infrastructure needs of low and middle-income countries and support the United States' and its allies' economic and national security interests".

Aim:

- The G7 members aim to collectively mobilise \$600 billion by 2027 to invest in sustainable and quality infrastructure projects in developing countries, including India, and strengthen global supply chains.
- Mr. Biden announced the country's pledge to channel \$200 billion in grants, public financing, and private capital over the next five years for the PGII.
- European Commission President declared Europe's pledge of mobilising 300 billion euros for the partnership over the same period.

What kind of projects will the PGII undertake?

- All PGII projects will be driven by the **pillars that will define the second half of the 21st century.**
- The G7 grouping aims to tackle the climate crisis and ensure global energy security through clean energy supply chains.
- The projects will focus on bolstering digital information and communications technology (ICT) networks facilitating technologies such as 5G and 6G internet connectivity and cybersecurity.
- The projects aim to advance gender equality and equity, and lastly, to build and upgrade global health infrastructure.
- The U.S International Development Finance Corporation (DFC), along with the G7 nations and the EU are disbursing a \$3.3 million technical assistance grant to build a vaccine facility in Senegal, having a potential yearly capacity of manufacturing "millions of doses of COVID-19 and other vaccines".
- In India, the U.S. DFC will invest up to \$30 million in Omnivore Agritech and Climate Sustainability Fund 3, an impact venture capital fund that invests in entrepreneurs building the future of agriculture, food systems, climate, and rural economy in India.

What is China's BRI?

- China began the Belt and Road Initiative in 2013 under its President Xi Jinping.
- It aims to revive the ancient trade routes crossing to and from China—from Rome in Europe to East Asia.
- Under this, the Chinese government helped in providing loans for infrastructure projects to various countries, and in many cases, Chinese companies were awarded contracts for carrying out the work.
- This helped China mark its footprints at a global level.
- However, China was criticised in the West and by some other countries for providing unsustainable debts to countries that will be unable to repay them.

According to a 2019 World Bank report,

- Among the 43 corridor economies for which detailed data was available, 12 could face a situation where debts were not sustainable, which could lead to public assets being handed over to foreign contractors or China itself.

- The report adds if issues of environmental degradation, high debts, and corruption are successfully countered and the BRI is fully implemented to its potential, it could increase trade between 1.7 and 6.2 percent for the world, increasing global real income by 0.7 to 2.9 percent.

Is there any overlap between the two schemes?

- While the US has been critical of BRI, other countries of the G7 have had varying responses to it.
- Italy became the first G7 member to be a part of the BRI in 2019, and the British finance minister Philip Hammond described the policy as a “vision” in the same year, though it is not officially a part of the BRI.
- Germany and France, while not directly participating in the BRI, have also partnered with China in building rail networks and other projects for connectivity.

The European Union's ban on Russian oil

Context:

- As part of the sixth package of sanctions since Russia's invasion of Ukraine, the European
- Union member states reached an agreement to ban 90% of Russian crude oil imports by the end of the year.

Relevance:

- GS II- International Relations

Dimensions of the Article:

- 1. Original proposal of the oil embargo
- 2. Rationale behind such a move
- 3. What are the terms of the 'compromise deal' that has been agreed upon?
- 4. Why was exemption given for pipeline imports?
- 5. How will the sanctions affect Russia?
- 6. How will the sanctions affect Europe?
- 7. Indian response

Original proposal of the oil embargo

- The proposal to completely phase out Russian crude and refined products from EU territory within a time frame of six to eight months.
- Complete import ban on all Russian oil, seaborne and pipeline crude and refined.
- It needed the agreement of all the 27 EU member states in order to be implemented.

Rationale behind such a move

- The Russian economy is heavily dependent on energy exports, with the EU paying billions of dollars every month to Russia for its crude and refined products.
- The EU wants to block this massive revenue inflow which, as repeatedly pointed out by Ukrainian President, is akin to Europeans bankrolling Russia's war.
- The EU has been attempting, ever since the Ukraine invasion, to build consensus on ways to hurt Russia economically so that it is forced to roll back its military offensive.
- The most obvious route was to stop buying Russian energy, which isn't easy given European households' dependence on Russian oil and gas.

Two long term EU objectives:

- Reducing fossil fuel dependence in favour of renewables.
- Eliminating dependence on Russian energy for greater strategic autonomy and energy security
- So, Member states agreed to make a start by phasing out Russian oil.

What are the terms of the 'compromise deal' that has been agreed upon?

- The main departure from the original proposal is the “temporary exemption” from the oil embargo for countries that import Russian crude via pipeline.
- In other words, EU leaders have, in principle, agreed to ban all seaborne imports of Russian crude, which account for two-thirds of EU's oil imports from Russia.
- However, with Germany and Poland pledging to phase out even their pipeline imports from Russia by the end of the year, the embargo would eliminate 90% of Russian oil imports.

Hungary:

- The remaining 10% that's been allowed represents a free pass for Hungary, the Czech Republic, Slovakia, and Bulgaria to continue imports via the Druzhba pipeline, the world's largest oil pipeline network.
- Additionally, Hungary has obtained a guarantee that it could even import seaborne Russian oil in case of a disruption to their pipeline supplies.
- This was deemed a legitimate concession since the pipelines do pass through the war zone in Ukraine.
- **Why was exemption given for pipeline imports?**
- The exemption for pipeline imports was made on the logic that landlocked countries (Hungary, Czech Republic and Slovakia) that are heavily dependent on Russian pipeline oil do not have a ready option to switch to alternative sources in the absence of ports.
- Hungary imports 65% of its oil via pipeline from Russia,
- 50% of the Czech Republic's oil imports are Russian,
- While Slovakia gets 100% of its oil from Russia.

How will the sanctions affect Russia?

- Analysts calculate that a two-thirds cut in Europe's imports of Russian oil would mean a reduction of 1.2-1.5 million barrels a day in oil, and one million barrels in refined products, which might cause Russia an annual loss in revenue of \$10 billion.
- Given Russia's limited storage infrastructure, the cutback in demand would force Russia to find other markets. Since that won't be easy, Russia might have to cut production by 20-30%.
- So far, Asian importers, especially India, have absorbed some of the excess inventory at discounted prices.

How will the sanctions affect Europe?

- It is likely to further fuel inflation in Europe, where many countries are already facing a cost-of-living crisis.
- EU leaders have tried to balance contradictory pressures — of having to take decisive action against a military aggressor on European soil, but without causing too much pain to its citizens.
- But European lifestyles have tended to take cheap Russian energy for granted, and if inflation peaks further, the EU runs the risk of losing public support for harsh sanctions.

What about import of Russian gas?

- Compared to Russian oil, Europe's dependence on Russian gas is much greater, and this embargo leaves the import of Russian gas — which accounts of 40% of Europe's natural gas imports — untouched.
- In other words, Europe will continue to pay Russia for gas imports.
- But since crude is more expensive than natural gas, the oil ban is expected to hurt Russian revenues.

Indian response

- India ramped up **purchases of Russian crude at discounted prices** in the months following the Russian invasion, and this policy is expected to continue.

- The announcement of the EU ban caused an immediate surge in oil prices, and as Europe seeks alternate sources – from West Asia, Africa and elsewhere — for its oil needs, prices are expected to stay high.
- In this context, with Russia reportedly offering discounts of \$30-35 per barrel, India has found it convenient to make the most of the cheap Russian crude on offer.

Mutual Legal Assistance Treaties

Context:

- The CBI is in the process of sending requests to several countries seeking information under the MLATs about those involved in the online sexual abuse of minors and circulation of child pornographic material on social media platforms.

Relevance:

- GS II- International Relations

Dimensions of the Article:

- 1. About MLATs
- 2. Benefits of Treaty
- 3. Enforcement of MLAT in India

About MLATs

- The MLATs in criminal matters are the bilateral treaties entered between the countries for providing international cooperation and assistance.
- These agreements allow for the exchange of evidence and information in criminal and related matters between the signing countries.

Benefits of Treaty

- **Enhances the effectiveness:**
- It enhances the effectiveness of participating countries in the investigation and prosecution of crime, through cooperation and mutual legal assistance.
- **Broad legal framework:**
- It will provide a broad legal framework for tracing, restrain and confiscation of proceeds and instruments of crime as well as the funds meant to finance terrorist acts.
- **Instrumental in gaining better inputs:**
- It will be instrumental in gaining better inputs and insights in the modus operandi of organized criminals and terrorists.
- These in turn can be used to fine-tune policy decisions in the field of internal security.

Enforcement of MLAT in India

Nodal Ministry in India:

- The **Ministry of Home Affairs** (MHA) is the central authority and nodal ministry for seeking and providing mutual legal help in criminal law situations.
- When such requests are handled through diplomatic channels by these Ministries, the Ministry of External Affairs (MEA) may be involved in the process.

Legal basis:

- **Section 105 of the Criminal Procedure Code (CrPC)** mentions the Centre's obligation to make reciprocal arrangements with other governments.

Organisation of Islamic Cooperation

Context:

- Recently, India hit out at the Organisation of Islamic Cooperation (OIC) over its statement condemning the derogatory comments made by two BJP leaders on Prophet Muhammed and Islam, even as more nations, including India's crucial Gulf partner, the UAE, security partners Oman and Jordan, Pakistan and the Maldives, came out strongly against the remarks.

Relevance:

- GS II- International Relations

Dimensions of the Article:

1. About the Organisation of Islamic Cooperation (OIC)
2. Why is the region important for India?
3. How much trade does India do with countries in this region?

About the Organisation of Islamic Cooperation (OIC)

- The Organisation of Islamic Cooperation is an international organization founded in **1969**, consisting of 57 member states, with a collective population of over 1.8 billion as of 2015 with 53 countries being Muslim-majority countries.
- The organisation states that it is **"the collective voice of the Muslim world"** and works to "safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony".
- The OIC has permanent delegations to the United Nations and the European Union.
- Some members, especially in West Africa and South America, are – though with large Muslim populations – not necessarily Muslim majority countries.
- A few countries with significant Muslim populations, such as Russia and Thailand, sit as Observer States.

Why is the region important for India?

- India has enjoyed centuries of good relations with countries like Iran, while smaller gas-rich nation Qatar is one of India's closest allies in the region.
- India shares good relations with most of the countries in the Gulf.
- The two most important reasons for the relationship are **oil and gas, and trade**.
- Two additional reasons are the huge number of Indians who work in the Gulf countries, and the remittance they send back home.

How much trade does India do with countries in this region?

- The Gulf Cooperation Council (GCC), which includes **UAE, Bahrain, Saudi Arabia, Oman, Qatar and Kuwait** has emerged as a major trading partner of India and has vast potential as India's investment partner for the future.
- The GCC's substantial oil and gas reserves are of utmost importance for India's energy needs.

UAE:

- The UAE was India's third largest trading partner in 2021-2022, and second largest for both exports (\$28 billion) and imports (\$45 billion) when these are counted individually.
- In terms of total trade volume, the UAE (\$72.9 billion) was behind the United States (\$1.19 trillion) and China (\$1.15 trillion).
- The UAE accounted for 6.6% of India's total exports and 7.3% of imports in the last financial year, up 68.4% since the previous year when international trade was impacted by the pandemic.

I2U2 Initiative

Context:

- As part of I2U2 initiatives, India, Israel, UAE, and the US will hold its first virtual summit in July 2022.

Relevance:

- GS II- International Relations

Dimensions of the Article:

- 1. About I2U2 Initiative
- 2. Significance

About I2U2 Initiative:

- Following the **Abraham Accords between Israel and the United Arab Emirates**, I2U2 was founded in October 2021 to address marine security, infrastructure, and transportation challenges in the region.
- It was known as the '**International Forum for Economic Cooperation**' at the time.
- The '**West Asian Quad**' was coined to describe this situation.
- India, Israel, the United States, and the United Arab Emirates have formed the I2U2 initiative.
- 'I2' refers for India and Israel in the group's name, while 'U2' stands for the United States and the United Arab Emirates.
- This is an outstanding achievement that reflects the region's geopolitical shifts.

Focus:

- This will not only revitalize and re-energize the system of alliances and partnerships around the world, but also stitch together partnerships that did not exist previously or were not utilized to their full extent.

Significance:

- It empowers partners and encourages them to collaborate more closely, resulting in a more stable region.
- India is seen as a large consumer market as well as a large producer of high-tech and highly sought-after items in the United States.
- When it comes to Israel's relationship with the United Arab Emirates, the US wants to improve commercial and economic ties between the two nations.
- The Abraham Accords will allow India to enhance its relationship with Israel without jeopardising its ties with the UAE and other Arab states

West Seti Power Project**Context:**

- India will be taking over an ambitious hydropower project in Nepal — West Seti — nearly four years after China withdrew from it, ending a six-year engagement between 2012 and 2018.

Relevance:

- GS II- India & Its Neighborhood - Relations

Dimensions of the Article:

- 1. What is West Seti Hydel Project?
- 2. Power Relations Between India and Nepal: Importance
- 3. Problems with project implementation
- 4. India-Nepal Ties

What is West Seti Hydel Project?

- The West Seti Dam is a proposed 750-megawatt (MW) hydroelectric dam on the Seti River in Nepal's Far-Western Development Region, primarily as a storage scheme to generate and export large amounts of electrical energy to India.

- The project is expected to provide Nepal with 31.9 percent free electricity.
- Locals who are impacted by the project will also receive a part of Nepali Rs 10 million, as well as 30 free units of electricity per month.

Power Relations Between India and Nepal: Importance

- Nepal has a large number of power sources, with over 6,000 rivers and an estimated capacity of 83,000 MW.
- India has made numerous formal approaches to Nepal, requesting preferential access to Nepali waters if it can match bids from other countries.
- India is seen as a viable power market for Nepal, and the country has committed to or stated its intention to harness important rivers in the north.

Problems with project implementation

- In Nepal, there has been some concern about India's capacity to complete projects on schedule.
- An ambitious Mahakali treaty was signed in 1996, with a capacity of 6,480 MW, but India has yet to release the Detailed Project Report.
- The Upper Karnali project, for which the multinational GMR signed the contract, has made no headway for years.
- One of the main reasons for the delays in these projects was a lack of agreement on a power purchase agreement with India.
- The Himalayan Region's seismic sensitivity is also a major consideration.

Benefits for Nepal

- Nepal has a massive power shortfall as it generates only around 900 MW against an installed capacity of nearly 2,000 MW.
- Although it is currently selling 364 MW power to India, it has over the years importing from India.

India-Nepal Ties:

- Nepal is an important neighbour of India and occupies special significance in its foreign policy because of the geographic, historical, cultural and economic linkages/ties that span centuries.
- There has been a long tradition of free movement of people across the open border.
- Nepal shares a border of over 1850 km with five Indian states – Sikkim, West Bengal, Bihar, Uttar Pradesh and Uttarakhand.
- The India-Nepal Treaty of Peace and Friendship of 1950 forms the bedrock of the special relations that exist between India and Nepal.
- Nepalese citizens avail facilities and opportunities on par with Indian citizens in accordance with the provisions of the Treaty.
- Nearly 8 million Nepalese citizens live and work in India.

Connectivity and Development Partnership between India and Nepal:

- Government of India's development assistance to Nepal is a broad-based programme focusing on creation of infrastructure at the grass-roots level, under which various projects have been implemented in the areas of infrastructure, health, water resources, education and rural & community development.
- In recent years, India has been assisting Nepal in development of border infrastructure through upgradation of 10 roads in the Terai area
- development of cross-border rail links at Jogbani-Biratnagar, Jaynagar-Bardibas
- establishment of Integrated Check Posts at Birgunj, Biratnagar, Bhairahawa, and Nepalgunj.
- The total economic assistance earmarked under 'Aid to Nepal' budget in FY 2019-20 was INR 1200 crore.

- Apart from grant assistance, Government of India has extended Lines of Credit of USD 1.65 billion for undertaking development of infrastructure, including post-earthquake reconstruction projects.
- In April 2018, the 'India-Nepal New Partnership in Agriculture' was launched with a focus on collaborative projects in agricultural research, development and education

How Hanoi and New Delhi Are Fortifying Defense Ties

Context

- The furtherance of India's Act East Policy, maritime multilateralism, maritime security outreach and the building of stronger networks across the Indo-Pacific are some of the key elements which have made New Delhi and Hanoi natural partners. The two countries recently deepened bilateral cooperation with the signing of the Joint Vision Statement on India-Vietnam Defence Partnership towards 2030 during the recent visit of Defence Minister to Vietnam.

Relevance

- GS II: India and its Neighbourhood.

Dimensions of the Article

- India and Vietnam: Latest Developments
- India-Vietnam Cooperation
- New Delhi stood for Vietnam
- Way Forward

India and Vietnam: Latest Developments

- In the meeting with his counterpart, Vietnam's Minister of National Defence General Phan Van Giang, the early finalisation of the \$500 million Defence Line of Credit extended by India to the latter along with the implementation of existing projects which would complement India's 'Make in India, Make for the world' and
- Hanoi's defence capabilities were also discussed.
- The two sides also signed a Memorandum of Understanding (MoU) on Mutual Logistics Support.
- This is the first agreement of its kind that Hanoi has entered into with any other country and elevates the standing of Comprehensive Strategic Partnership (CSP) which Hanoi shares with New Delhi since 2016 (along with only Russia and China).

India – Vietnam Cooperation

- **Strategic Partnership:** India and Vietnam agreed to strengthen their strategic partnership "in line with India's Indo-Pacific Oceans Initiative (IPOI) and the ASEAN's Outlook on Indo-Pacific to achieve shared security, prosperity and growth for all in the region"
- **Economic Cooperation:** During the Financial Year (FY) April 2020 – March 2021, bilateral trade between India and Vietnam reached USD 11.12 billion. Indian exports to Vietnam amounting to USD 4.99 billion and Indian import from Vietnam at USD 6.12 billion.
- **Defence Cooperation** has been growing steadily following the signing of the Defence Protocol in 2000 and covers extensive navy-to-navy cooperation spanning the exchange of intelligence, production and logistical support for Vietnam's defence requirements, development of naval facilities such as **Nha Trang**, defence dialogues, high-level visits and the supply of warships and cruise missiles. The year 2022 marks fifty years of diplomatic relations between the two countries.
- **Maritime Cooperation:** Because of the volume of maritime trade, energy reserves in Indo Pacific region, maritime cooperation between countries in the region have expanded exponentially.
- Both countries find convergence in their approaches towards the maintenance of stability and security of the Indo-Pacific which has translated into diplomatic and political support in the context of developments within the region.

- The enhanced geostrategic prominence and uncertainties vis-à-vis China's expanding and often abrasive footprints in the Indo-Pacific have resulted in emphasis on cooperative mechanisms.
- Vietnam has and continues to be one of the most vocal countries with respect to China's periodic transgressions in the South China Sea.
- In India, Vietnam has found an equally uncompromising partner when it comes to the question of violations of freedom of navigation and threats to sovereign maritime territorial rights as enshrined under international maritime law.
- Indeed, it is believed that Hanoi used the term Indo-Pacific for the first time in 2018 in its Joint statement with India.

New Delhi Stood For Vietnam

- New Delhi has supported Vietnam's position in the South China Sea with respect to Beijing's destabilising actions and coercive tactics backing the verdict of the Permanent Court of Arbitration in the case brought by Manila in 2016 and reiterating the irrefutability
- India has also not backed down from continuing ONGC Videsh Ltd (OVL)'s oil exploration project in Block 128 (which is within Hanoi's EEZ) despite China's protests.
- In 2020 China's incursion into Ladakh was quickly followed by the deployment of warships by India to the South China Sea in an instance of asymmetrical warfare and a signalling that India will not stand down.

Way Forward

- The cordial bilateral relations together with the deepening of India's operational outreach in the Indo-Pacific have successfully indicated and cemented its role as a capable, willing and reliable partner. Despite the fact that the China factor has provided impetus to the solidification of ties, it is also important to consider that mutual cooperation is not driven solely by it. Both countries have expanded areas of collaboration and are supportive of each other's individual and multilateral involvements within the rubric of the Indo-Pacific

India, EU Resume FTA Negotiations

Context

- After an eight-year hiatus, India and the European Union (EU) started discussions for a *Comprehensive Free Trade Agreement*, with the goal of boosting economic connections between the two areas. India began discussions with the EU on a trade deal in 2007, but the talks halted in 2013 due to disagreements on key points.

Relevance

- GS-II: Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

Dimensions of the Article

- The Important Advantages of Free Trade Agreements
- What are the main characteristics of FTAs?
- The Significance of FTAS
- Drawbacks
- India's efforts to enhance existing FTAs
- Way Forward

The Important Advantages of Free Trade Agreements

- Tariff reduction or abolition on qualifying products. This increases the market competitiveness.

- Intellectual Property Protection: intellectual property rights are protected and enforced in the FTA partner nation.
- Product Standards: Exporters' capacity to participate in the formulation of product standards in the FTA partner nation.
- Selling to the government: a company's capacity to bid on specific government procurements in the FTA partner nation.
- Service providers: the capacity of service providers to provide their services in the FTA partner countries.
- Investors are treated fairly if they are treated as favourably as the FTA partner nation treats its own investors and their investments, as well as investors and investments from any third country.
- Free trade agreements increase trade flows while strengthening connections with our trading partners.
- Free trade agreements remove behind-the-border barriers that impede the movement of products and services between parties, boost investment, and improve collaboration, as well as address other concerns such as intellectual property, e-commerce, and government procurement.
- Free trade agreements may boost productivity and GDP growth by providing domestic firms with cheaper inputs, introducing new technology, and encouraging competition and innovation.
- Free trade agreements foster regional economic integration and the development of shared approaches to trade and investment, including the adoption of common Rules of Origin and greater acceptance of product standards.
- Free trade agreements can boost export competitiveness in the partner market and increase the appeal of the country as an investment destination.
- Free trade agreements can boost commercial possibilities and help to the longterm economic growth of developing economies.
- Free trade agreements can continue to benefit parties even after they are implemented, such as through phase-ins and built-in agendas that stimulate continued domestic reform and trade liberalisation.

What are the main characteristics of FTAs?

- The following are the key characteristics of Free Trade Agreements (FTAs):
- FTA members clearly state the charges and tariffs that will be levied on member countries for imports and exports.
- FTAs normally encompass trade in (a) goods, such as agricultural or industrial products, (b) services, such as banking, construction, commerce, and so on, (c) intellectual property rights (IPRs), (d) investment, (e) government procurement, and so on.
- FTAs also, for the most part, include a criterion known as the 'Rules of Origin (RoO),' which is necessary for determining the country of origin of a product in order to impose favourable tariffs on international commerce.
- FTAs are an exception to the WTO's Most Favoured Nation principle (World Trade Organization).

The Significance of FTAs

- *Global competition:* FTAs promote global competition by boosting the efficiency of local industries, specialisation within countries, and the availability of cheaper and higher-quality products for consumers. Global monopolies are removed as a result of FTAs because of greater competition.
- *Possibilities for India in a post-COVID world:* (a) Structural developments, such as the rise of remote learning and work from home, have the potential to increase demand for India's tradable services. (a) Regardless of how slowly global product imports grow, India is small enough to gain market share while maintaining high rates of export growth. (c) India has enormous potential to boost unskilled labourbased exports, particularly in areas where China is quickly losing ground, such as apparel, clothing, leather, and footwear.
- *Global Value Chains (GVCs):* Free trade agreements (FTAs) have the potential to accelerate economic integration among nations, making India an important cog in the Global Supply Chain.

Drawbacks

- *Tariff*: India's commitment was to reduce tariffs on 2% imports, but the tariff reduction it provided in its FTAs were in the range of 74-86 percent, which proved unattainable for India. It lags behind nations such as Japan and Singapore in terms of industrial growth and local industry capacity to compete on global platforms.
- *Non-tariff hurdles*: Indian exporters continue to encounter a variety of non-tariff barriers in partner countries, including import restrictions, import licences, sanitary and phytosanitary measures, product standards, and technical impediments.
- *Lack of Trading Ease*: Inadequate information on FTAs, difficult principles of origin requirements, low preference margins, greater compliance costs, and regulatory deferrals restricted exporters from accessing preferred channels.
- *Services component*: India's success under FTAs is impeded by the lack of Mutual Recognition Agreements (MRAs). It should be highlighted that services are seen as the country's strong suit. MRAs enable competent individuals in one region to fulfil all standards for providing services in any partner nation organically.
- *Less competitive in the world market*: India's exporters confront a number of internal challenges, including greater logistical costs and supply-side limitations, which make them less competitive in the global market.
- *Spaghetti bowl impact*: India has separate FTAs with Malaysia and Singapore, both of which are members of India's ASEAN CECA.

India's efforts to enhance existing FTAs

- *Improving the RoO mechanism*: The Ministry of Finance, Government of India, has issued the Custom (Administration of Rules of Origin under Trade Agreements) Rules, 2020 (CAROTAR 2020) to tighten the authorisation of RoO standards under FTAs.
- *Bilateral Investment Treaties (BITs)*: India evaluated its existing BITs in 2015 and issued a Model BIT in 2016. This updated methodology will be used to renegotiate current investment chapters in CECAs/CEPAs/FTAs and other treaties.
- *Examining existing FTAs*: In 2019, India and ASEAN met in Thailand and resolved to begin reviewing the ASEAN-India Trade in Goods Agreement, which has been in effect since January 2010.
- Free trade agreements have been implemented for foreign policy reasons rather than for bilateral economic gain.
- Free trade agreements do not have the same impact on trade liberalisation as multilateral accords.
- Free trade agreements just foster broad, competitive trading blocs, which may lead to economic volatility.

Way Forward

- To summarise, Free Trade Agreements are one method of promoting integration among various countries. Over the previous few decades, the number of FTAs has increased substantially and currently accounts for the bulk of global commerce.
- Economic scholars see free trade agreements as a crucial trade policy tool for the United States and other major trading nations.
- India's trade policy framework must be supported by economic reforms that result in an open, competitive, and technologically inventive Indian economy.
- Nationalism, populism, nativism, and protectionism exploit people's sense of being left behind and alienated from the system.
- As a result, we must promote universal participation in economic networks that allow people and families to attain financial stability and explore chances for advancement.

Challenges in Dealing With Indo-Pacific

Context

- The Indo-Pacific region has been under pressure and East Asia, in particular, has had to weather repeated storms.

Relevance

- GS-II: Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

Dimensions of the Article

- Background
- China-challenge in Indo-Pacific
- Will IPEF framework help in tackling challenges from China?
- Two facets of Indo-Pacific
- Way Forward

Background

- Recently, U.S. President Joseph Biden was on his five-day visit to Asia.
- During this visit, the new conservative South Korean government showed a willingness to expand the presence of a U.S. missile defense system in the country, which had earlier angered China.
- In Japan, the administration promised him that it was ready to do away with its long-standing 1% GDP ceiling for annual defense spending.
- Mr. Biden said at a press conference that the U.S. would intervene militarily to defend Taiwan if it came under attack from China.
- The President and members of his delegation later clarified that there is no change in the substance of American foreign policy, which is still governed by the Taiwan Relations Act.
- As per the 1979 Congressional law, the U.S. "shall provide Taiwan with arms of a defensive character" so that the region can defend itself.
- The law says nothing about the U.S. being required to step in militarily to defend Taiwan in the event of an invasion by China.

China-challenge in Indo-Pacific

- South Korea and Japan face regular nuclear and missile threats from North Korea.
- Challenge to international maritime law: China not only challenges international maritime laws in the South China Sea, but also confronts Japan over the Senkaku Islands.
- Spratly Islands dispute: Six nations, including China and Taiwan, are involved in the dispute over the Spratly Islands, which are supposedly sitting on vast reserves of oil and natural gas.
- Militarization of disputed isles: China has vigorously militarised some portions of the disputed isles, islets and coral reefs; and countries like Vietnam and the Philippines are anxious not to be left behind.

Will IPEF framework help in tackling challenges from China?

- The US has sought to deal with China by establishing an Indo-Pacific Economic Framework (IPEF) with Australia, Brunei, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, and Vietnam.
- Four pillars of IPEF: The IPEF will work on fine-tuning four major pillars: standards and rules for digital trade; resilient supply chains; green energy commitments; and fair trade.
- Issues of trade and tariffs: However, there is discontent that the framework does not address issues of trade and tariffs.
- Lack of trade component: Asian partners really want is trade, they want market access.
- And the trade component of the IPEF is really lacking.

Two facets of Indo-Pacific

- Balance relations with US and China: One is that China's neighbours would rather balance relations between Washington and Beijing.
- Extent of resistance: Second is the extent to which countries in the region will want to get on the anti-China bandwagon, economic or strategic.
- Whether it is in East, Southeast or South Asia, every country has its own unique relationship with Beijing.
- India may be a part of the Quad, but is quite mindful that it is the only country in the group that shares a land border with China.
- South Korea and Japan are part of a strong American security/strategic partnership but will be keen on maintaining their economic status with China.
- This is also true for the Association of South East Asian Nations.

Way Forward

- Given the complex nature of the threats and the challenges the Indo-Pacific faces, drawing up any strategy remains to be an uphill task.

RUSSIA UKRAINE CONFLICT*Context*

- Into the second 100 days of the Russia-Ukraine conflict, the world is awash with speculation about the reasons for the so-called failure of the Russian armed forces to deal a decisive blow against a much smaller Ukrainian army. Russia is yet to achieve what can be termed a decisive victory in any sector of the current conflict.

Relevance

- GS-II: Effect of Policies and Politics of Developed and Developing Countries on India's interests, Indian Diaspora.

Dimensions of the Article

- Analyzing Russia's response
- The role of 'Cyber'
- Earlier attacks
- But no Armageddon
- The West's Line
- Way Forward

Analyzing Russia's response

- Experts have adduced several reasons in the West for the lacklustre performance of the Russian army. They are:
- Lack of motivation and the poor morale of the Russian forces sent to Ukraine
- Absence of trust between the higher and the middle/ lower rungs of the Russian armed
- Russian weaponry is outdated and ineffective to fight an informationalized war under modern conditions
- Generous help from the North Atlantic Treaty Organization (NATO) and western powers.
- Russian commanders have also proved inept in devising plans and making appropriate decisions against a determined enemy in battlefield conditions.
- All this has contributed to a feeling in the West that Russia's armed forces are overrated, and that the threat they pose to the democratic West is greatly exaggerated.

- The reality is that much of Russia's advanced weaponry has not been employed in the Ukraine conflict hence, the West should not read the 'tea leaves' wrongly.

The role of 'Cyber'

- Cyber is often touted as the Fifth Dimension of warfare It may be worthwhile to examine whether this indeed is the first major conflict in which 'cyber' is playing a crucial role
- Although cyberspace is a manmade domain, it had become critical to military operations on land, sea, air, and space.
- A former U.S. Secretary of Defence a few years ago, even talked of a possible 'Cyber Pearl Harbour' to paralyze nations
- West regularly portrays Russians as using cyber tactics to destroy nations.
- The Russian military oligarchy is indeed among the world leaders in digital disruption and cyber methodology.
- Russia would have swamped Ukraine with an avalanche of digital attacks.
- Ukraine, for its part, has its own digital army, including a corps of digital weapons.
- Several weeks into the war, however, there is little clarity as to the extent to which both sides have deployed cyberweapons.

Earlier Attacks

- There has been alleged Russian operatives waging a cyberwar against Ukraine.
- Ukrainian cyber security experts have also claimed to have prevented a major cyber operation — linked to the Kremlin — to derail the Ukrainian presidential election some years ago.
- Both sides now possess and use malware such as data wipers which have proved highly effective.
- On the day the Russian invasion of Ukraine began, Russian cyber units are believed to have successfully deployed destructive malware against several Ukrainian military targets.
- The Ukrainian Satellite Internet Provider, for instance, was the target of one such cyberattack, leading to widespread communications outages.
- A series of distributed denial of service (DDoS) attacks against Ukrainian banking and defense websites occurred simultaneously.
- In addition, Wiper malware was introduced into several Ukraine Government networks, while the websites of the Ukrainian Defence Ministry and military targets faced a series of DDoS and phishing attacks.

But no Armageddon

- The string of small-scale cyberattacks cannot be said to have had any material impact on the conduct or outcome of the conflict.
- Russia has not embarked on a massive All-out cyber offensive.
- It is very likely, and possibly a fact, that there are major difficulties in planning and executing massive cyberattacks on a short timeline to ensure higher efficacy of kinetic attacks.
- The fact that both Russia and Ukraine, which have powerful armies of cyber specialists, more so hackers (Ukraine even tried to create an international army of hackers to target critical Russian systems), have not succeeded in causing a cyber Armageddon can possibly be seen as a reprieve.
- There has always been a view among cyber experts that 'Cyber Space is nozonear zone', and that it is fundamentally a civilian
- Cyber Power is yet to achso-calledso called threat potential in terms of decisive impacts in battlefield situations.
- As of now, cyberattacks have an impact that is well below the threshold of what a nuclear war, even a limited one, could produce.

The West's Line

- West is currently busy floating some 'red herrings' that Moscow may be planning to embark on a nuclear conflict.
- The West believes that Russia could possibly employ tactical/battlefield nuclear weapons to drive home Ukrainian defenders.
- West has from time to time observed that Russia is a firm believer in 'the value of nuclear weapons as a tool of statecraft'
- Employing low-yield nuclear weapons, would help send a clear message not only to Ukraine but also to NATO and the United States as well, in regard to the extent of Russia's determination not to allow any further extension of NATO to the east.

Way Forward

- Conjuring up such a scenario by the West with little evidence to support this argument could be dangerous. It could well turn into a self-fulfilling prophecy. There are inherent dangers attached to all such speculation. A Nuclear War though a low scale one may not augur well for the world.

INDIAN ECONOMY

Index of Eight Core Industries

Focus: GS III- Indian Economy

Why in News?

- The combined Index of Eight Core Industries stood at 143.2 in April 2022, which is an increased of 8.4 per cent (provisional) as compared to the Index of April 2021.
- The production of Coal, Electricity, Refinery Products, Fertilizers, Cement and Natural Gas industries increased in April 2022 over the corresponding period of last year.

About Index of Eight Core Industries:

- The Eight Core Industries comprise 40.27% of the weight of items included in the Index of Industrial Production (IIP).
- **Released by:** The Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade
- **Base year:** 2011-12
- ***Below image attached Eight Core Industries based on their weightage.***

Eight Core Industries (Weightage)



Coal (10.33%)



Crude Oil (8.98%)



Natural Gas (6.88%)



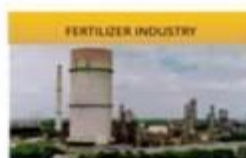
Refinery (28.04%)



Steel (17.92%)



Cement (5.37%)



Fertilizer (2.63%)



Electricity (19.85%)

Index of Industrial Production (IIP):

- The Index of Industrial Production (IIP) is an index that shows the growth rates in different industry groups of the economy in a fixed period of time.
- It is compiled and published monthly by the Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation (MOSPI).
- The Central Statistics Office (CSO) revised the base year of the all-India Index of Industrial Production (IIP) from 2004-05 to 2011-12 on 12 May 2017.
- IIP is a composite indicator that measures the growth rate of industry groups classified under broad sectors, namely, Mining, Manufacturing, and Electricity.
- Use-based sectors, namely Basic Goods, Capital Goods, and Intermediate Goods.

Significance of IIP:

- IIP is the only measure on the physical volume of production.
- It is used by government agencies including the Ministry of Finance, the Reserve Bank of India, etc., for policy-making purposes.
- IIP remains extremely relevant for the calculation of the quarterly and advance GDP estimates.

Bad banks

Context:

- Recently, Finance Minister announced that the National Asset Reconstruction Company (NARCL) along with the India Debt Resolution Company (IDRCL) will take over the first set of bad loans from banks and try to resolve them.

Relevance:

- GS-III: Indian Economy (Growth and Development of Indian Economy, NPAs, Banking)

Dimensions of the Article:

- 1. NPA stress in the Indian financial system
- 2. What is an Asset Reconstruction Company?
- 3. What are Bad Banks?
- 4. National Asset Reconstruction Company Ltd (NARCL)
- 5. Highlights RBI's report on Growth of the ARC Industry

- 6. Issues with Indian ARCs

NPA stress in the Indian financial system

- The Indian banking system has been reeling under the pressure of nonperforming assets (NPAs) since 2015.
- The twin balance sheet problem which caused a lot of stress amounted to a huge challenge for the Indian economy.
- Twin balance sheet problem is a scenario where the balance sheets of both public sector banks (PSBs) and some corporate houses are in bad shape. It is known as the twin balance sheet problem as the challenges faced by the banks are linked to that of the corporate sector. The corporates are unable to repay their loans to banks which in turn affect the capacity of the banks to lend.
- The enhanced stresses experienced by both lenders and borrowers had the potential to lead to financial instability and also undermine the growth potential of the Indian economy.

Attempts at resolution of NPAs

- Various resolution measures like **Insolvency and Bankruptcy Code (IBC)**, strengthening of Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFAESI Act) and Debt Recovery Tribunals, as well as setting up of dedicated Stressed Asset Management Verticals (SAMVs) in banks for large-value NPA accounts were undertaken to bring down NPAs
- In spite of these efforts, a substantial amount of NPAs continues on the balance sheets of banks primarily because the stock of bad loans as revealed by the Asset Quality Review is not only large but fragmented across various lenders.

What is an Asset Reconstruction Company?

- An asset reconstruction company is a special type of financial institution that buys the debtors of the bank at a mutually agreed value and attempts to recover the debts or associated securities by itself.
- The asset reconstruction companies or ARCs are registered under the RBI. Hence, RBI has the power to regulate the ARCs.
- ARCs are regulated under the **Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002 (SARFAESI Act, 2002)**.
- The ARCs take over a portion of the debts of the bank that qualify to be recognised as Non-Performing Assets. Thus, ARCs are engaged in the business of asset reconstruction or securitization (securitization is the acquisition of financial assets either by way of issuing security receipts to Qualified Buyers or any other means) or both.
- All the rights that were held by the lender (the bank) in respect of the debt would be transferred to the ARC. The required funds to purchase such debts can be raised from Qualified Buyers.
- The ARC can take over only secured debts which have been classified as a nonperforming asset (NPA). In case debentures / bonds remain unpaid, the beneficiary of the securities is required to give a notice of 90 days before it qualifies to be taken over.

What are Bad Banks?

- A Bad Bank (usually set up as a government-backed bad bank) is technically an **asset reconstruction company (ARC)** or an asset management company.
- Bad banks are typically set up in times of crisis when long-standing financial institutions are trying to recuperate their reputations and wallets.

How does it work?

- A bad bank buys the bad loans and other illiquid holdings of other banks and financial institutions, which clears their balance sheet.
- A bad bank structure may also assume the risky assets of a group of financial institutions, instead of a single bank.

- The bad bank is not involved in lending and taking deposits, but helps commercial banks clean up their balance sheets and resolve bad loans.

National Asset Reconstruction Company Ltd (NARCL)

- **National Asset Reconstruction Company Ltd (NARCL)** is the name coined for the bad bank announced in the Budget 2021-22.
- The new entity is being created in collaboration with **both public and private sector banks**.
- NARCL will take over identified bad loans of lenders and the lead bank with offer in hand of NARCL will go for a 'Swiss Challenge', where other asset reconstruction players will be invited to better the offer made by a chosen bidder for finding higher valuation of an NPA on sale. The company will pick up those assets that are 100 per cent provided for by the lenders.
- The biggest advantage of NARCL would be aggregation of identified NPAs (non-performing assets). This is expected to be more efficient in recovery as it will step into the shoes of multiple lenders who currently have different compulsions when it comes to resolving a bad loan.
- After enactment of the Securitisation and Reconstruction of Financial Asset and Enforcement of Security Interest (SARFAESI) Act in 2002, regulatory guidelines for ARCs were issued in 2003 to enable development of this sector and to facilitate smooth functioning of companies such as NARCL.

Highlights RBI's report on Growth of the ARC Industry

- The ARC industry began with the establishment of the Asset Reconstruction Company India Ltd (ARCIL) in 2003.
- After remaining subdued in the initial years of their inception, a jump was seen in the number of ARCs in 2008, and then in 2016.
- There has been a concentration in the industry in terms of Assets Under Management (AUM) and the Security Receipts (SRs) issued.
- The growth in ARCs' AUM has been largely trendless except for a major spurt in FY14.
- The AUM of ARCs has been on a declining trend when compared with the volume of NPAs of banks and NBFCs, except during the period of high growth in the AUM around 2013-14.
- During 2019-20, asset sales by banks to ARCs declined, which could probably be due to banks opting for other resolution channels such as Insolvency and Bankruptcy Code (IBC) and SARFAESI.

Issues with Indian ARCs

- Indian ARCs have been private sector entities registered with the Reserve Bank. Public sector AMCs in other countries have often enjoyed easy access to government funding or government-backed. The capital constraints have often been highlighted as an area of concern for ARCs in India.
- Despite the regulatory push to broaden, and thereby enhance, the capital base of these companies, they have remained reliant primarily on domestic sources of capital, particularly banks.
- Banks supply NPAs to the ARCs, hold shareholding in these entities and also lend to them, which makes it necessary to monitor if there is a "circuitous movement of funds between banks and these institutions".

The RBI rate hike and its impact

Context:

- In its bi-monthly review, the Reserve Bank of India hiked the repo rate by another 50 basis points. This move, and the RBI's focus on the withdrawal of its accommodative policy, both in response to rising inflation, are expected to lead to a further rise in interest rates in the banking system.

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

- 1. Why has RBI hiked the repo rate?
- 2. How will it impact borrowers and depositors?
- 3. What will be the impact of withdrawing the accommodative policy?
- 4. Will consumer spending be impacted?
- 5. About Monetary Policy Committee (MPC)

Why has RBI hiked the repo rate?

- The 50-basis-point hike, which follows a 40-basis-point hike in May, has been done with a view to **taming inflation**.
- Noting that headline inflation has risen by 170 bps between February and April 2022, the RBI has projected it at 7.5% in Q1 Of FY 22, 7.4% in Q2, 6.2% in Q3, and 5.8% in Q4, with a baseline inflation of 6.7% for 2022-23.
- The RBI aims to bring inflation down to its targeted 4% ($\pm 2\%$).
- The two hikes in repo rates over the last five weeks, **totalling 90 bps, takes the rate to 4.9%**.
- Repo rate refers to the rate at which the RBI lends to commercial banks. When interest rates are raised, it makes money more expensive, thereby resulting in reduction of demand in the economy and bringing down inflation.
- Even as it looks to support the economic recovery from the impact of the pandemic, RBI's concerns around inflation has been the primary factor in raising the rates.

How will it impact borrowers and depositors?

- While both borrowers and depositors are expected to see a hike in lending rates and offering on deposit rates, respectively, over the coming days and weeks, borrowers are likely to be impacted earlier.
- Banks and housing finance companies, which have already raised their lending rates between 40 bps and 50 bps points following the 40 bps hike in repo rate in May, are now expected to raise the rates again.
- If the 90-bps hike in repo rate raises the lending rate by 100 bps, it will have a significant impact on EMIs.
- **For example**, if the rate on your home loan goes up by 100 basis points from 7% in April to 8% in the next couple of weeks, the EMI on principal outstanding of Rs 50 lakh for 15 years will go up from Rs 44,941 to Rs 47,782 — a jump of Rs 2,841 monthly if you keep the tenure unchanged.
- Should the rates rise by 150 bps by the end of the year (which is expected given RBI's enhanced concerns around inflation), the loan rate would go up to 9.5%, and the EMI for the the same loan to Rs 49,236 — an increase of Rs 4,295 per month.

So, more rate hikes are expected?

- Given the RBI's projected inflation of 6.7% for 2022-23 and enhanced concerns around it, market participants feel it may go for an additional hike of 50-100 bps over the remaining part of the year.
- Indeed, RBI Governor has said future decision on rate hikes would be in line with developments around inflation.

What will be the impact of withdrawing the accommodative policy?

- Interestingly, the RBI removed the word **"accommodative" from the policy stance**.
- The RBI's policy panel, chaired by the RBI Governor, has decided to remain focused on withdrawal of accommodation to ensure that inflation remains within the target.
- The RBI had pumped huge liquidity into the system in 2020 to counter the impact of the pandemic.
- While this did support economic recovery, it has also been the main reason for the rise in inflation.
- The RBI's market operations had led to a decline in liquidity in May.
- Still, overall system liquidity remains in large surplus, with the average daily absorption under the liquidity adjustment facility (LAF) moderating to Rs 5.5 lakh crore during May 4-31, from Rs 7.4 lakh crore during April 8-May 3, in consonance with the policy of gradual withdrawal of accommodation.

- The withdrawal will also put upward pressure on interest rates.

Will consumer spending be impacted?

- The policy withdrawal and the rate hike are expected to **impact consumption and demand in the economy.**
- The impact is likely to be more pronounced in non-discretionary spending by consumers.
- According to the RBI policy panel, the forecast of a normal monsoon should boost kharif sowing and agricultural output. This will support rural consumption.
- The rebound in contact-intensive services is expected to sustain urban consumption.
- RBI's surveys suggest further improvement in consumer confidence and households' optimism for the outlook a year ahead.

About Monetary Policy Committee (MPC)

- The Monetary Policy Committee (MPC) is the body of the RBI, headed by the Governor, responsible for taking the important monetary policy decisions about setting the repo rate.
- Repo rate is 'the policy instrument' in monetary policy that helps to realize the set inflation target by the RBI (at present 4%).

Membership of the MPC

- The Monetary Policy Committee (MPC) is formed under the RBI with six members.
- Three of the members are from the RBI while the other three members are appointed by the government.
- Members from the RBI are the Governor who is the chairman of the MPC, a Deputy Governor and one officer of the RBI.
- The government members are appointed by the Centre on the recommendations of a search-cum-selection committee which is to be headed by the Cabinet Secretary.

Objectives of the MPC

- Monetary Policy was implemented with an initiative to provide reasonable price stability, high employment, and a faster economic growth rate.

The major four objectives of the Monetary Policy are mentioned below:

- To stabilize the business cycle.
- To provide reasonable price stability.
- To provide faster economic growth.
- Exchange Rate Stability.

The RBI plan to link credit cards with UPI

Context:

- The Reserve Bank of India has proposed to allow the linking of credit cards with the Unified Payments Interface (UPI).

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

- 1. Details
- 2. What is Unified Payments Interface (UPI)?
- 3. What is the significance of the move?
- 4. What could be the hurdles?

Details:

- The integration will first begin with the indigenous RuPay credit cards.
- Both the RuPay network and UPI are managed by the same organisation – the National Payments Corporation of India (NPCI).

What is Unified Payments Interface (UPI)?

- Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.
- UPI, which was introduced in 2016, has become one of the most used digital payments platforms in the country.
- The volume of UPI transactions has already reached ₹76 lakh crore in the current year, compared to 1 lakh crore in FY21. Advantages of UPI Includes – Immediate money transfer through mobile device round the clock 24*7 and 365 days.
- UPI Enables Single mobile application for accessing different bank accounts with Single Click 2 Factor Authentication – Aligned with the Regulatory guidelines yet provides for a very strong feature of seamless single click payment.
- It also features Virtual address of the customer for Pull & Push providing for incremental security with the customer not required to enter the details such as Card no, Account number; IFSC etc.

What is the significance of the move?

- The linkage of UPI and credit cards could possibly result in credit card usage zooming up in India given UPI's widespread adoption.
- The integration also opens up avenues to build credit on UPI through credit cards in India, where in the last few years, a number of startups like Slice, Uni, One etc. have emerged.
- The move could also be a push to increase adoption by banking on UPI's large user base.
- So far, UPI could only be linked to debit cards and bank accounts.
- This will provide additional convenience to the users and enhance the scope of digital payments.

What could be the hurdles?

- There are some regulatory areas that would have to be addressed before the linkage happens.
- For instance, it is not clear how the Merchant Discount Rate (MDR) will be applied to UPI transactions done through credit cards.
- The **MDR is a fee** that a merchant is charged by their issuing bank for accepting payments from their customers via credit and debit cards.
- According to a norm that has been in effect since January 2020, UPI and RuPay attract zero-MDR, meaning that no charges are applied to these transactions, which is a key reason behind the prolific adoption of UPI both by users and merchants.
- However, the norm has faced pushback from the payments industry, which has argued that it limits the aggregators' ability to "invest in and maintain the financial infrastructure" of the payment ecosystem that they have built.
- Applicability of zero-MDR on UPI could also be a reason why other card networks such as Visa and Mastercard may not have been onboarded to UPI for credit cards yet.

Periodic Labour Force Survey

- **Context:**
- The unemployment rate saw a decrease of 0.6% and fell to 4.2% in 2020-21, compared with 4.8% in 2019-20, according to the Periodic Labour Force Survey (PLFS) for 2020-21 released by the Ministry of Statistics and Programme Implementation

Relevance:

- GS III- Indian Economy (Employment)

Dimensions of the Article:

- 1. Key Employment and Unemployment Indicators
- 2. What is the Periodic Labour Force Survey?
- 3. Types of Unemployment in India
- 4. Causes of Unemployment in India
- 5. Highlights of the Report:

Key Employment and Unemployment Indicators

- **Labour Force Participation Rate (LFPR):** LFPR is defined as the percentage of persons in labour force (i.e. working or seeking or available for work) in the population.
- **Worker Population Ratio (WPR):** WPR is defined as the percentage of employed persons in the population.
- **Unemployment Rate (UR):** UR is defined as the percentage of persons unemployed among the persons in the labour force.
- **Activity Status- Usual Status:** The activity status of a person is determined on the basis of the activities pursued by the person during the specified reference period. When the activity status is determined on the basis of the reference period of last 365 days preceding the date of survey, it is known as the usual activity status of the person.
- **Activity Status- Current Weekly Status (CWS):** The activity status determined on the basis of a reference period of last 7 days preceding the date of survey is known as the current weekly status (CWS) of the person.

What is the Periodic Labour Force Survey?

- Nodal for the Periodic Labour Force Survey (PLFS) is the Ministry of Statistics.
- In April 2017, the National Statistical Office (NSO) introduced the Periodic Labour Force Survey (PLFS).

The primary goal of PLFS is two-fold:

- To estimate key employment and unemployment indicators (such as the Worker Population Ratio, Labour Force Participation Rate, and Unemployment Rate) in the Current Weekly Status (CWS) for urban areas only in a short time interval of three months.
- To estimate employment and unemployment indicators in both usual status (ps+ss) and CWS in both rural and urban areas on an annual basis.

Types of Unemployment in India

- **Disguised Unemployment:** This is a situation in which more people are employed than are required. It is mostly seen in India's agricultural and unorganised sectors.
- **Seasonal unemployment:** Unemployment that happens only during particular seasons of the year. In India, agricultural labourers rarely work throughout the year.
- **Structural Unemployment:** This is a type of unemployment that occurs when there is a mismatch between the jobs available and the abilities of the available workers.
- **Cyclical unemployment:** Unemployment that rises during recessions and falls with economic expansion. It is mostly a phenomenon of capitalist economies.
- **Frictional Unemployment:** It is also known as Search Unemployment, is the time lag between jobs when someone is looking for a new job or moving jobs.
- **Causes of Unemployment in India**
- Jobs in the capitalist world have become highly specialised but India's education system does not provide the right training and specialisation needed for these jobs.

- In India nearly half of the workforce is dependent on Agriculture – even though agriculture is underdeveloped in India and only provides seasonal employment.
- Mobility of labour in India is low due to factors like language, religion, and climate.
- The industrial development had adverse effects on cottage and small industries – as the cottage industries fall, many artisans become unemployed.
- Constant increase in population has been a big problem and one of the main causes of unemployment.
- Certain work is prohibited for specific castes in some areas and this also contributes to unemployment.

Highlights of the Report:

- Rural areas recorded an unemployment rate of 3.3% and urban areas 6.7%.
- The LFPR, the percentage of persons in the labour force (that is, working or seeking work or available for work) in the population, was 41.6% during 2020-21. It was 40.1% in the previous year.
- The WPR was 39.8%, an increase from 38.2% of the previous year.
- **Migrants** are defined in the survey as a household member whose last usual place of residence, at any time in the past, was different from the present place of enumeration.
- The migration rate, according to the survey, is 28.9%.
- The migration rate among women was 48% and 47.8% in rural and urban areas, respectively.
- Overall, the report suggests shifting the government's policy directions as it has become more rural-centric.
- Creation of rural jobs other than in the agricultural sector and MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) could be priorities for the government at the Union and State levels

Sovereign Gold Bond Scheme

- **Focus:** GS II- Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

Why in News?

- The Government of India, in consultation with the Reserve Bank of India, has decided to issue Sovereign Gold Bonds in tranches

About Sovereign Gold Bond Scheme (SGB)

- The Sovereign Gold Bond Scheme was introduced in the Union Budget 2015-16 by the Union Cabinet which was chaired by PM Narendra Modi.
- It was launched to reduce the demand for physical gold and with an aim to invest a part of these physicals gold bars and coins that are purchased every year into financial savings in the form of gold bonds.
- Investors have to pay the issue price in cash and the bonds will be redeemed in cash on maturity.
- The Bond is issued by Reserve Bank on behalf of Government of India.
- Government introduced these bonds to help reduce India's over dependence on gold imports.
- The move was also aimed at changing the habits of Indians from saving in physical form of gold to a paper form with Sovereign backing.
- The bonds will be restricted for sale to resident Indian entities, including individuals, Hindu Undivided Family (HUFs), trusts, universities and charitable institutions.
- The bonds will be denominated in multiples of gram(s) of gold with a basic unit of 1 gram.
- The tenor will be for a period of 8 years with exit option from the 5th year to be exercised on the interest payment dates.
- The minimum permissible investment limit will be 1 gram of gold, while the maximum limit will be 4 kg for individual, 4 kg for HUF and 20 kg for trusts and similar entities per fiscal (April-March) notified by the government from time to time.
- In case of joint holding, the investment limit of 4 kg will be applied to the first applicant only.
- Bonds can be used as collateral for loans.

- The loan-to-value (LTV) ratio is to be set equal to ordinary gold loan mandated by the Reserve Bank from time to time.

Benefits of Sovereign Gold Bond

- As a low-risk investment, it is perfect for investors with low-risk appetite.
- Compared to physical gold, the cost to purchase or sell SGBs is quite low.
- The expense of buying or selling the SGB is also nominal in comparison to the physical gold.
- The gold bonds can be availed either in paper or in demat form as per the convenience of an individual.
- The gold bonds invested by the Investors can be gifted or transferred to others who are eligible under the scheme.
- They can also trade these bonds on stock exchanges subject to notifications of the Reserve Bank of India.
- These Gold bonds can be purchased through multiple payment modes such as cheques, cash, DDs or electronic transfer.

World Competitiveness Index 2022

Context:

- Recently, the annual World Competitiveness Index was released by the Institute for Management Development (IMD).
- IMD is a Swiss foundation, based in Switzerland, dedicated to the development of international business executives at each stage of their careers

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

1. World Competitiveness Yearbook (WCY)
2. Highlights of the Index
3. India's Performance

World Competitiveness Index:

- The World Competitiveness Index is a comprehensive annual report and worldwide reference point on the competitiveness of countries.
- WCY was first published in 1989 and is compiled by the Institute for Management Development (IMD).
- It provides extensive coverage of 64 economies.
- It measures the prosperity and competitiveness of countries by examining four factors (334 competitiveness criteria):
 - Economic performance
 - Government efficiency
 - Business efficiency
 - Infrastructure

Highlights of the Index

- **Europe: Denmark** has moved to the top of the 63-nation list from the third position last year, while Switzerland slipped from the top ranking to the second position and Singapore regained the third spot from fifth.
- **Asia:** The top-performing Asian economies are Singapore (3th), Hong Kong (5th), Taiwan (7th), China (17th) and Australia (19th).
- **Others:** Due to the poor reliability of the data obtained, neither Russia nor Ukraine were appraised in this year's edition.

India's Performance:

- India has witnessed the sharpest rise among the Asian economies, with a sixposition jump from 43rd to 37th rank on the, largely due to gains in economic performance.

Performance on four Parameters:

- **Economic performance:** It has improved from 37th in 2021 to 28th in 2022.
- **Government efficiency:** It has improved from 46th in 2021 to 45th in 2022.
- **Business efficiency:** It saw a huge improvement from 32nd rank in 2021 to 23rd in 2022.
- **Infrastructure:** It on the other hand, saw no change at 49.

WTO Ministerial Conference**Context:**

- Recently, member countries of the World Trade Organization (WTO) wrapped up the Ministerial Conference's twelfth outing (MC12) securing agreements on relaxing patent regulations to achieve global vaccine equity; ensuring food security, according subsidies to the fisheries sector and continuing moratoriums relevant to e-commerce, among others.

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

- 1. World Trade Organization (WTO)
- 2. Functions of WTO
- 3. What is the WTO's Ministerial Conference?
- 4. Key takeaways from the 12th Ministerial Conference of the WTO

Functions of WTO

- **Trade negotiations:** The WTO agreements cover goods, services and intellectual property. They spell out the principles of liberalization, and the permitted exceptions. They set procedures for settling disputes.
- **Implementation and monitoring:** WTO agreements require governments to make their trade policies transparent by notifying the WTO about laws in force and measures adopted. Various WTO councils and committees seek to ensure that these requirements are being followed and that WTO agreements are being properly implemented.
- **Dispute settlement:** The WTO's procedure for resolving trade quarrels under the Dispute Settlement Understanding is vital for enforcing the rules and therefore for ensuring that trade flows smoothly.
- **Building trade capacity:** WTO agreements contain special provision for developing countries, including longer time periods to implement agreements and commitments, measures to increase their trading opportunities, and support to help them build their trade capacity, to handle disputes and to implement technical standards.
- **Outreach:** The WTO maintains regular dialogue with non-governmental organizations, parliamentarians, other international organizations, the media and the general public on various aspects of the WTO and the ongoing Doha negotiations, with the aim of enhancing cooperation and increasing awareness of WTO activities.

What is the WTO's Ministerial Conference?

- The MC is at the very top of WTO's organisational chart.
- It meets once every two years and can take decisions on all matters under any multilateral trade agreement.

- Unlike other organisations, such as the International Monetary Fund or World Bank, WTO does not delegate power to a board of directors or an organisational chief.
- All decisions at the WTO are made collectively and through consensus among member countries at varied councils and committees.
- This year's conference took place in Geneva, Switzerland.

Key takeaways from the 12th Ministerial Conference of the WTO:

- **Curtailling harmful fishing subsidies**
- The WTO passed a multilateral agreement that would curb 'harmful' subsidies on illegal, unreported and unregulated fishing for the next four years, to better protect global fish stocks.
- Since 2001, member states have been negotiating the banning of subsidies that promote overfishing.
- The current agreement, which establishes new trading rules, is the second multilateral agreement in WTO's history.
- India and other developing countries were able to win some concessions in this agreement.
- They successfully lobbied to remove a section of the proposal that would threaten some subsidies which would assist small-scale artisanal fishing. Critics argued that this agreement would only restrict and not eradicate subsidies on illegal fishing.

Global Food Security

- Members agreed to a binding decision to exempt food purchased by the UN's World Food Programme (WFP) for humanitarian purposes, from any export restrictions.
- In light of the global food shortages and rising prices caused by the war between Ukraine and Russia, the group's members issued a declaration on the importance of trade in global food security and that they would avoid bans on food exports.
- However, countries would be allowed to restrict food supplies to ensure domestic food security needs.
- India's key demand to allow it to export food from its public stockholdings to other countries will reportedly be discussed in the next Ministerial Conference in 2023.

E-commerce transactions

- During the MC12 session, India has asked the WTO to review the extension of the moratorium on custom duties on e-commerce transactions, which include digitally-traded goods and services
- From 2017-2020, developing countries lost a potential tariff revenue of around \$50 billion on imports from only 49 digital products.
- WTO members had first agreed to not impose custom duties on electronic transmissions in 1998, when the internet was still relatively new. The moratorium has been periodically extended since then.

Covid-19 vaccine production

- WTO members agreed to temporarily waive intellectual property patents on Covid-19 vaccines without the consent of the patent holder for 5 years, so that they can more easily manufacture them domestically.
- The current agreement is a watered down version of the original proposal made by India and South Africa in 2020.
- They had wanted broader intellectual property waivers on vaccines, treatments and tests.
- Rich pharmaceutical companies had strongly opposed this, arguing that IP's do not restrict access to Covid vaccines and that the removal of patent protections gives researchers that quickly produced life saving vaccines.
- The waiver agreed by the WTO was criticized by advocacy groups for being narrow in scope, as it did not cover all medical tools like diagnostics and treatments.
- The agreements passed by the WTO come after an intense week of negotiations.

Black swan event

Context:

- A study by the Reserve Bank of India (RBI) has spoken about the possibility of capital outflows to the tune of \$100 billion (around Rs 7,80,000 crore) from India in case of a major global risk scenario or a “black swan” event.

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

- 1. What is a ‘black swan’ event?
- 2. When did the term originate?
- 3. When have such events occurred in the past?

What is a ‘black swan’ event?

- A black swan is a rare, unpredictable event that comes as a surprise and has a significant impact on society or the world.
- These events are said to have three distinguishing characteristics –
 - o They are extremely rare and outside the realm of regular expectations;
 - o They have a severe impact after they hit;
 - o They seem probable in hindsight when plausible explanations appear.

When did the term originate?

- The black swan theory was put forward by author and investor Nassim Nicholas Taleb in 2001, and later popularised in his 2007 book – **The Black Swan: The Impact of the Highly Improbable**.
- The Sunday Times described his work as one of the 12 most influential books since World War II.
- The term itself is linked to the discovery of black swans.
- Europeans believed all swans to be white until 1697, when a Dutch explorer spotted the first black swan in Australia.
- The metaphor ‘black swan event’ is derived from this unprecedented spotting from the 17th century, and how it upended the West’s understanding of swans.

When have such events occurred in the past?

- **2008 global financial crisis** – a black swan event triggered by a sudden crash in the booming housing market in the US.
- **The fall of the Soviet Union, the terrorist attack in the US** on September 11, 2001, also fall in the same category.

Open network for digital commerce**Context:**

- The government of India announced the launch of the pilot phase of open network for digital commerce (ONDC) in five cities in late April with an aim to “democratise” the country’s fast growing digital e-commerce space that is currently dominated by the two U.S.-headquartered firms — Amazon and Walmart.

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

- 1. What is ONDC?

- 2. What led to formation of ONDC?
- 3. What is the current status?
- 4. What are the likely benefits of ONDC?

What is ONDC?

- It is a not-for-profit organisation that will offer a network to enable local digital commerce stores across industries to be discovered and engaged by any network-enabled applications.
- It is neither an aggregator application nor a hosting platform, and all existing digital commerce applications and platforms can voluntarily choose to adopt and be a part of the ONDC network.
- The ONDC model is trying to replicate the success of the Unified Payments Interface (UPI) in the field of digital payments.
- UPI allows people to send or receive money irrespective of the payment platforms they are registered on.
- The open network concept also extends beyond the retail sector, to any digital commerce domains including wholesale, mobility, food delivery, logistics, travel, urban services, etc.

The main aims of ONDC are to:

- Promote open-source methodology, using open specifications and
- Promote open network protocols independent of any specific platform
- Digitise value chains,
- Promote inclusion of suppliers,
- Standardize operations,
- Derive efficiencies in logistics
- Enhance value for consumers.

Example:

- Currently, a buyer needs to go to Amazon, for example, to buy a product from a seller on Amazon.
- Under ONDC, it is envisaged that a buyer registered on one participating ecommerce site (for example, Amazon) may purchase goods from a seller on another participating e-commerce site (for example, Flipkart).

What led to formation of ONDC?

- The Department for Promotion of Industry and Internal Trade (DPIIT), under Ministry of Commerce and Industries, conducted an outreach during the outbreak of the COVID-19 pandemic to understand its impact on small sellers and hyperlocal supply chain functioning.
- Post which, it found that there is a huge disconnect between the scale of online demand and the ability of the local retail ecosystem to participate.
- Following this, consultations were held with multiple ministries and industry experts and “ONDC was envisioned to revolutionise digital commerce in India,” as per the strategy paper.

What is the current status?

- Presently, ONDC is in its pilot stage in five cities — Delhi NCR, Bengaluru, Bhopal, Shillong and Coimbatore — with a target of onboarding around 150 retailers.
- The government has also constituted an advisory council to analyse the potential of ONDC as a concept and to advise the government on measures needed to accelerate its adoption.
- Over the next five years, the ONDC expects to bring on board 90 crore users and 12 lakh sellers on the network, enabling 730 crore additional purchases and an additional gross merchandising value (GMV) of 3.75 crore.
- The GMV for the digital commerce retail market in India was ₹2.85 lakh crore (\$38 billion) in 2020, which is only 4.3% of the total retail GMV in India.

What are the likely benefits of ONDC?

- The ONDC will standardise operations like cataloguing, inventory management, order management and order fulfilment, hence making it simpler and easier for small businesses to be discoverable over network and conduct business.
- However, experts have pointed out some likely potential issues such as getting enough number of e-commerce platforms to sign up, along with issues related to customer service and payment integration.

GST compensation cess*Context:*

- The Centre has extended the time for levy of GST compensation cess by almost four years till March 31, 2026.

Relevance:

- GS-III: Indian Economy (Taxation, Government Policies and Initiatives)

Dimensions of the Article:

- 1. What is GST?
- 2. What is GST Compensation Cess?
- 3. Issue with GST Compensation Cess

What is GST?

- GST is a destination-based indirect tax and is levied at the final consumption point.
- Under it, the final consumer of the goods and services bear the tax charged in the supply chain.
- GST is a transparent and fair system that prevents black money and corruption and promotes new governance culture.

GST Act

- Goods and Services Tax (GST) Act came into effect in 2017.
- Goods and Services Tax (GST) was introduced by the Government of India to boost the economic growth of India. GST is considered to be the biggest taxation reform in the history of the Indian economy.
- The power to make any changes in the GST law is in the hands of the GST Council. GST Council is headed by the Finance Minister.
- One hundred and first amendment act, 2016 introduced the GST in India in July 2017.

What is GST Compensation Cess?

- Due to the consumption-based nature of GST, manufacturing states like Gujarat, Haryana, Karnataka, Maharashtra and Tamil Nadu feared a revenue loss.
- Thus, GST Compensation Cess or GST Cess was introduced by the government to compensate for the possible revenue losses suffered by such manufacturing states.
- However, under existing rules, this compensation cess will be levied only for the first 5 years of the GST regime – from July 1st, 2017 to July 1st, 2022.

GST (Compensation to States) Act, 2017 was enacted under which:

- The percentage of annual revenue growth of a State has been projected to be 14%. If the annual revenue growth of a State is less than 14%, the State is entitled to receive compensation under the statute.
- The compensation payable to a State shall be provisionally calculated and released at the end of every two months period.

- The generation of revenue under the Act would happen through a GST Compensation Cess:
- The cess comprises the cess levied on sin and luxury goods for five years.
- The entire cess collected during the year is required to be credited to a non-lapsable Fund (the GST Compensation Cess Fund).
- The collected compensation cess flows into the CFI and is then transferred to the Public Account of India, where the GST compensation cess fund has been created.

Issue with GST Compensation Cess

- The issue arose when payments due for August-September 2019 were delayed. Since then, all subsequent payouts have seen cascading delays. The problem has aggravated and further compounded due to following reasons:
- **Persistent Economic Slowdown:** The slowdown has impacted the demand and consumption levels and has thus dented the overall GST collections (both Centre and States).
- **Effect of the Pandemic:** The pandemic has given an economic shock to the Indian Economy which has dented the tax collection expectations (including the collections from GST Compensation Cess) of both Centre and States.
- **Estimation of 14% revenue growth unrealistic:** The high rate of 14%, which has compounded since 2015- 16, has been seen as delinked from economic realities. In the initial meetings of the GST Council, a revenue growth rate of 10.6% (the average all-India growth rate in the three years preceding 2015- 16) was proposed but 14% revenue growth was accepted "in the spirit of compromise".
- As a result of these issues, the stalemate reached at a point where States were looking at the GST shortfall of Rs. 30,000 crore and the Centre being in no position to provide for it.

Gig Economy

Context:

- NITI Aayog report has identified that is expected to grow to 2.35 crore by 2029-30.
- According to a study released by NITI Aayog, the number of gig workers in India is estimated to be 77 lakh in 2020-21.

Relevance:

- GS III- Indian Economy

Dimensions of the Article:

- 1. What is Gig Economy?
- 2. Advantages of Gig economy.
- 3. Challenges related to Gig economy
- 4. Measures to address the issues related to Gig economy
- 5. Way Forward

What is Gig Economy?

- Gig economy involves a temporary contractual job or short-term contract or freelance work that a person may take, on a project-to-project basis, for which the payment is made once the task is completed.
- The gig economy gets its name from each piece of work being akin to an individual 'gig'. A gig economy encompasses all platforms that hire independent contractors, consultants and workers in different sectors, such as
 - o information technology,
 - o content creation,
 - o social media marketing and communications,
 - o food and beverages,

- o creative fields such as art and design.
- A gig economy, hence, means an existence of temporary or part-time workforce instead of a conventional workforce.

Advantages of gig economy:

- **Cater to immediate demand:** Gig economy can benefit workers, businesses, and consumers by making work more adaptable to the needs of the moment and demand for flexible lifestyles.
- **Cheaper and more efficient:** Most times, employers cannot afford to hire fulltime employees. In a gig economy, large numbers of people work part-time or in temporary positions. The result is cheaper, more efficient services, such as Uber or Airbnb, for those willing to use them.
- **Wider choice to employers:** Technology and connectivity through the internet don't require the freelancer to come into the office for work. Hence, employers have a wider range of applicants to choose from as they don't have to hire someone based on their proximity.
- **Offers specific expertise:** Professional services firms are hiring gig workers to add deep domain expertise to client-impact teams. Majority of professional services contact workers have years of domain-specific knowledge, like consultants.
- **The wider choice to employees:** People often find they need to move around or take multiple positions to afford the lifestyle they want. These days, people also tend to change careers many times throughout their lives; the gig economy is a reflection of this rising trend.
- **Youth economic productivity:** India has a high share of young population which is only expected to grow. According to economists at IMF, youth inactivity in India is at 30%, the highest amongst developing countries.
- Gig economy offers the perfect platform for engagement of youth in productive employment activities.
- o It is also estimated that the gig economy offers a relatively high gender-parity in the workforce, as compared to traditional employment.

Challenges related to Gig Economy:

- **Erosion of traditional economic relationships:** Gig economy can have downsides due to the erosion of traditional economic relationships between workers, businesses, and clients. This can eliminate the benefits that flow from building long-term trust, customary practice, and familiarity with clients and employers.
- It could also discourage investment in relationship-specific assets that would otherwise be profitable to pursue since no party has an incentive to invest significantly in a relationship that only lasts until the next gig comes along.

Crowding out traditional workers:

Workers who prefer a traditional career

- path, stability and security that come with it are being crowded out in some industries.
- The gig economy makes it harder for full-time employees to develop fully in their careers since temporary employees are often cheaper to hire and offer more flexibility in their availability.
- **Disrupted work-life balance for gig workers:** Flexibility in a gig economy often means that workers have to make themselves available at any time the gig comes up, regardless of their other needs, and they must always be on the hunt for the next gig.
- o Hence, for some workers, the flexibility of working gigs can disrupt the work-life balance, sleep patterns, and activities of daily life.
- **No employment-related rights:** Unlike traditional employment, workers in the gig economy are usually ineligible for any social benefits such as insurance, medical benefits, employees' provident fund, bonus or gratuity.

Measures to address the issues related to gig workers:

- **Evaluating scale of Gig economy:** As of now there exists no authoritative estimate on the total number of gig workers in India, though the centralised nature of the platforms, and the larger platform labour market should make the collating of this data relatively straightforward for the Labour Ministry.
- **Making regulations related to Gig economy:** A more viable strategy then would involve conditional government partnerships with platforms under some of its flagship schemes. Here, the successful pilot of Swiggy's Street Food Vendors programme under the **PM SVANidhi, or PM Street Vendor's Atma**
- **Nirbhar Nidhi scheme**, may prove to be an illustrative example.

Govt. hikes GST for household items

Context:

- The Goods and Services Tax (GST) Council has decided to hike and lower GST on certain commodities.

Relevance:

- GS III- Indian Economy

Dimensions of Article:

- 1. Details
- 2. What is GST?
- 3. What are GST Slabs?

Details

- From July 18, tax hikes will kick in for over two dozen goods and services, ranging from unbranded food items, curd and buttermilk to low-cost hotels, cheques and maps
- Tax rates will be lowered for about half-a-dozen goods and services, including ropeways and truck rentals where fuel costs are included,
- It scrapped GST for items imported by private vendors for use by defence forces.

What is GST?

- GST is a destination-based indirect tax and is levied at the final consumption point.
- Under it, the final consumer of the goods and services bear the tax charged in the supply chain.
- GST is a transparent and fair system that prevents black money and corruption and promotes new governance culture.

GST Act

- Goods and Services Tax (GST) Act came into effect in 2017.
- Goods and Services Tax (GST) was introduced by the Government of India to boost the economic growth of India. GST is considered to be the biggest taxation reform in the history of the Indian economy.
- The power to make any changes in the GST law is in the hands of the GST Council. GST Council is headed by the Finance Minister. One hundred and first amendment act, 2016 introduced the GST in India in July 2017.

What are GST Slabs?

- Over 1300 items and over 500 services are included in India's 4 main GST slabs.
- There are five general tax rates: 0%, 5%, 12%, 18%, and 28 %; in addition, a cess is imposed on select "sin" commodities in addition to the 28 % tax.
- The GST Council reviews the products included in each slab rate on a regular basis to make adjustments for changes in market conditions and business needs.
- The revised structure makes sure that necessities are subject to lower tax categories and that luxury goods and services are subject to higher GST rates.

- Demerit goods, including alcoholic beverages, cars, and tobacco products, are taxed at a rate of 28 percent plus an additional GST compensation

Bring The Shine Back on Government Jobs

Context

- Several unemployed people in India resort to protests-thousands burnt railway coaches in January 2022 over alleged flaws in the railways recruitment process and more recently, India saw protests over the Agnipath scheme. In 2019, an Indian citizen died of suicide every hour due to joblessness, poverty or bankruptcy (NCRB data).

Relevance

- GS III: Growth, Development and Employment, Inclusive Growth and issues arising from it.

Dimensions of the Articles

- 1. A culture of hire and fire
- 2. Job Opportunities
- 3. Way Forward

A culture of hire and fire

- For those employed in government, the situation is not much better. In May 2022, Haryana terminated the services of over 2,000 contractual health workers who had been hired during the pandemic. Similar trend is observed in other states as well.
- The problem is twofold. First, vacancies in the government are not being filled at a sufficient pace. There were over 60 lakh vacancies in the government across all levels in July 2021. The government has sought to push for recruitment of 10 lakh people in a mission mode over 1.5 years. However, this would fall short of the size of the problem. We need greater ambition on this front.
- Second, where vacancies are being filled, they are notably skewed towards contractual jobs which constitute 59% in 2018.
- In 2013, the Supreme Court ruled that a contractual employee for a government department was not a government servant. If most government employees have contractual terms, will a public ethos continue to exist?
- Instead of expanding contractual employment, we should seek to bolster public services. For the past few decades, we have been underinvesting in public goods — as witnessed in healthcare sector amidst the COVID-19 crisis.
- Expanding public service provisioning will lead to the creation of good quality jobs, along with skilled labour, offering us social stability.
- A push for universal basic services programme with public healthcare would also help supplement insurance based models like Ayushman Bharat. Such spending will inturn have strong multiplier effects, while generally improving the productivity and quality of life in India's cities and villages.

Job Opportunities

- There is significant potential for job creation in diverse arenas.
- Consider renewable power generation. In rooftop solar power generation, manufacturing of solar panel modules and enduse servicing is labour intensive.
- Meanwhile, on the waste management front, there is significant scope for expanding wastewater treatment capacity, with the building and management of treatment plants leading to generation of jobs.
- A push for adopting electric vehicles and encouraging green mobility would require significant manpower, leading to the generation of 'green jobs'. In addition, we must continue to encourage urban farming, with significant job potential in permaculture, gardening and nursery management.

- Our public services require more doctors, teachers, engineers, and fewer data entry clerks.

Way forward

- Reforms advocated by the Administrative Reforms Commission should be our initial step.
- This is the time to build capacity for an efficient civil service that can meet today's challenges – providing a corruption free welfare system, running a modern economy and providing increasingly better public goods. Improved public service delivery, through better compensation, should be our ethos. 'Jai Jawan, Jai Kisan' used to be a driving motto for the government of the day. Instead, treating them as dispensable seems to be the norm.

Towards a Single Low Tax Regime

Context

- The introduction of a uniform GST was a watershed moment in India since the country's earlier regime of taxes and cesses. However, GST is still a complicated tax regime with different slabs.

Relevance

- GS II: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment, Fiscal Policy

Dimensions of the Article

- Why Unified Single Tax?
- GST Major Shortcoming: Multiple Rates
- Way Forward
- Conclusion

Why Unified Single Tax?

- Empirical data from across the world on the benefits of a unified single tax is inconclusive. This needs bold and clear reformist thinking at the political level.
- Imposing a high GST in some areas does not make sense.
- 'Sin' taxes are at cross purposes with the government's policy of generating growth and creating jobs under 'Make in India'.
- Create an economic ripple effect downstream, in a complex web of businesses that have symbiotic relationships.
- The effect finally reaches down to the bottom of the employment pyramid.
- Distrust between State and centre: There is distrust between the States and the Centre on revenue sharing.
- There is also anger at the Centre for riding roughshod over the States' autonomy and disregarding the federal structure.

Advantages of Single rate tax structure

- To have a simple tax system,
- To prevent misclassifications and litigations arising therefrom,
- To avoid an inverted duty structure of taxes on inputs exceeding those on outputs requiring detailed scrutiny and refunds.
- ***GST Major Shortcoming: Multiple Rates***
- One of the most important shortcomings in the structure of GST is multiple rates. Why multiple rates regime is proposed?
- The main reason for rate differentiation is equity.
- But it is argued that this is an inefficient way of targeting benefits for the poor.

- Although the exempted and low-rated items are consumed relatively more by the poor, in absolute terms, the consumption may be more by the rich.

Evolution of GST multiple rates in India can be understood as:

- The committee headed by the Chief Economic Adviser estimated the tax rate at 15- 15.5 per cent.
- It further recommended that in keeping with growing international practice, India should strive towards a single rate in the medium-term to facilitate administrative simplicity and compliance, but in the immediate context, it should have a three-tier structure (excluding zero).
- The structure finally adopted was to have four rates of 5, 12, 18, and 28 per cent besides zero, though almost 75 per cent of the revenues accrue from the 12 and 18 per cent slabs.

Way forward

- Move people up the value chain: The plan must be to figure out how to rev up the economy by making the rich and upper middle class spend and move more people up the value chain instead of designing a tax system that keeps these products out of the new consumer class's reach.
- The same lack of logic applies to taxes on wine, rum and beer, which generate large-scale employment and are the backbone of grape and sugarcane farming and the cocoa industry.
- In the automobile sector, the GST on electric cars, tractors, cycles, bikes, low-end and luxury cars ranges anywhere from 5% to 50%. The sale of automobiles is the barometer of an economy.
- Single tax slab: A directive to the bureaucracy is necessary to come up with just two categories: goods eligible for zero tax and goods that will fall under a single rate, say 10% or 12%.
- Then there are items that are exempt from GST.
- Bring fuels under GST: Petrol, diesel, aviation turbine fuel are not under the purview of GST, but come under Central excise and State taxes.
- A single low tax regime will ensure compliance, widen the tax net, improve ease of doing business, boost the economy, create jobs, increase tax collections and reduce corruption

Conclusion

- The Finance Minister should take a cue from the Prime Minister, who hinted at major reforms in the aftermath of COVID-19, and do away with all the confusing tax slabs in one fell swoop.

The Role of Caste in Economic Transformation

Context

- India has been in a phase of jobless growth for at least two decades now, coupled with rising poverty and discontent in rural areas. Bigger challenge ahead of us is "How to generate a pattern of growth that produces jobs and inclusive development in the way most of the East Asian countries have done?"
- Panacea may lie in inclusion of all the castes in the economic growth.

Relevance

- GS I: Capitalism, Diversity of India, Poverty and Developmental Issues
- GS II: Welfare Schemes, Issues Relating to Development, Human Resource, India and its Neighbourhood.
- GS III: Planning, Employment, Inclusive Growth, Land Reforms.

Dimensions of the Article

- How Caste System Impedes Economic Growth & Development?
- Why India Lagged in Economic Transformation?
- What are Initiatives Taken to Eliminate Discrimination and Promote Transformation?
- Way Forward

How Caste System Impedes Economic Growth and Development?

- There could be 4 probable answers to this.

- 1. Land Ownership & Productivity:
- India has one of the highest land inequalities in the world today. This unequal distribution of land was perpetuated by British Colonial intervention, which legalised a traditional disparity.

During British Rule:

- The land revenue settlement systems entirely changed the natural fabric of village society. They institutionalised caste system within the land revenue bureaucracy by creating artificial distinction between cultivators who belong to certain castes and labourers (lower caste subjects) who cultivated granted/ gifted lands.
- The British inscribed caste in land governance categories and procedures that still underpin postcolonial land ownership pattern in India.
- Land reform that took place after India's independence largely excluded Dalits and lower castes.
- It emboldened and empowered mainly intermediate castes at the expense of others in rural India.

Green Revolution:

- The regional castes that benefitted from the Green Revolution tightened their social control over others in rural India.
- 2. Differential and non-inclusive education since British times emboldened "elite" classes, creating a social drift. Inequality in access to education got translated into inequality in other economic domains including wage differentials in India.
- 3. Barrier to entrepreneurship: Castes that were already in control of trading and industrial spaces resisted the entry of others.

Why India Lagged in Economic Transformation?

- The divergent outcomes in structural transformation between countries in the global South, particularly India, China and SouthEast Asia, is due to their focus on "Land Equity", "Access to Education" and "Access to Entrepreneurship".
- 1. Focus on Education:
- Chinese and other East Asian countries invested in basic education and gradually shifted towards higher education unlike India's upsidal theme.
- 2. Focus on Low End Jobs:
- South East Asia and China captured low end manufacturing jobs, India largely concentrated in high end technology jobs.
- 3. Focus on Human Capital:
- In China, rural entrepreneurship was able to grow out of the traditional agricultural sector on a massive scale due to its investment in human capital. Their success in manufacturing is a direct outcome of the investment in human capital.
- 4. British Colonial Intervention:
- The biggest challenge India as a nation faced was intervention by Britishers which amplified caste based and racial differences. Thus we couldn't cope up with the pace of economic transformation like our neighbours.

What are Initiatives Taken to Eliminate Discrimination and Promote Transformation?

- 1. Constitutional Provisions:
- Prohibition of Discrimination under Article 15
- Equality of Opportunity ensured under Article 16
- Compulsory Education guaranteed under Article 21A.
- 2. Land Reforms:
- Land Ceiling Act that prescribed upper limit on land ownership emboldens equality.
- 3. Human Development:

- Various schemes have been undertaken to ensure economic & social inclusiveness. For instance:
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY):
- SANKALP Scheme
- Stand Up India Scheme
- Pradhan Mantri Mudra Yojana:

Way forward

- 1. Learning from Neighbours:
- As success witnessed in China and other S.E Asian Countries, India should put more focus on areas of Human Development, Low End Jobs, Rural Development to support economic transformation.
- 2. Rationalisation of Reservation Policy:
- It should be made sure that every community/caste under a reservation category should be provided with equal representation in the employment/educational opportunities.
- Saturation of a particular community/caste in reservation violates the whole vision of equality and meritocracy.
- 3. Audit of Initiatives:
- Social audits could be regularly conducted to evaluate the service delivery of developmental initiatives.
- 4. Going Rural:
- Ground level survey of the Socio Economic needs of the backward classes at rural level would provide the real picture of their situation enabling the government enhance targeted & leakage proof services.

Monetary Tightening And Its Impact on Growth

Context

- A rate hike in the monetary policy committee's June meeting was a foregone conclusion after the spike in inflation and an off-cycle surprise interest rate hike on May 4.

Relevance

- GS-III: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth,
- Development and Employment

Dimensions of the Article

- Reasons fast forwarding of Interest Rate Hike
- How US Fed's actions affect India?
- Inflation and its Impact
- Growth Prospects
- Monetary Policy Actions
- Way Forward

Reasons fast forwarding of Interest Rate Hike

- Broad based inflation: A confluence of factors has pushed inflation higher and made it persistent and broad-based.
- Policy rates are still negative: Even with this hike, the repo rate, the signaling tool for bank interest rates, is still below pre-pandemic levels.
- The real policy rate (repo rate less expected inflation) remains negative and has some distance to cover before it reaches positive territory — where the RBI would like to see it.
- Lag in effect: Monetary policy impacts growth, and thereafter, inflation with a lag.
- To control inflation, the RBI needed to act faster by front loading rate hikes.
- Elevated inflation expectations: The risk of inflation expectations getting unmoored had risen.

- Household and business inflation expectations remain elevated, as indicated by the RBI's inflation expectations survey of households.
- Interest rate hike in the US: The aggressive stance of the US Federal Reserve and ensuing tightening financial conditions.
- India is better placed today than in 2013 to face the Fed's actions with a stronger forex shield.

How US Fed's actions affect India?

- India is not insulated.
- Capital outflow: The headwinds now are stronger than in 2013 and we have seen net capital outflows since October 2021.
- S&P Global expects the US federal funds rate to be hiked to 3-3.25 per cent in 2023, higher than the pre-pandemic level, and highest since early 2008.
- Despite a strong forex hoard, the RBI has had to deploy monetary policy to mute the impact of the Fed's actions.

Inflation and its Impact

- Upward pressure on food inflation: The pressure on food inflation has increased owing to the impact of the freak heatwave on wheat, tomatoes and mangoes, which is driving prices higher.
- This is on top of rising input costs for agricultural production, the global surge in food prices and the expected sharper than usual rise in minimum support price.
- Fuel inflation will remain high, duty cuts notwithstanding, as global crude prices remain volatile at elevated levels.
- Core inflation, the barometer of demand, is a complex story.
- Goods (despite only partial pass-through of input costs) are witnessing higher inflation than services.
- That's because services faced tighter restrictions during the Covid-19 waves, restricting their consumption and the pricing power of providers as well.
- Service categories that are mostly regulated, such as public transport, railways, water and education, have over 50 per cent weight in core services.
- However, prices of discretionary services such as airlines, cinema, lodging and other entertainment are rising.
- Transportation-related services have seen the sharpest rise in the past six months due to fuel price increases.
- Impact on the poor: For those at the bottom of the pyramid, high inflation hits harder because energy and food are a big chunk of their consumption basket.

Growth Prospects

- S&P Global has recently cut the growth outlook for major economies for 2022 — that of the US to 2.4 per cent from 3.2 per cent, for Eurozone to 2.7 per cent from 3.3 per cent earlier, and for China to 4.2 per cent from 4.9 per cent.
- This will hurt exports which are very sensitive to global demand.

Monetary Policy Actions

- Not all aspects of supply-driven inflation can be addressed via monetary policy.
- So the authorities are complementing monetary policy actions by using the limited fiscal space to cut duties and extend subsidies to the vulnerable.

Way Forward

- Monetary tightening impacts growth with a lag of at least 3-4 quarters and the fact that real interest rates are negative and borrowing rates still below pre-pandemic levels, implies monetary policy is unlikely to be growth-restrictive for this year.

AGRICULTURE

PURPLE REVOLUTION

- **Focus:** Prelims, GS-III: Agriculture (Technological advancements related to Agriculture)
- **Why in News?**
- Farmers in hilly areas of Jammu and Kashmir are switching from traditional farming to aroma crops like lavender in a big way.
- Also, "Purple Revolution" has shifted focus to Agri-tech StartUps

About Purple Revolution:

- The Purple or Lavender Revolution was launched in 2016 by the Union Ministry of Science & Technology through the Council of Scientific & Industrial Research's (CSIR) Aroma Mission.
- Under the mission, first-time farmers were given free lavender saplings, while those who had cultivated lavender before were charged Rs. 5-6 per sapling.
- High Monetary returns have led to the switching from traditional farming to aroma crops like lavender by farmers in hilly areas of Jammu and Kashmir.
- Aroma crops are both drought and pest resistant.
- CSIR is providing all kind of technical support for promoting this Agri Start-up boon in the UT.
- CSIR is also planning to introduce the aroma crops in other hilly States with similar climatic conditions like Uttarakhand, Himachal Pradesh and in North- Eastern States.

About Aroma Mission:

- The CSIR Aroma Mission is envisaged to bring transformative change in the aroma sector through desired interventions in the areas of agriculture, processing and product development for fuelling the growth of aroma industry and rural employment.
- The nodal laboratory is CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow. The participating laboratories are CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur; CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu etc.
- It is changing the mind-set of farmers and more and more of them are taking up the cultivation of aroma crops like lavender, lemon grass, rose and marigold for extracting costly oils to be used in many industries.
- It is expected to enable Indian farmers and aroma industry to become global leaders in the production and export of some other essential oils on the pattern of menthol mint.
- Lavender cultivation has employed about 5,000 farmers and young entrepreneurs in geographically remote areas of J&K. More than 1,000 farming families are cultivating it on more than 200 acres.

Uses and Products of Lavender

- Main product is Lavender oil which sells for at least Rs. 10,000 per litre.
- Lavender water, which separates from lavender oil, is used to make incense sticks.
- Hydrosol, which is formed after distillation from the flowers, is used to make soaps and room fresheners.

INDUSTRY AND INFRASTRUCTURE

Bharat Gaurav Scheme

Context:

- The 'Bharat Gaurav' train service from Coimbatore to Shirdi, a first of its kind in the country, was inaugurated at the Coimbatore North Railway Station.

Relevance:

- GS III- Infrastructure

Dimensions of the Article:

- 1. About Bharat Gaurav Scheme
- 2. Benefits of the Scheme

About Bharat Gaurav Scheme

- It was launched in November 2021,
- The main objective behind launching Bharat Gaurav trains is to boost tourism.
- This is the third segment of trains after passenger and freight segments.
- These are not ordinary trains that will run according to a schedule, but will be more along the lines of the IRCTC's Ramayana Express.
- It was announced as part of the tourism circuit trains with a theme. These trains will be run in theme-based circuits by both private players and the IRCTC.
- The railways mean trains like Guru Kripa, which visits all areas associated with Guru Nanak, or a Ramayan-themed train, which visits places associated with Lord Ram.
- Anyone can apply to take these trains and run them on special tourism circuits based on a theme, including groups, trusts, consortia, and even state governments.
- Tourists will be able to purchase all-inclusive packages that include rail travel, hotel accommodations, sightseeing arrangements, visits to historical/heritage sites, and tour guides, among other things.
- The scheme has been developed after extensive stakeholder discussions and a lot of State Governments, including Odisha, Rajasthan, Karnataka and Tamil Nadu, have shown interest.

Benefits of the Scheme:

- These trains will assist people in India and around the world understand India's rich cultural heritage and spectacular historical sites.
- They will also aid in the development of India's tremendous tourism potential.

Bedti-Varada Interlinking Project

- ***Context:***
- Environmental groups in Karnataka have criticised the project to link the Bedti and Varada rivers in Karnataka, calling it 'unscientific' and a 'waste of public money'.

Relevance:

- GS III- Infrastructure

Dimensions of the Article:

- 1. Bedti-Varada Interlinking Project
- 2. Why is the project distasteful to activists?
- 3. Interlinking of Rivers

Bedti-Varada Interlinking Project

- The country's major rivers project, conceived by the then-PM Vajpayee government, also included the Bedti-Aghanashini-Varade river-linking project.
- In 2002, the Central Government established a task team to develop action plans for connecting the riverbeds.
- It was recommended that the project be started in 2016 once the project's cost and funding sources were determined.
- The Bedti-Varada project was envisaged in 1992 as one to supply drinking water by the then government.
- The plan aims to link the Bedti, a river flowing west into the Arabian Sea, with the Varada, a tributary of the Tungabhadra river, which flows into the Krishna, which in turn flows into the Bay of Bengal.

- A massive dam will be erected at Hirevadatti in Gadag district under the project. A second dam will be built on the Pattanahalla river at Menasagoda in Sirsi, Uttara Kannada district.
- Both dams will take water to the Varada via tunnels of length 6.3 kilometres and 2.2-km. The water will reach at a place called Kengre.
- It will then go down a 6.88 km tunnel to Hakkalumane, where it will join the Varada.
- The project thus envisages taking water from the water surplus Sirsi-Yellapura region of Uttara Kannada district to the arid Raichur, Gadag and Koppal districts.

Why is the project distasteful to activists?

- The Bedti, a river that runs west into the Arabian Sea, and the Varada, a tributary of the Tungabhadra River that empties into the Krishna, which empties into the Bay of Bengal, are intended to be connected by the proposal.
- The project, according to the protestors, won't guarantee water to the locations that are supposed to benefit from it.
- Only the contractors, cement, iron, and granite industries and political lobbying organisations would gain from it.

Interlinking of Rivers

- In 1858, Arthur Cotton (British general and irrigation Engineer) came up with even more ambitious proposals such as connecting all major rivers of India, and interlinking of canals and rivers. He suggested drought-relief measures for Odisha.
- The National River Linking Project (NRLP) formally known as the National Perspective Plan, envisages the transfer of water from water 'surplus' basins where there is flooding, to water 'deficit' basins where there is drought/scarcity, through inter-basin water transfer projects.
- The interlinking of river project is a Civil Engineering project, which aims to connect Indian rivers through reservoirs and canals.
- The farmers will not have to depend on the monsoon for cultivation and also the excess or lack of water can be overcome during flood or drought.
- Since the 1980s, the interlinking project has been managed by India's National Water Development Agency (NWDA) under the Ministry of Water Resources.

It has been split into three parts as follows:

- A northern Himalayan river interlink component.
- A southern peninsular component.
- An Intra-State river linking component.

The Problems Plaguing Thermal Power Generators

Context

- On June 10, India's power demand touched a record high of 211 MW even as the coal shortage continued with coal stocks available only for eight days. To bridge the gap between shortage in domestic supply and increasing demand, power-generating companies or 'gencos' were directed to use imported coal for 10% of their requirement, failing which their domestic supplies would be cut.

Relevance

- GS-III: Infrastructure: Energy, Ports, Roads, Airports, Railways etc, Conservation,
- Environmental Pollution and Degradation.

Dimensions of the Article

- India's Power Crisis
- Perennial Bottlenecks in Energy Infrastructure

- Causes of the Crisis
- Way Forward

India's Power Crisis

- India is the second largest producer of coal, with reserves that could last up to 100 years.
- Despite that, year after year, the shortage of coal supplies continues perpetuate. As of September 2021, thermal power comprised 60% of India's installed capacity in power generation. Coal-based power generation, with a capacity of around 210 GW accounts for about 53% of India's total power capacity (Mar'22). India imports about 20% of its thermal coal requirements.

Why does India have a recurring power crisis?

- As per data, domestic production of coal stagnated between FY18 and FY21, reviving in FY22. But economic recovery & surge in temperature conditions led to increased demand.
- Until FY20, domestic sources contributed to about 90% of the power sector's coal demands. But by FY22, the reliance on imports dwindled to 3.8% which built pressure on domestic supplies.
- This demand dip consequently skyrocketed the prices of coal by 5-6 times in the international markets. Both shortfall in domestic supplies and rising cost of imports have put power plants in a dire situation.

Perennial bottlenecks

- The use of imported coal will also push up the price of power supply to the
- Discoms, often dubbed as the weakest link in the power sector chain.
- Discoms owe long-standing dues to the tune of ₹1.16 lakh crore to the gencos.
- Delays in payments by discoms create a working capital crunch for generating companies which in turn inhibits them from procuring an adequate quantity of coal.
- Discoms are bleeding because the revenue they generate is much lower than their costs. For instance, Tamil Nadu, J&K, and Rajasthan have the widest gap between revenues and expenses of discoms.
- Other issues like non-periodic revision of tariffs periodically, delay in compensation from the government compounds the woes of cash-stripped discoms.

Causes of the Power Crisis?

- The soaring heatwaves and revival of economic activities after Covid-19 disruptions propelled electricity demand.
- Inefficiency of TPPs: With 236 GW of thermal power plants (TPPs) running much below standards.
- Discom Losses: Despite two decades of sectoral reforms, the aggregate losses of discoms stand at 21% (2019-20) further stripping them of cash liquidity.
- Multiple Structural Fault Lines that have disrupted the supply chains.

Way Forward

- Given the country's development aspirations, India's power demand is set to rise substantially and become more variable. Increasing climatic and geopolitical uncertainties underscore the need to become more efficient in the way we generate, distribute and consume energy. We need to act now for the long-term resilience of India's power sector.
- Planning and Policy Reforms changing from managing scarcity to one of flexible resiliency.
- We also need to introduce feedback loops in the ecosystem so that stakeholders have both carrots and sticks.
- Enabling environment via achievement of India's solar power targets.
- Discoms should be enabled to undertake smart assessment and management of demand.

SCIENCE AND TECHNOLOGY

What is Web 5.0?

Context:

- Former Twitter CEO recently announced his vision for a **new decentralized web platform** that is being called Web 5.0 and is being built with an aim to return “ownership of data and identity to individuals”.

Relevance

- GS III- Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio- Technology

Dimensions of the Article:

- 1. About Web 1
- 2. About Web 2
- 3. About Web 3
- 4. What is Web 5.0?
- 5. What are the use cases for Web 5.0?

About Web 1

- Web 1.0 is the world wide web or the internet that was invented in 1989.
- It became popular from 1993.
- The internet in the Web 1.0 days was mostly static web pages where users would go to a website and then read and interact with the static information.
- Even though there were ecommerce websites in the initial days it was still a closed environment and the users themselves could not create any content or post reviews on the internet. Web 1.0 lasted until 1999.

About Web 2

- Web 2.0 started in some form in the late 1990s itself though 2004 was when most of its features were fully available.
- It is still the age of Web 2.0 now.
- The differentiating characteristic of Web 2.0 compared to Web 1.0 is that users can create content.
- They can interact and contribute in the form of comments, registering likes, sharing and uploading their photos or videos and perform other such activities.
- Primarily, a social media kind of interaction is the differentiating trait of Web 2.0.

About Web 3

- The model, a decentralized internet to be run on blockchain technology, would be different from the versions in use, Web 1.0 and Web 2.0.
- In Web3, users will have ownership stakes in platforms and applications unlike now where tech giants control the platforms.
- Gavin Wood, founder of Ethereum, a block chain technology company, used the term Web3 first in 2014 and in the past few years many others have added to the idea of Web3.
- In 2021, owing to the popularity of crypto-currency, more discussions happened on Web3.

What is Web 5.0?

- Web 5.0 is aimed at “building an extra decentralized web that puts you in control of your data and identity”.
- Simply put, Web 5.0 is Web 2.0 plus Web 3.0 that will allow users to ‘own their identity’ on the Internet and ‘control their data’.

- Both Web 3.0 and Web 5.0 envision an Internet without threat of censorship – from governments or big tech, and without fear of significant outages.
- Difference between Web 5.0 and Web 3.0: Web 3.0 isn't truly decentralized or owned by its users, but is instead controlled by various "venture capitalists and limited partners".

What are the use cases for Web 5.0?

About changing the "control of identity",

- Alice holds a digital wallet that securely manages her identity, data, and authorizations for external apps and connections.
- Alice uses her wallet to sign in to a new decentralized social media app.
- Because Alice has connected to the app with her decentralized identity, she does not need to create a profile, and all the connections, relationships, and posts she creates through the app are stored with her, in her decentralized web node.
- Now Alice can switch apps whenever she wants, taking her social persona with her.

Talking about giving users control over their own data,

- It cites example of another user, Bob, and describes him as a music lover who hates having his personal data locked to a single vendor as it forces him to regurgitate his playlists and songs over and over again across different music apps.
- Thankfully there's a way out of this maze of vendor-locked silos: Bob can keep this data in his decentralized web node.
- This way Bob is able to grant any music app access to his settings and preferences, enabling him to take his personalized music experience wherever he chooses.

Artillery rockets

Context:

- As the fighting in eastern Ukraine turns into an artillery duel, the Pentagon announced that it would send its most advanced artillery rocket launcher and munitions to the Ukrainian military in the hope of giving it an edge over Russia.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

1. What is an artillery rocket?
2. Has the United States used these weapons?
3. Difference between a rocket and a missile in this context
4. Does Russia have anything similar?
5. Do the U.S. rockets have other advantages?

What is an artillery rocket?

- An artillery rocket is a weapon that is typically propelled by a solid-fuel motor and can carry a variety of warheads.
- During the Cold War, most artillery rockets were unguided and imprecise when fired at greater distances.
- In the 1970s, the United States invested in a new weapon it called MLRS, for Multiple Launch Rocket System, designed for use in the event that Russian armored vehicles massed for World War III on the border of Western Europe.

Multiple Launch Rocket System:

- The M270 MLRS launcher was an armored vehicle that could carry two “pods” of munitions.
- Each pod held either six cluster-weapon rockets that could fly about 20 miles, or a single, larger guided missile, called ATACMS, for Army Tactical Missile System, that could fly about 100.
- The 23-ton launcher moved on treads, at speeds up to 40 mph.

High Mobility Artillery Rocket System:

- Years later, the Pentagon introduced a more easily transportable version called HIMARS, for High Mobility Artillery Rocket System, which is based on a wheeled truck that is much lighter.
- Unlike its predecessor, the M142 HIMARS truck carries only one pod of munitions, but it can move much faster on and off-road, and can be shipped on a C-130 cargo plane.

Has the United States used these weapons?

- During Operation Desert Storm, government records show that the U.S. Army fired more than 17,200 unguided MLRS rockets and 32 of the larger ATACMS guided missiles at Iraqi forces.
- In 2005, the Army fired a new guided rocket, known as a GMLRS, in combat in Iraq for the first time. That rocket has a range of more than 40 miles, more than twice that of the older rockets, and its navigation is aided by GPS signals.

Difference between a rocket and a missile in this context

- The nomenclature can be confusing sometimes, but generally the word “rocket” is used in a military context to refer to relatively inexpensive unguided weapons powered by solid-fuel motors, while “missile” is generally shorthand for “guided missiles,” more expensive and complicated weapons that use movable fins to steer themselves to their targets and can fly much farther.
- The Pentagon has already sent short-range, inexpensive and unguided antitank weapons that are classified as rockets to Ukraine, like the AT-4, and the longer-range Javelin, which is a guided missile.
- That delineation worked well in the past with the MLRS and ATACMS weapons, but in more recent years the military has built weapons it calls “guided rockets” — like GMLRS — which are often older rocket designs upgraded to have guidance systems and movable fins on their nose to steer them.
- The money part still holds true, though. GMLRS rockets remain far less expensive than the old ATACMS and the Precision Strike Missiles being developed to replace them.

Does Russia have anything similar?

- The Russian military has primarily used three types of unguided artillery rockets during the war in Ukraine.
- The largest, the 300 mm Smerch, can fire a guided rocket, which makes it more accurate, and has a range similar to the GMLRS, although few have been seen in photos of the war.
- Most Smerch launches in Ukraine are unguided rockets, many containing cluster weapon warheads.

Do the U.S. rockets have other advantages?

- There’s one major advantage to the MLRS and HIMARS launchers: They can be fully reloaded within minutes.
- Both vehicles have a winch that allows them to lower an empty pod to the ground, pick up a new, loaded pod, and pull it into place.
- The Russian launchers must be manually loaded, tube by tube

D2M TECHNOLOGY:

Context

- The Department of Telecommunications (DoT) and India’s public service broadcaster Prasar Bharati are exploring the feasibility of a technology that allows to broadcast video and other forms of multimedia content directly to mobile phones, without needing an active internet connection.

- The technology, called 'direct-to-mobile' (D2M) broadcasting, promises to improve consumption of broadband and utilisation of spectrum.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. What is direct-to-mobile broadcasting?
- 2. Advantages:
- 3. What is the government doing to facilitate D2M technology?
- 4. Possible challenges to the technology's rollout

What is direct-to-mobile broadcasting?

- The technology is based on the convergence of broadband and broadcast, using which mobile phones can receive terrestrial digital TV.
- It would be similar to how people listen to FM radio on their phones, where a receiver within the phone can tap into radio frequencies.
- Using D2M, multimedia content can also be beamed to phones directly.
- The idea behind the technology is that it can possibly be used to directly broadcast content related to citizen-centric information and can be further used to counter fake news, issue emergency alerts and offer assistance in disaster management, among other things phones.
- More so, the content should stream without any buffering whatsoever while not consuming any internet data.

Advantages:

For consumers,

- A technology like this would mean that they would be able to access multimedia content from Video on Demand (VoD) or Over The Top (OTT) content platforms without having to exhaust their mobile data, and more importantly, at a nominal rate.
- The technology will also allow people from rural areas, with limited or no internet access, to watch video content.

For businesses,

- It can enable telecom service providers to offload video traffic from their mobile network onto the broadcast network, thus helping them to decongest valuable mobile spectrum.
- This will also improve usage of mobile spectrum and free up bandwidth which will help reduce call drops, increase data speeds etc.

What is the government doing to facilitate D2M technology?

- The Department of Telecommunications (DoT) has set up a committee to study the feasibility of a spectrum band for offering broadcast services directly to users' smartphones
- At the moment, this band is used by the Ministry of Information & Broadcasting across the country for TV transmitters.
- Public service broadcaster Prasar Bharati had last year announced a collaboration with IIT Kanpur to test the feasibility of the technology.

Possible challenges to the technology's rollout

- While still at a nascent stage, bringing key stakeholders like mobile operators onboard will be the "biggest challenge" in launching D2M technology on a wide scale.

- Mass roll out of the technology will entail changes in infrastructure and some regulatory changes.

Radio-frequency identification (RFID) technology Vs barcodes

Context:

- Baggage tags equipped with radio-frequency identification (RFID) will soon be available at Delhi's Indira Gandhi International Airport, marking a first of its kind for the country.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. What is RFID tags?
- 2. What is a barcode?
- 3. Radio-frequency identification (RFID) technology Vs barcodes
- 4. Is RFID enhanced version of barcode?

What is RFID tags?

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

Types of RFID tags:

- Active RFID tags
- Passive RFID tags

Active RFID tags

- Active RFIDs use their own power source, mostly batteries.
- Active tags can ping information every few seconds like beacons, or they can get activated when a reader is in the proximity.
- Active tags have a longer read range, around 300 ft, compared to passive tags.

Passive RFID tags

- Passive RFIDs, on the other hand, are activated through the reader using the electromagnetic energy it transmits.
- This is enough power for the tag to transmit information back to the reader.

What is a barcode?

- A barcode is a printed series of parallel bars or lines of varying width used for entering data into a computer system.
- The bars are black on a white background and vary in width and quantity depending on the application.
- The bars represent the binary digits zero and one, which represent the digits zero to nine processed by a digital computer.
- These barcodes are scanned using special optical scanners known as barcode readers, which come in a variety of shapes and sizes.
- The majority of these codes use only two different widths of bars, however some use four.
- The numbers that make up a barcode are also printed at the bottom.
- One of the most well-known examples of a barcode is the QR code.

Radio-frequency identification (RFID) technology Vs barcodes

- RFID uses radio waves to communicate data from RFID chips to readers that do not require line of sight in order to obtain the data, whereas barcodes use light to read the black-and-white pattern printed on the sticky tag.
- An RFID tag can communicate with a powered reader even when the tag is not powered.
- When printed on paper or sticky labels, barcodes are more susceptible to wear and breakage, which can affect their readability. RFID tags, on the other hand, are sometimes placed in plastic labels or into the object itself, making them more durable than barcodes.
- In contrast to barcode scanners, RFID scanners can process dozens of tags in a single second.
- Also, barcodes are simple and easy to copy or counterfeit, whereas RFID is more complicated and difficult to replicate or counterfeit.
- Unlike barcodes, which must in line of sight, RFID tags need not be.
- Also, RFID tags are expensive compared to barcodes.

Is RFID enhanced version of barcode?

- Since their introduction in the 1970s, barcodes have become an indispensable part of commercial activity on a daily basis, whether in grocery stores or at airports.
- When it comes to speed, there is a noticeable difference between barcodes and RFID. This is because barcodes must be read manually, making them more susceptible to human error and more difficult to evaluate their accuracy.
- However, RFID's accuracy may be compromised if the tags are applied to metals or liquid.
- Since RFID frequencies can be transmitted over greater distances than barcode frequencies, there is also concern that RFID technology raises data protection issues, resulting in personal information becoming accessible without consent.
- When deciding whether to use barcodes or RFID, it is important to consider the purpose, the environment, and the potential costs of an application.

World's first liquid-mirror telescope***Context:***

- In early 2022, India's first liquid-mirror telescope, which will observe asteroids, supernovae, space debris and all other celestial objects from an altitude of 2,450 metres in the Himalayas, saw its first light as it peered into the zenith from the Devasthal observatory in Uttarakhand.
- Having entered the commissioning phase, it became the world's first liquidmirror telescope to be commissioned for astronomy.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. About liquid-mirror telescope
- 2. How is it different from a conventional telescope?
- 3. Which countries are involved in its development?
- 4. What is the data that will be generated and how will it be used?

About liquid-mirror telescope

- The International Liquid-Mirror Telescope (ILMT) has been set up at the Devasthal Observatory campus owned by Aryabhata Research Institute of Observational Sciences (ARIES), Nainital in Uttarakhand.
- Located at 2,450 metres above mean sea level, there are two firsts with this —
- It's the only one to have been developed for astronomy research

- It is also the only one of its kind to be operational anywhere in the world
- The handful of liquid-telescopes that were previously built either tracked satellites or were deployed for military purposes.
- ILMT will be the third telescope facility to come up at Devasthal — one of the world's pristine sites for obtaining astronomical observations.
- With ILMT set to commence full-scale scientific operations in October this year, it will work along with the 3.6-metre Devasthal Optical Telescope (DOT), the largest telescopes operating in India (of the 4-metre class).
- Also operating at the location is the 1.3-metre Devasthal Fast Optical Telescope (DFOT) inaugurated in 2010.

How is it different from a conventional telescope?

- **Observation:**
- A conventional telescope is steered to point towards the celestial source of interest in the sky for observations.
- The liquid-mirror telescopes, on the other hand, are stationary telescopes that image a strip of the sky which is at the zenith at a given point of time in the night.
- In other words, a liquid-mirror telescope will survey and capture any and all possible celestial objects — from stars, galaxies, supernovae explosions, asteroids to space debris.

Mirror:

- Conventional telescopes have highly polished glass mirrors — either single or a combination of curved ones — that are steered in a controlled fashion to focus onto the targetted celestial object on specific nights. The light is then reflected to create images.
- As opposed to this, as is evident by the name, the liquid-telescope is made up of mirrors with a reflective liquid, in this case, mercury — a metal which has a high light-reflecting capacity.
- About 50 litres (equal to 700kgs) of mercury filled into a container will be rotated at a fixed constant speed along the vertical axis of the ILMT.
- During this process, the mercury will spread as a thin layer in the container forming a paraboloid-shaped reflecting surface which will now act as the mirror. Such a surface is ideal to collect and focus light. The mirror has a diameter of 4 metre.

Operational time

- Another difference between the two is their operational time.
- While conventional telescopes observe specific stellar sources for fixed hours as per the study requirement and time allotted by the respective telescope time allotment committee, ILMT will capture the sky's images on all nights — between two successive twilights — for the next five years starting October 2022.
- For protecting it from moisture during monsoon, the ILMT will remain shut for operations between June and August.

Which countries are involved in its development?

- India, Belgium, Canada, Poland and Uzbekistan are the main countries who have collaborated to set up the ILMT.
- The telescope was designed and built at the Advanced Mechanical and Optical Systems Corporation and the Centre Spatial de Liège in Belgium.
- The funding, estimated to range between Rs 30 to Rs 40 crore, was jointly provided by Canada and Belgium. The operations and up-keep of this telescope is to be done by India.

What is the data that will be generated and how will it be used?

- It is estimated that the ILMT is capable of generating 10-15 GB/night.

- With ILMT set for operations every night during nine months a year for the next five years starting October 2022, there will be data generated in gigantic volumes.
- According to international norms, the data generated by a new telescope facility will be cleaned, maintained and archived at either of the host/participating institutes, in this case, the AIRES.
- The norms also mandate that for an initial stipulated period, the data will be open only for researchers from these participating institutes.
- At a later stage, the data will be accessible to all global scientific communities.
- In order to sieve, process and analyse the large datasets, the ILMT will deploy the latest computational tools, like Artificial Intelligence, Machine Learning and big data analytics.
- Another advantage for having such large data sets is that the select data can be culled out as base data which can then be followed-up for further focused studies using spectrographs, near-Infrared spectrograph mounted on the inhouse DOT

The status of Evtol

Context:

- The Union Civil Aviation Minister has said that the Government of India is exploring the possibility of inviting manufacturers of Electric Vertical Take off and Landing (eVTOL) aircraft to set up base in India.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. What is eVTOL?
- 2. Developments in powering eVTOLs
- 3. What are the challenges?

What is eVTOL?

- An **electric vertical take-off and landing (eVTOL)** aircraft is one that uses electric power to hover, take off, and land vertically.
- Most eVTOLs also use what is called as distributed electric propulsion technology which means integrating a complex propulsion system with the airframe.

There are multiple motors for various functions;

- to increase efficiency;
- to also ensure safety.
- This is technology that has grown on account of successes in electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies and also fuelled by the need for new vehicle technology that ensures urban air mobility (UAM).
- Thus, eVTOL is one of the newer technologies and developments in the aerospace industry.

eVTOL features include:

- eVTOL is a runway independent technological solution for the globe's transportation needs.
- This is because it opens up new possibilities which aircraft with engines cannot carry out in areas such as manoeuvrability, efficiency and even from the environmental point of view.
- There are an estimated 250 eVTOL concepts or more being fine-tuned to bring alive the concept of UAM. Some of these include the use of multi-rotors, fixedwing and tilt-wing concepts backed by sensors, cameras and even radar.
- The key word here is "autonomous connectivity". Some of these are in various test phases.
- There are also others undergoing test flights so as to be certified for use.

- In short, eVTOLs have been likened to “a third wave in an aerial revolution”; the first being the advent of commercial flying, and the second, the age of helicopters.

Developments in powering eVTOLs

- The roles eVTOLs adopt depends on battery technology and the limits of onboard electric power.
- Power is required during the key phases of flight such as take off, landing and flight (especially in high wind conditions).
- There is also the important factor of weight. BAE Systems, for example, is looking at formats using a variety of Lithium batteries.
- Nano Diamond Batteries is looking at “Diamond Nuclear Voltaic (DNV) technology” using minute amounts of carbon-14 nuclear waste encased in layered industrial diamonds to create selfcharging batteries.
- There are some industry experts who are questioning the use of only batteries and are looking at hybrid technologies such as hydrogen cells and batteries depending on the flight mission.
- There is even one that uses a gas-powered generator that powers a small aircraft engine, in turn charging the battery system.
- But whatever the technology, there will be very stringent checks and certification requirements.

What are the challenges?

- As the technology so far is a mix of unpowered and powered aircraft, the areas in focus include “**crash prevention systems**”. These use cameras, radar, GPS (global positioning system) and infrared scanners.
- There are also issues such as **ensuring safety in case of powerplant or rotor failure**.
- Aircraft protection from **cyberattacks** is another area of focus.
- A third area is in navigation and flight safety and the use of technology when **operating in difficult terrain, unsafe operating environments and also bad weather**.

Agni-4

- **Focus:** GS III- Science and Technology

Why in News?

- Recently, India successfully tested the Intermediate Range Ballistic Missile (IRBM) Agni-4, which met all parameters.

Details:

- The flight was part of routine user training launches carried out under the aegis of the Strategic Forces Command (SFC).
- The SFC is responsible for the management and administration of the country's tactical and strategic nuclear weapons stockpile. It is a part of India's Nuclear Command Authority.
- A successful training launch of an Intermediate-Range Ballistic Missile, Agni-4, was carried out from APJ Abdul Kalam Island, Odisha.
- The successful test of the Intermediate Range Ballistic Missile reaffirms India's policy of having a 'Credible Minimum Deterrence' Capability."

Agni-IV

- It is the fourth in the Agni series of missiles which was earlier known as Agni II prime.
- It has been developed by India's DRDO and displayed a number of new technologies and significant improvement in missile technology.
- The missile is light-weight and has two stages of solid propulsion and a payload with re-entry heat shield.

- With 3,500 to 4,000 km range, it is capable of striking targets in nearly all of mainland China, if launched from northeastern part of India.

About Agni Missiles

- There are 5 Agni series of missiles:
- **Agni I:** Range of 700-800 km.
- **Agni II:** Range more than 2000 km.
- **Agni III:** Range of more than 2,500 Km
- **Agni IV:** Range is more than 3,500 km and can fire from a road mobile launcher.
- **Agni-V:** The longest of the Agni series, an Inter-Continental Ballistic Missile (ICBM) with a range of over 5,000 km.

Tiangong space station

Context:

- Three Chinese astronauts floated into the country's new Tiangong space station for a three-month mission.

Relevance:

- GS III Science and Technology

Dimensions of the Article:

- 1. Tiangong Space Station
- 2. Features of this Space Station

Tiangong Space Station

- Tiangong refers to "Heavenly Palace," and it was 10.4 metres long and 3.35 metres wide at its widest point, weighing 8.6 metric tonnes.
- It was launched on September 15, 2016, and hosted two Chinese astronauts for 30 days in late 2016, making it China's longest human space mission to date.
- The space lab was decommissioned when China's first space station, Tiangong- 1, crashed into the southern Pacific Ocean on April 1, 2018, after Chinese scientists lost control of the ship.
- Tiangong-1 was launched by China in 2011 as a proof-of-concept for future stations.
- By the end of 2022, the Tiangong will be completely functioning.

Features of this Space Station

- Tiangong's two robotic arms are its most notable feature, and the US has previously expressed alarm about its potential to grasp anything from space, including satellites.
- Previously, the 10-meter-long arm was spotted successfully catching and moving a 20-tonne Tianzhou-2 cargo ship in a test.
- The small arm is highly flexible, allowing for more precise operations.

The science behind the cancer cure

Context:

- In a medical trial, 12 patients in the United States were completely cured of rectal cancer without requiring any surgery or chemotherapy.
- The study was done by doctors from the Memorial Sloan Kettering Cancer Centre in New York.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. What are the findings?
- 2. What is this deficiency, and how was it cured?
- 3. When can such a treatment be accessible in India?

What are the findings?

- The trial used a monoclonal antibody called dostarlimab every three weeks for six months for the treatment of a particular kind of stage two or three rectal cancer.
- The trial showed that immunotherapy alone – without any chemotherapy, radiotherapy, or surgery that have been staples of cancer treatment – could completely cure the patients with a particular kind of rectal cancer called ‘mismatch repair deficient’ cancer”.
- All 12 patients had completed the treatment and were followed for six to 25 months after.
- No cases of progression or recurrence had been reported during the followup.
- The response too was rapid, with symptoms resolving in 81% of the patients within nine weeks of starting the therapy.

What is this deficiency, and how was it cured?

- ‘Mismatch repair deficient’ cancer is most common among colorectal, gastrointestinal, and endometrial cancers.
- Patients suffering from this condition lack the genes to correct typos in the DNA that occur naturally while cells make copies.
- The immunotherapy belongs to a category called PD1 blockades that are now recommended for the treatment of such cancers rather than chemotherapy or radiotherapy.
- PD1 is a type of protein that regulates certain functions of the immune system, including by suppressing T cell activity, and PD1 blockade therapy looks to release the T cells from this suppression. When can such a treatment be accessible in India?
- The problem with immunotherapies is that they are expensive and unaffordable for most people in India
- An immunotherapy treatment can cost around Rs 4 lakh per month, with patients needing the treatment for six months to a year.
- Precision medicine, such as using particular immunotherapy drugs for particular types of cancers, is still at a nascent stage in India.
- It would take at least ten years for it to become commonplace.
-

Prithvi-II Missile***Context:***

- Recently, India successfully conducted the night trial of surface-to-surface nuclear-capable short-range ballistic missile Prithvi-II.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. About Prithvi-II Missile
- 2. About the Integrated Guided Missile Development Programme (IGMDP)

About Prithvi-II Missile

- The 350-kilometer strike range of the Prithvi-II surface-to-surface missile is impressive.
- It has twin liquid propulsion engines and is capable of carrying 500-1,000 kg of warheads.

- In 2003, it was added to the Indian defence forces' armory.
- It's a single-stage liquid-fueled missile that stands nine metres tall.
- To achieve its target, the cutting-edge missile employs an advanced inertial guidance system and a manoeuvring trajectory.
- It is the first missile developed by the Defence Research and Development Organization (DRDO) under the Integrated Guided Missile Development Program (IGMDP).

Other variants of Prithvi

- The initial project framework of the Integrated Guided Missile Development Program outlines the variants in the following manner:
- **Prithvi I (SS-150)** – Army version, 150 km range with a payload of 1,000 kg
- **Prithvi II (SS-250)** – Air Force version, 350 km range with a payload of 500 kg
- **Prithvi III (SS-350)** – Naval version, 350 km range with a payload of 1,000 kg

About the Integrated Guided Missile Development Programme (IGMDP)

- The Integrated Guided Missile Development Programme (IGMDP) was conceived by renowned scientist Dr. A P J Abdul Kalam to enable India attain self-sufficiency in the field of missile technology.
- Dr. Kalam, the then Director of Defence Research & Development Laboratory (DRDL), headed a Missile Study Team to weigh the feasibility of the programme. The team included members from the Defence Research and Development Organisation (DRDO), the Army, Navy and Air Force, and Defence Production.
- Keeping in mind the requirements of various types of missiles by the defence forces, the team recommended development of five missile systems. The IGMDP finally got the approval from the Government of India on July 26, 1983.
- The ambitious, time-bound project brought together the country's scientific community, academic institutions, R&D laboratories, industries and the three Services in giving shape to the strategic, indigenous missile systems.

The missiles developed under the programme were

- Short-range surface-to-surface ballistic missile Prithvi
- Intermediate-range surface-to-surface ballistic missile Agni
- Short-range low-level surface-to-air missile Trishul
- Medium-range surface-to-air missile Akash
- Third generation anti-tank missile Nag

Auctioning 5G spectrum bands

- Recently, the Union Cabinet, chaired by Prime Minister, gave its nod for the auction of spectrum that can be used to offer 5G services.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

1. About 5G
2. Application of 5G
3. What are the key issues?
4. What benefits are likely to come with 5G?

About 5G

- 5G is the next generation of mobile broadband that will eventually replace, or at least augment 4G LTE connection and it offers exponentially faster download and upload speeds.

- 5G will deliver multi-Gbps peak rates, ultra-low latency, massive capacity, and a more uniform user experience.
- This is in contrast to 4G link speeds in averaging 6-7 Megabit per second (Mbps) in India as compared to 25 Mbps in advanced countries.

Application of 5G

- 5G will help in creating cyber-physical networks which not only interconnect people, but also interconnect and control machines, objects, and devices. It will deliver new levels of performance and efficiency that will empower new user experiences and connect new industries.
- It will act as an enabler for the Industrial Revolution 4.0 and is expected to form the backbone of emerging technologies such as the Internet of Things (IoT) and machine to machine communications.
- 5G can also help make transport infrastructure more efficient by making it smart. It will enable vehicle-to-vehicle and vehicle-to-infrastructure communication, making driverless cars, among other things, a reality.
- Also, the primary applications of 5G will be the implementation of a sensorembodied network that will allow real-time relay of information across fields such as manufacturing, consumer durables and agriculture.

When will the spectrum be auctioned?

- The auctions are scheduled to commence from July 26.
- The Department of Telecom has invited applications from prospective bidders to participate in the auctions.
- Based on the applications, the government will pre-qualify applicants who meet the eligibility criteria.

When will the commercial roll-out happen?

- Telecom Minister recently said that the 5G deployment is likely to start from August-September 2022, and service should commence in about 20-25 cities by the year-end.
- Experts and analysts expect a gradual roll-out of 5G across the country in a phased manner over the next two to three years, with roll-outs beginning from the second half of the current year.

What are the key issues?

- The two issues that the industry has highlighted with regards to the upcoming auctions are
- High reserve prices for the spectrum
- Direct allotment of spectrum to enterprises for setting up captive private networks.
- The government has accepted the recommendations given by the Telecom Regulatory Authority of India (TRAI) on reserve prices for spectrum auctions.
- While the TRAI had earlier recommended reducing prices of airwaves across various bands by 35-40% from its earlier proposed base price, the telecom operators had expressed disappointment given their demand for a 90% cut in the prices.
- At these prices, a block of 5MHz spectrum (paired) in the 700MHz band will cost ₹196bn (US\$2.5bn), 50MHz block in the 3.4GHz band will cost ₹159bn (US\$2bn) and 400MHz block in the 26GHz band will cost ₹28bn (US\$0.4bn).
- On allowing direct allocation of spectrum for captive non-public networks, the government has reasoned that the move will spur a new wave of innovations in Industry 4.0 applications such as machine to machine communications, Internet of Things (IoT), Artificial Intelligence (AI) across automotive, healthcare, agriculture, energy, and other sectors.
- However, the Cellular Operators Association of India (COAI), which counts the three private telcos as its members, has said that the move severely degrades the business case of TSPs.

What benefits are likely to come with 5G?

- 5G is the next generation cellular technology that will **provide faster and more reliable communication** with ultra low latency.
- As per the set standards, with 5G, the peak network speeds are expected to be in the range of 2-20 Gbps as opposed to about 25 Mbps on current 4G networks.
- In India, however, 4G speeds average at around 6-7 Mbps, but are picking up gradually.
- It is expected that with 5G technology, consumers will be able to **download data heavy content such as 8K movies** and games with better graphics in just a few seconds.
- The users will need to update to 5G-enabled devices to access the network, if they are not already using one.
- However, it is likely that the primary use of the technology will go beyond delivery of services on personal mobile devices.
- 5G is expected to form the backbone of emerging technologies such as IoT and machine to machine communications, thereby supporting a much larger range of applications and services, such as tele-surgery and real time data analytics.
- Ultra low latency offered by 5G makes the technology desirable for such use cases.
- Latency is the amount of time data takes to travel between its source and destination.
- As per a report by a government panel on 5G, even after the entry of 5G into the Indian networks, the earlier generation mobile technologies — 2G, 3G and 4G, will continue to remain in use and may take 10 or more years to phase out.
- 5G is expected to create a cumulative economic impact of \$1 trillion in India by 2035, the report added.

Critical information infrastructure

- **Context:**
- Recently, The Union Ministry of Electronics and IT (MeitY) has declared IT resources of ICICI Bank, HDFC Bank and UPI managing entity NPCI as 'critical information infrastructure'.

Relevance:

- GS II- Science and Technology

Dimensions of the Article:

1. What is critical information infrastructure?
2. Why is CII classification and protection necessary?
3. What is Cyber Attack and Cyber Security?
4. National Critical Information Infrastructure Protection Centre (NCIIPC)

What is critical information infrastructure?

- The **Information Technology Act of 2000** defines "Critical Information Infrastructure" as a "computer resource, the incapacitation or destruction of which shall have debilitating impact on national security, economy, public health or safety".
- The government, under the Act, has the power to declare any data, database, IT network or communications infrastructure as CII to protect that digital asset.
- Any person who secures access or attempts to secure access to a protected system in violation of the law can be punished with a jail term of up to 10 years.

Why is CII classification and protection necessary?

- World over governments have been moving with alacrity to protect their critical information infrastructure.
- IT resources form the backbone of countless critical operations in a country's infrastructure, and given their interconnectedness, disruptions can have a cascading effect across sectors.
- An information technology failure at a power grid can lead to prolonged outages crippling other sectors like healthcare, banking services.

- In 2007, a wave of denial-of-service attacks, allegedly from Russian IP addresses, hit major Estonian banks, government bodies – ministries and parliament, and media outlets.
- It was cyber aggression of the kind that the world had not seen before, and it came in the wake of Estonia's decision to move a memorial to the Soviet Red Army to a location of less prominence.
- The attacks played havoc in one of the most networked countries in the world for almost three weeks.
- On **October 12, 2020** as India battled the pandemic, the electric grid supply to Mumbai suddenly snapped hitting the mega city's hospitals, trains and businesses.
- Later, a study by a US firm that looks into the use of the internet by states, claimed that this power outage could have been a cyber attack, allegedly from a China-linked group, aimed at critical infrastructure.
- The government, however, was quick to deny any cyber attack in Mumbai.
- But the incident underlined the possibility of hostile state and non-state actors probing internet-dependent critical systems in other countries, and the necessity to fortify such assets.

What is Cyber Attack and Cyber Security?

- **Cyber attack** is an assault launched by cybercriminals using one or more computers against a single or multiple computers or networks. A Cyber Attack can maliciously disable computers, steal data, or use a breached computer as a launch point for other attacks. Cybercriminals use a variety of methods to launch a Cyber Attack, including malware, phishing, ransomware, denial of service, among other methods.
- **Cybersecurity** means securing the cyberspace from attack, damage, misuse and economic espionage. Cyberspace is a global domain within the information environment consisting of interdependent IT infrastructure such as Internet, Telecom networks, computer systems etc.

National Critical Information Infrastructure Protection Centre (NCIIPC)

- It was created in January 2014.
- The National Critical Information Infrastructure Protection Centre (NCIIPC) is the nodal agency for taking all measures to protect the nation's critical information infrastructure.
- It is mandated to guard CIIs from "unauthorized access, modification, use, disclosure, disruption, incapacitation or distraction".
- NCIIPC will monitor and forecast national-level threats to CII for policy guidance, expertise sharing and situational awareness for early warning or alerts.
- The basic responsibility for protecting the CII system shall lie with the agency running that CII.
- In the event of any threat to critical information infrastructure the National Critical Information Infrastructure Protection Centre may call for information and give directions to the critical sectors or persons serving or having a critical impact on Critical Information Infrastructure.

CAPSTONE, NASA's new satellite

- Recently, NASA launched CAPSTONE, a microwave oven-sized CubeSat weighing just 55 pounds (25 kg).

Relevance:

- GS III- Science and Technology

About CAPSTONE:

- CAPSTONE, short for Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment, is designed to test a unique, elliptical lunar orbit.
- As a pathfinder for Gateway, CAPSTONE aims to help reduce risk for future spacecraft by validating innovative navigation technologies, and by verifying the dynamics of the halo-shaped orbit.

- The satellite, launched on Rocket Lab's Electron rocket from the Rocket Lab Launch Complex 1, is heading toward an orbit intended in the future for Gateway, a Moon-orbiting outpost that is part of NASA's Artemis program.
- The orbit is known as a near-rectilinear halo orbit (NRHO). It is significantly elongated, and is located at a precise balance point in the gravities of Earth and the Moon. This offers stability for longterm missions like Gateway.
- At the Moon, CAPSTONE will enter NRHO, where it will fly within 1,600 km of the Moon's North Pole on its near pass and 70,000 km from the South Pole at its farthest.
- The spacecraft will repeat the cycle every six-and-a-half days and maintain this orbit for at least six months to study dynamics.
- CAPSTONE will gain experience with small dedicated launches of CubeSats beyond low-Earth orbit, to the Moon, and beyond.

Hermit, the Pegasus-like spyware

Context:

- 'Hermit' is the latest sophisticated spyware in the news, and it is believed to have targeted iPhones and Android devices in Italy and Kazakhstan.
- Hermit's deployment – the spyware has been developed by an Italian vendor called RCS Lab – was first reported by cyber security researchers at the Lookout, a San-Francisco-based cybersecurity firm.

Relevance:

- GS III- Cyber Security

Dimensions of the Article:

1. What is Hermit and what exactly does it do on a device?
2. How did Hermit get deployed on Android and iOS devices?
3. What is a spyware and what are other similar types of Cyber Attacks?

What is Hermit and what exactly does it do on a device?

- Hermit is a spyware on the lines of Pegasus by NSO Group. Once installed on a device, it can record audio on the device, carry out unauthorised calls, and carry out many unauthorised activities.
- The spyware can steal stored account emails, contacts, browser bookmarks/searches, calendar events, etc.
- It can also take pictures on the device, steal device information such as details about applications, the kernel information, model, manufacturer, OS, security patch, phone number, etc.
- It can also download and install APK (the app software files on Android) on a compromised phone.
- The spyware can also upload files from the device, read notifications, and take pictures of the screen.
- Because it can gain access to the root or the 'privilege' access of an Android system, Lookout's research showed, it can uninstall apps like Telegram and WhatsApp.
- According to the researchers, the spyware can silently uninstall/reinstall Telegram.
- Except the reinstalled version is likely a compromised one. It can also steal data from the old app.
- For WhatsApp, it can prompt the user to reinstall WhatsApp via Play Store.
- So, once Hermit has been deployed to a phone, it can control and track data from all key applications.

How did Hermit get deployed on Android and iOS devices?

- Sophisticated spyware such as Hermit and Pegasus cost millions of dollars in licensing fees, and these are not simple operations.
- It's not like common malware targeting regular users.
- And in the case of Hermit, it appears the operations used were complex.

- According to Google's TAG team, all campaigns started with a unique link sent to the victim's phone.
- When the user clicked, the page installed the application on both Android and iOS.

What is a spyware and what are other similar types of Cyber Attacks?

- ***What is Malware?***
- Malware is short for malicious software and it is a catch-all term for various malicious software, including viruses, adware, spyware, browser hijacking software, and fake security software.
- Ransomware, Spyware, Worms, viruses, and Trojans are all varieties of malware.

Types of Malware

- ***Viruses*** which are the most commonly-known form of malware and potentially the most destructive. They can do anything from erasing the data on your computer to hijacking your computer to attack other systems, send spam, or host and share illegal content.
- ***Worm*** is a type of malware that spreads copies of itself from computer to computer which can replicate itself without any human interaction, and it does not need to attach itself to a software program in order to cause damage.
- ***Trojan*** is a type of malware that is often disguised as legitimate software which can be employed by cyber-thieves and hackers trying to gain access to users' systems.
- ***Spyware*** collects your personal information and passes it on to interested third parties without your knowledge or consent. Spyware is also known for installing Trojan viruses.
- ***Ransomware*** is malware that employs encryption to hold a victim's information at ransom.
- ***Adware*** displays pop-up advertisements when you are online.
- ***Fake security software*** poses as legitimate software to trick you into opening your system to further infection, providing personal information, or paying for unnecessary or even damaging "clean ups".
- ***Browser hijacking software*** changes your browser settings (such as your home page and toolbars), displays pop-up ads and creates new desktop shortcuts. It can also relay your personal preferences to interested third parties.

Black Death

Context:

- Recently, In a study published in the journal Nature, researchers have claimed that the disease originated in modern day northern Kyrgyzstan around 1338-1339 – nearly 7-8 years before it ravaged large parts of the world.

Relevance:

- GS II- Health and Education

Dimensions of the Article:

1. What was the Black Death?
2. Why is the new discovery significant?
3. Why was this plague called the Black Death?
4. How deadly was the spread, what was its aftermath?

What was the Black Death?

- The term Black Death refers to the bubonic plague that spread across Western Asia, Northern Africa, Middle East and Europe in 1346-53.
- Most scholars agree that the Black Death, which killed millions, was caused by bacterium *Yersinia pestis* and was spread by fleas that were carried by rodent hosts.
- The microorganism *Y. pestis* spread to human populations, who at some point transmitted it to others either through the vector of a human flea or directly through the respiratory system.

- Contemporaries who wrote about the epidemic, often described the buboes (hard, inflamed lymph nodes) as the distinguishing clinical feature.
- The onset of symptoms was followed by intense fever and vomiting of blood.
- After the initial infection, most victims died within 2-7 days.

Why is the new discovery significant?

- The geographical origin point of the plague has been debated for centuries.
- Some historians have argued that the plague originated in China, and spread across Europe by Italian merchants who first entered the continent in trading caravans through Crimea.
- According to another contested theory based on a 1348 memoir of an Italian notary from Piacenza, it has been argued Mongol army hurled plague-infested bodies into the city during the siege of Caffa (Crimea) and led to spread of the disease.

Why was this plague called the Black Death?

- It is commonly believed that the term Black Death gets its name from the black marks that appeared on some of the plague victims' bodies.
- However, historians argued that this term, which only emerged centuries later, had less to do with the disease's clinical symptoms, and more to do with how European writers from the 19th century onwards understood the epidemic.
- In the 14th century, the epidemic was referred to as the 'great pestilence' or 'great death', due to the demographic havoc that it caused.

How deadly was the spread, what was its aftermath?

- Due to a lack of comprehensive historical data from that time, it is difficult to know the exact death toll. Around 60-65 per cent of Europe's population or 52 million people died due to the plague.
- A dramatic reduction in population was accompanied with huge economic and social changes in Europe.
- With a smaller labour force available, wages went up, leaving ordinary people with a higher economic surplus.
- The Black Death also led to an increase in religious persecution of the Jews, who were blamed for spreading the contagion.

eSanjeevani

- **Focus:** GS III- Health

Why in News?

- eSanjeevani', Govt. of India's free Telemedicine service integrated with NHA's Ayushman Bharat Digital Mission (ABDM)
- The users of eSanjeevani can create their 14-digit unique Ayushman Bharat Health Account (ABHA) and use it to link their existing health records

What is E-Sanjeevani?

- Ministry eevani AB-HWC) in the hub and spoke model and patient to doctor (eSanjeevani OPD).
- E-Sanjeevani OPD (out-patient department) is a telemedicine variant for the public to seek health services remotely; it was rolled out on 13th of April 2020 during the first lockdown in the country.
- e-Sanjeevani OPD is a Govt of India flagship telemedicine platform developed by the Centre for Development of Advance Computing (C-DAC), Mohali under the aegis of MoHFW, Govt of India.
- It provides free consultations to any Indian citizen.
- However, with covid cases surging, the demand for doctors is up while the supply has reduced due to doctors being pulled out for covid ward duties.

- It enables virtual meetings between the patients and doctors & specialists from geographically dispersed locations, through video conferencing that occurs in real-time.
- At the end of these remote consultations, eSanjeevani generates electronic prescriptions which can be used for sourcing medicines.
- Andhra Pradesh was the first state to roll out eSanjeevani AB-HWC services in November 2019.

Benefits of telemedicine

- **Transportation:** Patients can avoid spending gas money or wasting time in traffic with video consultations.
- **No missing work:** Today, individuals can schedule a consultation during a work break or even after work hours.
- **Childcare/Eldercare Challenges:** Those who struggle to find care options can use telemedicine solutions.

About Ayushman Bharat Digital Mission:

- Ayushman Bharat Digital Mission will help connect digital health solutions across the country.
- All Indians will get a digital health ID under this scheme.
- Every citizen's health record will now be digitally secure.
- The health ID will be used as health account.
- Personal health records can be linked to this account and viewed with the help of a mobile application.
- Ayushman Bharat Digital Mission will provide reliable data, leading to better treatment and savings for patients too.
- The National Health Authority (NHA) will be the implementing agency of Ayushman Bharat Digital Mission (ABDM).

Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)

- Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) is the flagship scheme of the Union government as a part of the Indian government's National Health Policy.
- AB-PMJAY provides a health cover of up to Rs. 5 lakh a family a year, for secondary and tertiary care hospitalization, to India's bottom 40% poor and vulnerable population.
- The programme was launched in September, 2018.
- AB-PMJAY is under the aegis of Ministry of Health and Family Welfare.
- The PM Jan Arogya Yojana beneficiaries get an e-card that can be used to avail services at an empanelled hospital, public or private, anywhere in the country, with which they can walk into a hospital and obtain cashless treatment.
- The scheme has certain pre-conditions by which it picks who can avail of the health cover benefit. While in the rural areas the list is mostly categorized on lack of housing, meagre income and other deprivations, the urban list of PMJAY beneficiaries is drawn up on the basis of occupation.

Key Features of AB-PMJAY

- PM-JAY is a health assurance scheme that covers 10.74 crores households across India or approximately 50 crore Indians.
- It provides a cover of 5 lakh per family per year for medical treatment in empanelled hospitals, both public and private.
- It provides cashless and paperless service to its beneficiaries at the point of service, i.e., the hospital.
- E-cards are provided to the eligible beneficiaries based on the deprivation and occupational criteria of Socio-Economic Caste Census 2011 (SECC 2011).
- There is no restriction on family size, age or gender.
- All previous medical conditions are covered under the scheme.

- It covers 3 days of hospitalisation and 15 days of post hospitalisation, including diagnostic care and expenses on medicines.
- The scheme is portable and a beneficiary can avail medical treatment at any PM-JAY empanelled hospital outside their state and anywhere in the country.
- The Central government has decided to provide free testing and treatment of Coronavirus under the Ayushman Bharat Yojana.

Norovirus

Context:

- At least two cases of norovirus have been found in Thiruvananthapuram among lower primary school students.

Relevance:

- GS II- Health

Dimensions of the Article:

- 1. What is norovirus?
- 2. What are the symptoms?
- 3. What precautions can one take?
- 4. Treatment

What is norovirus?

- Norovirus is a highly contagious virus that is also sometimes referred to as the ‘**stomach flu**’ or the ‘**winter vomiting bug**’.
- It can be transmitted through contaminated food, water, and surfaces.
- The primary route is oral-faecal.
- It is similar to diarrhoea-inducing rotavirus and infects people across age groups.
- Disease outbreaks typically occur aboard cruise ships, in nursing homes, dormitories, and other closed spaces.
- According to the WHO, emerging evidence suggests that “norovirus infection is associated with intestinal inflammation, malnutrition and may cause long-term morbidity”.
- It adds that an estimated 685 million cases of norovirus are seen annually, including 200 million cases amongst children under 5

What are the symptoms?

- The initial symptoms of norovirus are vomiting and/or diarrhoea, which show up one or two days after exposure to the virus.
- Patients also feel nauseous, and suffer from abdominal pain, fever, headaches and body aches.
- In extreme cases, loss of fluids could lead to dehydration.

What precautions can one take?

- One may get infected multiple times as the virus has different strains.
- Norovirus is resistant to many disinfectants and can withstand heat up to 60°C.
- Therefore, merely steaming food or chlorinating water does not kill the virus.
- The virus can also survive many common hand sanitisers.
- The basic precaution is also the most obvious — repeatedly washing hands with soap after using the lavatory or changing diapers.
- It is important to wash hands carefully before eating or preparing food.

Treatment:

- The disease is self-limiting. The infection, even though it takes a lot out of the patient, normally lasts only two or three days, and most individuals who are not very young, very old, or malnourished can ride it out with sufficient rest and hydration.
- Diagnosis is done by real-time reverse transcription-polymerase chain reaction.
- No vaccines are available for the disease.
- It is important to maintain hydration in the acute phase. In extreme cases, patients have to be administered rehydration fluids intravenously.

Monkeypox Disease

- **Focus:** GS II- Health

Why in News?

- Union Health Ministry issues Guidelines to States/UTs on Management of Monkeypox Disease.
- There are no reported cases of monkey pox disease in India, as on date.

Guidelines:

- As per the Guidelines, a confirmed case is laboratory confirmed for monkeypox virus by detection of unique sequences of viral DNA either by polymerase chain reaction (PCR) and/or sequencing.
- All the clinical specimens should be transported to the Apex Laboratory of ICMR-NIV (Pune) routed through the Integrated Disease Surveillance Programme (IDSP) network of the respective district/state.
- The guidelines stresses on surveillance and rapid identification of new cases as the key public health measures for outbreak containment, mandating need to reduce the risk of human-to-human transmission.
- It explains the Infection Prevention and Control (IPC) measures, IPC at home, patient isolation and ambulance transfer strategies, additional precautions that needs to be taken care of and duration of isolation procedures.
- As per the Guidelines, contacts should be monitored at least daily for the onset of signs/symptoms for a period of 21 days (as per case definition) from the last contact with a patient or their contaminated materials during the infectious period.
- Raising awareness of risk factors under risk communication and preventive measures, the Guidelines further explain in detail about raising awareness and educating people about the measures for Monkeypox virus.

About Monkeypox virus

- The monkeypox virus is an orthopoxvirus, which is a genus of viruses that also includes the variola virus, which causes smallpox, and vaccinia virus, which was used in the smallpox vaccine.
- Monkeypox causes symptoms similar to smallpox, although they are less severe.
- While vaccination eradicated smallpox worldwide in 1980, monkeypox continues to occur in a swathe of countries in Central and West Africa, and has on occasion showed up elsewhere.
- According to the World Health Organisation (WHO), two distinct clade are identified: the West African clade and the Congo Basin clade, also known as the Central African clade.
- Monkeypox has been reported as endemic in several other central and western African countries such as: Cameroon, Central African Republic, Cote d'Ivoire, Democratic Republic of the Congo, Gabon, Liberia, Nigeria, Republic of the
- Congo, and Sierra Leone.
- However, cases have been also reported in certain non-endemic countries e.g. USA, United Kingdom, Belgium, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, Australia, Canada, Austria, Israel, Switzerland etc.

Zoonotic disease

- Monkeypox is a zoonosis, that is, a disease that is transmitted from infected animals to humans.

- According to the WHO, cases occur close to tropical rainforests inhabited by animals that carry the virus.
- Monkeypox virus infection has been detected in squirrels, Gambian poached rats, dormice, and some species of monkeys.
- Human-to-human transmission is, however, limited — the longest documented chain of transmission is six generations, meaning the last person to be infected in this chain was six links away from the original sick person, the WHO says

Transmission:

- Transmission, when it occurs, can be through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects.

Symptoms and treatment

- According to the US Centers for Disease Control and Prevention (CDC), monkeypox begins with a fever, headache, muscle aches, back ache, and exhaustion.
- It also causes the lymph nodes to swell (lymphadenopathy), which smallpox does not.
- The WHO underlines that it is important to not confuse monkeypox with chickenpox, measles, bacterial skin infections, scabies, syphilis and medication-associated allergies.
- The incubation period (time from infection to symptoms) for monkeypox is usually 7-14 days but can range from 5-21 days.
- Usually within a day to 3 days of the onset of fever, the patient develops a rash that begins on the face and spreads to other parts of the body.
- The skin eruption stage can last between 2 and 4 weeks, during which the lesions harden and become painful, fill up first with a clear fluid and then pus, and then develop scabs or crusts.
- According to the WHO, the proportion of patients who die has varied between 0 and 11% in documented cases, and has been higher among young children.

Treatment:

- There is no safe, proven treatment for monkeypox yet.
- The WHO recommends supportive treatment depending on the symptoms.
- Awareness is important for prevention and control of the infection.

Occurrence of disease

- The CDC's monkeypox overview says the infection was first discovered in 1958 following two outbreaks of a pox-like disease in colonies of monkeys kept for research — which led to the name 'monkeypox'.
- The first human case was recorded in 1970 in the Democratic Republic of the Congo (DRC) during a period of intensified effort to eliminate smallpox.
- According to the WHO, 15 countries on four continents have so far reported confirmed cases of monkeypox in humans.
- Locally acquired cases have been confirmed in the DRC (which has the largest incidence of the infection in the world), Central African Republic, Republic of the Congo, Gabon, Cameroon, Nigeria, Côte d'Ivoire, Liberia, and Sierra Leone.

Polio***Context:***

- Recently, Vaccine-Derived Poliovirus (VDPV) was recently found in sewage samples from Kolkata, Bengal, during environmental surveillance.
- A VDPV is a weakened poliovirus strain that was initially included in OPV (Oral Poliovirus Vaccines) but has since evolved to act more like the wild or naturally occurring virus.

Relevance:

- GS II- Health

Dimensions of the Article:

- 1. What is Polio?
- 2. Polio in India
- 3. India's Pulse Polio Programme
- 4. Steps taken by the Government to maintain polio free status in India

What is Polio?

- The World Health Organization (WHO) defines polio or poliomyelitis as “a highly infectious viral disease, which mainly affects young children.”
- The virus is transmitted by person-to-person, spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g., contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and can cause paralysis.
- Initial symptoms of polio include fever, fatigue, headache, vomiting, stiffness in the neck, and pain in the limbs.
- In a small proportion of cases, the disease causes paralysis, which is often permanent.
- There is no cure for polio, it can only be prevented by immunization.
- There are three individual and immunologically distinct wild poliovirus strains:
 - 1. Wild Poliovirus type 1 (WPV1)
 - 2. Wild Poliovirus type 2 (WPV2)
 - 3. Wild Poliovirus type 3 (WPV3)
- Symptomatically, all three strains are identical, in that they cause irreversible paralysis or even death.
- However, there are genetic and virological differences, which make these three strains separate viruses which must each be eradicated individually

Polio in India

- India received polio-free certification by the WHO in 2014, after three years of zero cases.
- This achievement has been spurred by the successful pulse polio campaign in which all children were administered polio drops.
- The last case due to wild poliovirus in the country was detected on 13th January 2011.

India's Pulse Polio Programme

- With the global initiative of eradication of polio in 1988 following World Health Assembly resolution in 1988, Pulse Polio Immunization programme was launched in India in 1995. Children in the age group of 0-5 years administered polio drops during National and Sub-national immunization rounds (in high-risk areas) every year.
- The Pulse Polio Initiative was started with an objective of achieving hundred per cent coverage under Oral Polio Vaccine.
- It aimed to immunize children through improved social mobilization, plan mop-up operations in areas where poliovirus has almost disappeared and maintain high level of morale among the public.

Steps taken by the Government to maintain polio free status in India

- Maintaining community immunity through high quality National and Sub National polio rounds each year.
- An extremely high level of vigilance through surveillance across the country for any importation or circulation of poliovirus and VDPV is being maintained.
- All States and Union Territories in the country have developed a Rapid Response Team (RRT) to respond to any polio outbreak in the country.

- To reduce risk of importation from neighbouring countries, international border vaccination is being provided through continuous vaccination teams (CVT) to all eligible children round the clock.
- Government of India has issued guidelines for mandatory requirement of polio vaccination to all international travelers before their departure from India to polio affected countries namely: Afghanistan, Nigeria, Pakistan, Ethiopia, Kenya, Somalia, Syria and Cameroon.

World Mental Health Report: WHO

Context:

- Recently the World Health Organization (WHO) released the World Mental Health Report.

Relevance:

- GS II- Health

Dimensions of the Article:

- 1. Highlights of the report
- 2. What is Mental health?
- 3. Challenges related to Mental Health
- 4. World Health Organization (WHO)

Highlights of the report

- WHO has called for more action to be taken to address mental health issues around the world, particularly now that the 'Covid-19' pandemic has been linked to poor mental health.
- In 2019, **about a billion people, 14%** of whom were adolescents, were suffering from mental health problems. For some, this led to suicide, which accounted for one in every 100 fatalities, with more than half occurring before the age of 50.
- In the first year of the pandemic, depression and anxiety **increased by 25% (2020)**.
- The **Comprehensive Mental Health Action Plan 2013–2030** has been endorsed by all 194 WHO member states, although progress has been slow.
- Apart from the pandemic, other structural dangers to mental health include social and economic inequality, public health emergencies, conflict, and the climate catastrophe.
- People who suffer from mental illnesses **live two decades less than the normal population**.
- Mental health services are still difficult to come by.
- **71 percent of psychosis** sufferers worldwide do not receive treatment.
- **70 per cent of psychosis patients** are treated in high-income countries, while just **12 percent are treated in low-income ones**.
- To accelerate progress on the Comprehensive Mental Health Action Plan 2013–2030, the WHO report identifies three major "paths to transformation."
- These include increased investment in mental health, transforming surroundings that influence mental health, such as families, communities, schools, workplaces, and health care facilities, and diversifying mental health care to improve quality.

What is Mental health?

- **According to the World Health Organization (WHO)**, mental health is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.'
- Like Physical health, Mental health is also important at every stage of life, from childhood and adolescence through adulthood.

Challenges related to Mental Health

- According to India's latest National Mental Health Survey 2015-16, an estimated 150 million people in the country require mental health care treatments.
- Psychiatrists (0.3), nurses (0.12), psychologists (0.07), and social workers (0.07) make up a **small percentage of India's mental health workforce** (per 100,000 population) (0.07).
- Due to a **low financial resource allocation** of just over 1% of GDP on healthcare, public access to inexpensive mental healthcare has been hampered.
- **Poor awareness** of mental disease symptoms, societal stigma, and abandonment of mentally ill people, especially the elderly and indigent, leads to social isolation and family members' reluctance to seek treatment for the patient. As a result, there is a significant **treatment gap**, which exacerbates a person's current mental illness.
- There is a **need for effective mental health rehabilitation** following therapy, which is currently lacking.
- Because mental health issues tend to worsen during economic downturns, particular attention is required during these times.

World Health Organization (WHO)

- The World Health Organization (WHO) is a **specialized agency** of the United Nations responsible for international public health.
- It is headquartered in **Geneva, Switzerland**.
- Its main objective is ensuring "the attainment by all peoples of the highest possible level of health."
- The WHO's broad mandate includes advocating for universal healthcare, monitoring public health risks, coordinating responses to health emergencies, and promoting human health and well-being.
- The World Health Assembly (WHA), composed of representatives from all 194 member states, serves as the agency's supreme decision-making body.

Drug Resistant Typhoid

- **Context:**
- According to a study published in The Lancet Microbe journal, the bacteria that cause typhoid fever are growing more and more resistant to some of the most popular antibiotics.
- Each year, typhoid fever results in about 100,000 fatalities and 11 million infections. South Asia accounts for 70% of the global disease burden.

Relevance:

- GS II- Health

Dimensions of the Article:

- 1. About Typhoid
- 2. About Drug Resistance

About Typhoid:

- Typhoid fever is a life-threatening systemic infection caused by the bacterium *Salmonella enterica* serovar Typhi (commonly known as *Salmonella Typhi*) carried only by humans – no other animal carrier has been found.

Transmission:

- Typhoid fever is transmitted by the faecal-oral route, through ingestion of contaminated food or water.
- Without treatment, about one person in 20 who recovers from typhoid becomes a 'carrier'.
- Despite having no symptoms of illness, they have bacteria in their faeces and urine, and can infect others for a period of about three months (sometimes up to one year).

- Travellers are at high risk of developing typhoid fever in many typhoid endemic countries. This includes parts of Asia (especially India, Pakistan, and Bangladesh), Africa, the Caribbean, Central and South America, and the Middle East.

Symptoms:

- Symptoms and signs of typhoid range from mild to severe, can last for about one month without treatment, and may include: fever, fatigue or tiredness, malaise (general feeling of unwellness), sore throat, persistent cough, headache.

Treatment:

- Typhoid fever requires prompt treatment with antibiotics.

About Drug Resistance

- The advent of drug-resistant strains of bacteria threatens the efficacy of medicines for treating typhoid fever.
- Because antibiotics or other medications intended to kill these bacteria no longer work on resistant strains of bacteria, they can spread quickly and endanger public health.
- Since 2000, multi-drug-resistant (MDR) typhoid has declined steadily in Bangladesh and India, remained low in Nepal, and increased slightly in Pakistan.
- However, these are being replaced by strains resistant to other antibiotics, according to the study conducted by researchers from Stanford University, Christian Medical College Vellore and other institutions.

About Multi drug resistance

- Multiple drug resistance (MDR), multidrug resistance or multi-resistance is antimicrobial resistance shown by a species of microorganism to multiple antimicrobial drugs.
- The types most threatening to public health are MDR bacteria that resist multiple antibiotics; other types include MDR viruses, parasites (resistant to multiple antifungals, antiviral, and antiparasitic drugs of a wide chemical variety).
- Recognizing different degrees of MDR, the terms extensively drug resistant (XDR) and pandrug-resistant (PDR) have been introduced.

Ayushman Bharat Digital Mission

- ***Focus:*** GS II- Health

Why in News?

- The National Health Authority (NHA) will be hosting its first ever open-to-all hackathon series to drive ideation and innovations around the different building blocks in the Ayushman Bharat Digital Mission (ABDM) ecosystem.

About Ayushman Bharat Digital Mission:

- Ayushman Bharat Digital Mission will help connect digital health solutions across the country.
- All Indians will get a digital health ID under this scheme.
- Every citizen's health record will now be digitally secure.
- The health ID will be used as health account.
- Personal health records can be linked to this account and viewed with the help of a mobile application.
- Ayushman Bharat Digital Mission will provide reliable data, leading to better treatment and savings for patients too.
- **The National Health Authority (NHA)** will be the implementing agency of Ayushman Bharat Digital Mission (ABDM).

Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)

- Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) is the flagship scheme of the Union government as a part of the Indian government's National Health Policy.
- AB-PMJAY provides a health cover of up to Rs. 5 lakh a family a year, for secondary and tertiary care hospitalization, to India's bottom 40% poor and vulnerable population.
- The programme was launched in September, 2018.
- AB-PMJAY is under the aegis of Ministry of Health and Family Welfare.
- The PM Jan Arogya Yojana beneficiaries get an e-card that can be used to avail services at an empanelled hospital, public or private, anywhere in the country, with which they can walk into a hospital and obtain cashless treatment.
- The scheme has certain pre-conditions by which it picks who can avail of the health cover benefit. While in the rural areas the list is mostly categorized on lack of housing, meagre income and other deprivations, the urban list of PMJAY beneficiaries is drawn up on the basis of occupation.

Key Features of AB-PMJAY

- PM-JAY is a health assurance scheme that covers 10.74 crores households across India or approximately 50 crore Indians.
- It provides a cover of 5 lakh per family per year for medical treatment in empanelled hospitals, both public and private.
- It provides cashless and paperless service to its beneficiaries at the point of service, i.e., the hospital.
- E-cards are provided to the eligible beneficiaries based on the deprivation and occupational criteria of Socio-Economic Caste Census 2011 (SECC 2011).
- There is no restriction on family size, age or gender.
- All previous medical conditions are covered under the scheme.
- It covers 3 days of hospitalisation and 15 days of post hospitalisation, including diagnostic care and expenses on medicines.
- The scheme is portable and a beneficiary can avail medical treatment at any PM-JAY empanelled hospital outside their state and anywhere in the country.
- The Central government has decided to provide free testing and treatment of Coronavirus under the Ayushman Bharat Yojana.

Vertical Launch Short Range Surface to Air Missile***Context:***

- Recently, Vertical Launch Short Range Surface to Air Missile (VL-SRSAM) was successfully flight-tested by Defence Research & Development Organisation (DRDO) and the Indian Navy from an Indian Naval Ship at Integrated Test Range (ITR), Chandipur off the coast of Odisha.

Relevance:

- GS III- Defence Technology

Dimensions of the Article:

- 1. About VL-SRSAM
- 2. Features of VL-SRSAM

About VL-SRSAM:

- For the deployment of Indian Naval warships, VL-SRSAM has been created and developed cooperatively by three Defense Research and Development Organization facilities.
- The missile is capable of destroying a variety of close-range aerial threats, including sea-skimming targets.
- Sea skimming is a technique many anti-ship missiles and some fighter or strike aircraft use to avoid radar and infrared detection.

Design:

- The missile is intended to hit fast-moving aerial targets with a range of 40 to 50 km and an altitude of roughly 15 km.
- Its design is based on the Beyond Visual Range Air to Air Missile known as the Astra.
- The Defence Research and Development Organization created the Astra ("weapon") air-to-air all-weather beyond-visual-range active radar homing missile for India.
- A Beyond-Visual-Range (BVR) missile is an air-to-air missile that can engage targets at distances of at least 20 nautical miles.

Features of VL-SRSAM:

- **Cruciform wings:** They are four small wings arranged like a cross on four sides and give the projective a stable aerodynamic posture.
- **Thrust Vectoring:** It is the ability to change the direction of the thrust from its engine, control the angular velocity and the attitude of the missile.
- Thrust is the force which moves an aircraft through the air.
- **Canisterised system:** The inside environment is controlled, thus making its transport and storage easier and improving the shelf life of weapons.

Next-generation Corvettes

- **Context:**
- The Defence Acquisition Council (DAC) has given the Acceptance of Necessity (AoN) for several capital acquisition projects of the Indian defence forces. This includes the procurement of next-generation Corvettes for the Indian Navy at an approximate cost of Rs 36,000 crore.

Relevance:

- GS III- Defence

Dimensions of the Article:

1. What is a Corvette?
2. What kind of Corvettes does the Indian Navy possess?
3. What new capabilities will the new generation Corvettes have?

What is a Corvette?

- A Corvette is the smallest class of naval ships and it falls below the warship class of a frigate.
- These are highly agile ships and are categorised as missile boats, anti-submarine ships, coastal patrol crafts and fast attack naval vessels.
- The word corvette itself is derived from French and Dutch origin.
- Corvettes date back to the 18th and the 19th century when they were extensively used in the naval warfare duels that were fought at high seas.
- However, these were powered by sails and masts, and disappeared for a while when steam powered naval ships made their appearance.
- During World War II, the term Corvette was used to describe vessels which had anti-submarine roles assigned to them.
- Modern Corvettes can go up to 2,000 tons in displacement which helps in keeping them agile.

What kind of Corvettes does the Indian Navy possess?

- The Indian Navy at present has the Kamorta Class Corvettes, which are also known as Project 28.
- These ships have an anti-submarine role and are manufactured at Garden Reach Shipbuilders and Engineers in Kolkata.
- The four Kamorta Class Corvettes that the Indian Navy possesses are named INS Kamorta, INS Kadmat, INS Kiltan and INS Kavaratti.
- The first of these was commissioned in 2014 and the last one in 2020.

What new capabilities will the new generation Corvettes have?

- The next-generation Corvettes will be manufactured for various roles like surveillance missions, escort operations, deterrence, surface action group operations, search and attack and coastal defence.
- It is worth noting that these roles will be in addition to the anti-submarine roles being already performed by the existing Corvettes in the Navy.
- Corvettes will be constructed based on new in-house design of the Indian Navy using latest technology of ship buildings.
- They would contribute to further the government's initiative of Security and Growth for all in the region (SAGAR).

Implications of India's New VPN Rules

- **Context**
- The Indian government's cybersecurity agency enacted a law requiring Virtual Private Network (VPN) providers to capture and store their customers' records for 180 days. It also required these companies to gather and preserve client data for a period of up to five years. It also required that any recorded cybercrime be reported to the CERT-In within six hours of the offence.
- According to Surfshark VPN, taking such drastic action that affects the privacy of millions of individuals in India will most likely be counterproductive and severely harm the country's IT sector's growth.
- According to the Ministry of Electronics and Information Technology, the laws apply to "any company whatsoever," regardless of whether it has a physical presence in India or not, as long as it provides services to Indian users.

Relevance

- GS-III: Awareness in the fields of IT, Space, Computers, Robotics, Nano-technology, Biotechnology and issues relating to Intellectual Property Rights.

Dimensions of the Article

- Why do individuals utilize VPN services?
- What exactly does the new CERT-IN directive state?
- Who will be affected by the new regulations?
- What Exactly Is a Virtual Server, And What Are Its Applications?
- Effect of the Bill Have on India's IT Sector
- Way Forward

Why do individuals utilize VPN services?

- **Secure encryption:** A VPN connection masks the internet data transmission and protects it from prying eyes. Anyone with network access and a desire to read unencrypted data can do so. Hackers and cyber thieves are unable to decode this data when using a VPN.
- **Hide the location:** VPN servers simply work as proxies on the internet. Exact location cannot be established since the demographic location data is obtained from a server in another nation.
- **Data privacy is protected:** The majority of VPN providers do not keep logs of the actions. Some providers, on the other hand, record the behaviour but do not share it with third parties. As a result, any potential record of the user behaviour is permanently hidden.
- **Regional Web Content Accessibility:** Regional web material is not necessarily available from everywhere. Services and websites frequently contain content that is only available in specific regions of the world.
- **Secure data transfer:** If we work from home, we may need to access critical files on the company's network. This type of information necessitates a secure connection for security reasons. A VPN connection is frequently necessary to obtain network access.

What exactly does the new CERT-IN directive state?

- VPN providers must keep validated client names, physical addresses, email addresses, phone numbers, and the purpose they are using the service, as well as the dates they use it and their “ownership pattern.”
- Additionally, Cert is requesting that VPN providers preserve a record of the IP and email addresses used by customers to register for the service, as well as the date of registration.
- Most crucially, VPN providers will be required to record all IP addresses assigned to a client as well as a list of IP addresses that its customers frequently use.

Who will be affected by the new regulations?

- Data centres, virtual private server (VPS) providers, cloud service providers, virtual asset service providers, virtual asset exchange providers, custodial wallet providers, and government organisations are all covered by these guidelines.
- Firms who provide Internet proxy-like services using VPN technology are also subject to the new legislation. Corporate entities are not being investigated.

What Exactly Is a Virtual Server, And What Are Its Applications?

- A virtual server is a server environment that is constructed on top of a real server.
- It mimics the operation of a dedicated physical server.
- The virtual twin operates similarly to a real server, running applications and utilising actual server resources. A single physical server can support several virtual servers.
- Virtualizing servers’ aids in the reallocation of resources for shifting workloads.
- Converting a single physical server into numerous virtual servers enables organisations to make better use of processing power and resources by running various operating systems and applications on a single partitioned server.
- Running numerous operating systems and apps on a single physical computer saves money since it takes up less space and hardware.
- Virtualisation also saves money since the cost of operating a virtual server infrastructure is lower than that of a physical server infrastructure.
- Because the operating system and applications are contained within a virtual machine, virtual servers are believed to be more secure than physical server architecture. This aids in the containment of security assaults and bad behaviour within the virtual machine.

Can Server Migration and Virtualization Assist VPN Providers in Skirting the New

- ***Regulations?***
- The Ministry of Electronics and Information Technology (MeiTY) FAQs on cybersecurity guidelines provide some clarification on relocation and virtualization.
- It states that the laws apply to “any entity whatever” in the case of cyber events and cyber security incidents, whether or not they have a physical presence in India, as long as they provide services to Indian consumers.
- Service providers that do not have a physical presence in India but provide services to Indian users must designate a point of contact to communicate with CERT-In.
- Furthermore, logs may be held outside of India as long as the companies meet their commitment to provide logs to CERT-In within a reasonable time frame.
- VPN businesses, on the other hand, feel that by relocating their physical servers to countries other than India, they will be in compliance with the rules that govern their activities.

Effect of the Bill Have on India's IT Sector

- VPN providers leaving India is bad for the country’s developing IT sector. Taking such drastic action, which has a significant impact on the privacy of millions of individuals in India, will most certainly be

counterproductive and severely harm the country's IT sector's growth, the business stated in a press release last week.

- It calculated that 254.9 million Indians' accounts have been compromised since 2004, and expressed worry that gathering large volumes of data inside Indian jurisdiction without effective protection methods may result in even more breaches.
- The corporation located in the Netherlands also stated that they have never received a comparable instruction on preserving client logs from any other government in the globe.

Way Forward

- According to experts, governments and their agencies may easily abuse such a restriction, and it may actually drive such people to the dark and deep web, which are far more difficult to regulate than VPN services.
- It is also unclear whether the Centre would use this to take action against people who use VPNs to access content that is restricted in India.

From Higher to Hire Education

Context

- Higher education policy planners and regulators are busy giving shape to the digital university, which was announced in the 2022-23 Union Budget. Though still on the drawing board, the digital university is expected to offer any number, kind, and type of course without limits on intake, in a hybrid or 'physical plus digital' mode. It proclaims to provide equitable access to quality higher education and employability-enhancing skill development programmes to all.

Relevance

- GS II: Education, Human Resources.
- GS III : Science and Technology- Developments and their Applications and Effects in Everyday Life.

Dimensions of the Article

- Recent Developments
- Challenges associated with the New Developments
- No Substitute for Teacher
- Way Forward

Recent developments

- Higher education in India is getting metamorphosed into 'hire education'. In the process, higher education is now getting delivered by for-profit entities, in contravention of the long-held belief that education at all levels must be provided on a not-for-profit basis.
- Initiatives like, the UGC has relaxing norms for setting up open universities, reduction in land size requirement, are likely to open the floodgates for private open universities.
- Simultaneously, more universities are being enabled to offer courses in the distance, open and online mode, in collaboration with EdTech startups and unicorns.
- Certain MOOC courses are made mandatory for students who can also accumulate credits & deposit them in Academic Bank of Credit to be exchanged for a degree at a later stage. Thus introducing informal modes of education.
- Information Communication and Entertainment technologies, augmented and VR, AI, ML are being touted as technologies with immense possibilities for transforming the delivery of education.

Challenges associated with the New Developments

- Informal modes of education are supposedly bidding obituary to brick- &- mortar universities. Such learning could entirely terminate face-to-face formal education.

- Tech-based digital learning encompassed by EdTech startups are projected as the future of higher education, especially after the conviction projected by 2 years of COVID-19 compelled e-learning. With this higher education, will transform into a virtual space.
- Evidence of massive learning losses due to the digital divide, but primarily due to the inherent limitations of technology, are being regarded as mere teething troubles.
- How successful and effective would such programmes be? No one knows. Going by the evidence, employers across the world are generally negatively disposed towards this.
- Most recruiters prefer to hire those who have graduated in face-to-face mode.
- No wonder even the strongest proponents of online and virtual education feel that such programmes be subjected to stricter oversight, tighter regulations, and rigorous processes to ensure high standards and robust quality control.
- Given the fact that the quality of higher education is inversely proportional to the intensity of regulation, designing and developing an efficient and effective regulatory mechanism often proves more challenging than imagined.
- The open and distance mode of learning, including the latest model based on digital and virtual delivery, often finds favour with the government due to cost considerations.
- It is, however, wrong to assume that these are economical and cost-effective. To be effective, they not only require massive capital investment in infrastructure, but also demand a significantly higher recurring expenses on content development and their continuous updating and upgradation.

No substitute for teachers

- Technology can be effectively leveraged as a quality-enhancement tool. It would, however, be a blunder to regard technology-mediated teaching-learning as an alternative to face-to-face education. Technology can supplement and not substitute to this.

Way Forward

- No world-class universities are planning to cut down their faculty cost or their number any time soon. On the contrary, they envision hiring more of them to attain greater excellence. India cannot be an exception to this. While higher education must indeed embrace and keep pace with the advancements in technology, it is a lot more than borrowing content and delivering them online or outsourcing content. This would render India a consumer of knowledge. We must, instead, be focused on exploiting our full potential to emerge as a producer of knowledge and providers of the global workforce.

ENVIRONMENT AND ECOLOGY

NTPC's Biodiversity Policy

Focus: GS III- Environment and Ecology

Why in News?

- Recently, National Thermal Power Corporation Limited (NTPC Ltd.) has issued a renewed Biodiversity Policy 2022 to establish a comprehensive vision and guiding principle for conservation, restoration, and enhancement of biodiversity.

Objectives of the Policy***Support Professionals in Achieving Biodiversity Targets:***

- The policy is designed to assist all NTPC Group professionals in contributing to the achievement of the targets set in this field.
- NTPC has always been conscious of avoiding operations in areas with the highest biodiversity value and judiciously selecting project sites.

Mainstreaming the Concept of Biodiversity:

- The fundamental goal is to integrate biodiversity into the NTPC value chain.
- It also seeks to use a cautious approach to biodiversity management in all decision-making processes to ensure the Earth's diversity of life in and around NTPC's business units.

Dealing with Local Threats:

- The policy also aims to adopt systematic consideration of local threats to biodiversity beyond the company's business activities.

National Thermal Power Corporation

- It is an Indian statutory corporation engaged in the generation of electricity and allied activities.
- It is incorporated under the Companies Act 1956 and is under the jurisdiction of the Ministry of Power.
- NTPC Ltd. is a central Public Sector Undertaking (PSU) under the Ministry of Power.
- It is India's largest energy conglomerate with roots planted way back in 1975 to accelerate power development in India.
- Aim: To provide reliable power and related solutions in an economical, efficient and environment-friendly manner, driven by innovation and agility.
- It became a Maharatna company in May 2010.
- It is located in New Delhi.

Sela Macaque

Context:

- A new species of old-world monkey recorded from Arunachal Pradesh has been named after Sela Pass, which is a strategic mountain pass at 13,700 ft above sea level, and the New Species has been named Sela Macaque.
- It was identified and analysed by a team of experts from the Zoological Survey of India (ZSI) and the University of Calcutta.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. About Sela macaque
- 2. About the Zoological Survey of India (ZSI)
- 3. Publications and other works of the ZSI

About Sela macaque

- The Sela macaque was geographically isolated from the Arunachal macaque (*Macaca munzala*) of Tawang district, according to phylogenetic analysis.
- It was discovered to be genetically distinct from the other monkey species reported from this region,
- **Phylogenetics** refers to the evolutionary development and diversity of a species or group of organisms.
- The Sela macaque is genetically related to the Arunachal macaque, according to the study.
- Physically, the two have a lot in common, such as a comparable build and long dorsal body hair.
- Both animals have troops that either avoid or are accustomed to being in close contact to people.
- There are some distinct morphological traits to differentiate the two species.
- While the Sela macaque has a pale face and brown coat, the Arunachal macaque has a dark face and dark brown coat.
- Sela macaque has a tail longer than the Tibetan macaque, Assamese macaque, Arunachal macaque and the white-cheeked macaque but shorter than the bonnet macaque and toque macaque.

- Sela macaque belongs to the sinica species-group of Macaca, but it differs from all other members of this group through attributes such as brown collar hair and muzzle, thick brown hair around the neck and the absence of chin whiskers.
- Sela macaque is a major cause of crop loss in the West Kameng district of the State.

About the Zoological Survey of India (ZSI)

- The Zoological Survey of India (ZSI) was founded in 1916 by the Ministry of Environment, Forest and Climate Change (MoFCC) as premier Indian organisation in zoological research and studies to promote the survey, exploration and research of the fauna in the country.
- It originated as a Zoological Section of the Indian Museum in Kolkata and its headquarters is in Kolkata.
- It has been declared as a designated repository for the National Zoological Collection as per Section 39 of the National Biodiversity Act, 2002.

The primary objectives of the ZSI are:

- To promote the survey, exploration, research, and documentation on various aspects of animal taxonomy in the Indian subcontinent. It also seeks the advancement of knowledge on animal taxonomy.
- To Make a status survey of the threatened and endemic species.
- Preparation of Red Data Book, Fauna of India, and Fauna of States.
- Bio-ecological studies on important communities/species.
- Preparation of database for the recorded species of the country.
- Maintenance and Development of National Zoological Collections.

Publications and other works of the ZSI

- ZSI publishes the Red Data Book on Indian Animals. It was first published in 1983 and is similar to the Red Data Book published by IUCN.
- Publication of results including Fauna of India, Fauna of States, and Fauna of Conservation Areas.
- It works for the development of Environmental Information System (ENVIS) and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Centres.
- It Conducts collaborative research programs on "Biodiversity" with other organisations in India and abroad.
- The ZSI is also involved in Geographic Information System (GIS) and Remote Sensing studies on recorded animal diversity as well as on threatened species.

Posidonia Australis: World's Largest Plant

Context:

- The world's largest plant has recently been discovered off the West Coast of Australia: a seagrass 180 km in length.

Relevance:

- GS III- Environment and Ecology
- ***Dimensions of the Article:***
- 1. About Ribbon weed or Posidonia australis
- 2. So how remarkable is this plant's size?
- 3. How did it grow, and survive for, so long?
- 4. Significance of Seagrass

About Ribbon weed or Posidonia australis

- The ribbon weed, or Posidonia australis, has been discovered in Shark Bay by a group of researchers from Flinders University and The University of Western Australia.

- These researchers have also found that the plant is 4,500 years old, is sterile, has double the number of chromosomes than other similar plants, and has managed to survive the volatile atmosphere of the shallow Shark Bay.

So how remarkable is this plant's size?

- The ribbon weed covers an area of 20,000 hectares.
- The next on the podium, the second largest plant, is the clonal colony of a quaking Aspen tree in Utah, which covers 43.6 hectares.
- The largest tree in India, the Great Banyan in Howrah's Botanical Garden, covers 1.41 hectares.

How did it grow, and survive for, so long?

- Sometime in the Harappan era, a plant took root in the Shark Bay.
- Then it kept spreading through its rhizomes, overcoming everything in its way, and here we are today.
- Ribbon weed rhizomes can usually grow to around 35cm per year.
- The researchers found that the ribbon weed cannot spread its seeds, something that helps plants overcome environmental threats.
- Also, Shark Bay sees fluctuations in temperature and salinity and gets a lot of light, conditions challenging for any plant.
- Yet the ribbon weed has managed to survive, and a part of the reason may be that it is a polyploid – instead of taking half-half genome from both parents, it took 100 per cent, something not unheard of in plants. Therefore, this ribbon weed has twice the number of chromosomes other plants of the same variety have.

Significance of Seagrass

- Because seagrass performs a vital role in the environment, and if some of it is hardy, it is good news for everyone in a world threatened by climate change.
- In India, seagrass is found in many coastal areas, most notably in Gulf of Mannar and Palk Strait.
- Apart from being home to a variety of small organisms, seagrass trap sediments and prevent water from getting muddy, absorb carbon from the atmosphere, and prevent coastal erosion.

Eublepharis pictus

- **Context:**
- A gecko found in Visakhapatnam in 2017, then thought to belong to a known species, has now been identified as a member of a new species.

Relevance:

- GS II- Environment and Ecology

Dimensions of the Article:

- 1. About Eublepharis pictus
- 2. Conservation status

About Eublepharis pictus

- The species, Eublepharis pictus, also known as the Painted Leopard Gecko, has been described in the journal Evolutionary Systematics.
- Now, a phylogenetic study and morphological comparisons have distinguished it as a new species, which appears to be common in the forests of Andhra Pradesh and Odisha.
- The gecko genus Eublepharis now has 7 species.
- Before Eublepharis pictus, Mirza had also previously described Eublepharis satpuraensis.

Conservation status

- The species occurs outside protected areas.
- The authors pointed out that most leopard geckos are killed when encountered, and called for raising awareness about the fact that the species is actually harmless

Eco-sensitive zones*Context:*

- The Supreme Court has directed that every protected forest, national park and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum one km starting from their demarcated boundaries.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. What are Eco-Sensitive Zones?
- 2. Activities Allowed in ESZs
- 3. How are they demarcated?

What are Eco-Sensitive Zones?

- Eco Sensitive Zones are fragile areas around protected areas declared by the Ministry of Environment, Forest, and Climate Change (MoEFCC).
- They are areas notified by the MoEFCC around Protected Areas, National Parks and Wildlife Sanctuaries.
- The purpose of declaring ESZs is to create some kind of “shock absorbers” to the protected areas by regulating and managing the activities around such areas.
- Among activities prohibited in the eco-sensitive zone are hydroelectric projects, brick kilns, commercial use of firewood and discharge of untreated effluents in natural water bodies or land areas.
- No new commercial hotels and resorts shall be permitted within 1 km of the boundary of the protected area or up to the extent of the eco-sensitive zone,

Activities Allowed in ESZs

- **Prohibited activities:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.
- **Regulated activities:** Felling of trees, establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.
- **Permitted activities:** Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, adoption of green technology for all activities.

How are they demarcated?

- The term "Eco-Sensitive Zones" is not mentioned in the Environment (Protection) Act of 1986.
- Section 3(2)(v) of the Act, on the other hand, states that the Central Government has the authority to limit the areas in which any industry, operation, or process, or class of industries, operations, or processes, may be carried out or not, subject to certain safeguards.

- Besides to Rule 5(1) of the Environment (Protection) Rules, 1986 stipulates that the central government has the authority to ban or restrict the location of industries and the conduct of certain operations or processes based on specified factors.

Ethanol blending

- Focus:** GS III- Environment and Ecology, GS-III: Industry and Infrastructure

Why in News?

- India has achieved the target of 10 percent ethanol blending, 5 months ahead of schedule

What is Ethanol fuel?

- Ethanol fuel is ethyl alcohol, the same type of alcohol found in alcoholic beverages, used as fuel.
- It is most often used as a motor fuel, mainly as a biofuel additive for gasoline.
- Ethanol is commonly made from biomass such as corn or sugarcane.
- Bioethanol is a form of renewable energy that can be produced from agricultural feedstocks.
- It can be made from very common crops such as hemp, sugarcane, potato, cassava and corn.
- There has been considerable debate about how useful bioethanol is in replacing gasoline.
- Concerns about its production and use relate to increased food prices due to the large amount of arable land required for crops, as well as the energy and pollution balance of the whole cycle of ethanol production, especially from corn.

Ethanol Blended Petrol Programme (EBP)

- Ethanol Blended Petrol (EBP) programme was launched in 2003- and this initiative is pursued aggressively in the last 4 to 5 years to reduce import dependence of crude oil as well as mitigate environmental pollution.
- The Ethanol Blending Programme (EBP) seeks to achieve blending of Ethanol with motor spirit with a view to reducing pollution, conserve foreign exchange and increase value addition in the sugar industry enabling them to clear cane price arrears of farmers.
- Although the Government of India decided to launch EBP programme in 2003 for supply of 5% ethanol blended Petrol, it later scaled up blending targets from 5% to 10% under the Ethanol Blending Programme (EBP).
- The Government of India has also advanced the target for 20% ethanol blending in petrol (also called E20) to 2025 from 2030.
- Currently, 8.5% of ethanol is blended with petrol in India.

Roadmap for Ethanol Blending in India by 2025

- The central government has released an expert committee report on the Roadmap for Ethanol Blending in India by 2025 that proposes a gradual rollout of ethanol-blended fuel to achieve E10 fuel supply by April 2022 and phased rollout of E20 from April 2023 to April 2025.
- The Ministry of Petroleum & Natural Gas (MoP&NG) had instituted an Expert Group to study the issues such as pricing of ethanol, matching pace of the automobile industry to manufacture vehicles with new engines with the supply of ethanol, pricing of such vehicles, fuel efficiency of different engines etc.

Advantages of Ethanol Blending

- Use of ethanol-blended petrol decreases emissions such as carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx).
- The unregulated carbonyl emissions, such as acetaldehyde emission were, however, higher with E10 and E20 compared to normal petrol. However, these emissions were relatively lower.
- Increased use of ethanol can help reduce the oil import bill. India's net import cost stands at USD 551 billion in 2020-21. The E20 program can save the country USD 4 billion (Rs 30,000 crore) per annum.
- The oil companies procure ethanol from farmers that benefits the sugarcane farmers.

- Further, the government plans to encourage use of water-saving crops, such as maize, to produce ethanol, and production of ethanol from non-food feedstock.

World's first Fishing Cat Census done in Chilika

Context:

- The Chilika Lake, Asia's largest brackish water lagoon, has 176 fishing cats, according to a census done by the Chilika Development Authority (CDA) in collaboration with the Fishing Cat Project (TFCP).

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. About fishing cat

About fishing cat:

- The fishing cat is a feline with a powerful build and stocky legs, almost twice the size of a conventional house cat.
- It is a strong swimmer who dives into the water regularly to catch fish, as its name suggests.
- It has been observed diving for fish.
- It is nocturnal and feeds on frogs, crabs, snakes, birds, and carcasses of larger animals in addition to fish.
- It can breed all year, however the peak breeding season in India is believed to be between March and May.

Conservation status:

- **IUCN Red List:** Endangered
- **CITES:** Appendix II
- **Indian Wildlife (Protection) Act, 1972:** Schedule I

Threats:

- The degradation of wetlands, which are the fishing cat's preferred habitat, is one of the most serious dangers species faces.
- The majority of India's wetlands are under threat as a result of human settlement, agricultural drainage, pollution, and wood-cutting.
- The reduction of the fishing cat's principal prey-fish as a result of unsustainable fishing techniques is another issue.
- It is also poached for its skin on rare occasions

Carbon bombs

Context:

- A group of environmentalists, lawyers, and activists have come together to identify and 'defuse carbon bombs'– coal, oil and gas projects that have the potential to contribute significantly to global warming.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. What are carbon bombs?
- 2. What is the plan for 'defusing' carbon bombs?

What are carbon bombs?

- It is an oil or gas project that will result in at least a billion tonnes of CO₂ emissions over its lifetime.
- Whenever coal, oil, or gas is extracted it results in pollution and environmental degradation.
- Further, carbon emissions take place in particularly large amounts when fuel is burned.
- In total, around 195 such projects have been identified world over, including in the US, Russia, West Asia, Australia and India.
- According to the report, they will collectively overshoot the limit of emissions that had been agreed to in the Paris Agreement of 2015.
- The agreement was to contain the global rise in average temperature to 2 °C and strive for the target of 1.5 °C as compared to pre-industrial levels – when the widespread use of coal for industry in the beginning in the mid-19th century led to a rapid rise in average global temperatures.

What is the plan for 'defusing' carbon bombs?

- The network working towards this goal is called Leave It In the Ground Initiative (LINGO).
- Its mission is to "leave fossil fuels in the ground and learn to live without them."
- It believes the root of climate change is the burning of fossil fuels, and the 100% use of renewable energy sources is the solution.
- On its website, it has listed carbon bomb projects from all over the world.
- This includes the Carmichael Coal Project owned by the Adani Group, Gevra Coal Mines in Chhattisgarh owned by Coal India, and Rajmahal Coal Mines in eastern Jharkhand owned by Eastern Coalfields.
- LINGO aims to organise ground support for protesting such projects, challenge them through litigation, and conduct analysis and studies for the same

Green jobs***Context:***

- At an event to mark World Environment Day recently, Prime Minister spoke about India's consistent efforts to combat climate change. During his speech, he also mentioned India's efforts to create green jobs

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. What are 'green jobs'?
- 2. India and 'green jobs'
- 3. Scenario across the world
- 4. The way forward

What are 'green jobs'?

- 'Green jobs' refer to a class of jobs that directly have a positive impact on the planet, and contribute to the overall environmental welfare.
- Jobs involving renewable energy, conservation of resources, ensuring energy efficient means are categorised under the same.
- In all, they're aimed at reducing the negative environmental impact of economic sectors and furthering the process of creating a low-carbon economy.
- The idea behind a low-carbon economy or decarbonisation is fairly simple — it is about maintaining a sustainable economy, one that doesn't lead to vast emissions of greenhouse gasses, especially carbon dioxide

India and 'green jobs'

- The Skill Council for Green Jobs was launched by the Union government on October 1, 2015.
- Aligned to the National Skill Development Missions, it was set up to be a not-for-profit, independent, industry-led initiative.
- Promoted by the Ministry of New and Renewable Energy (MNRE) and the Confederation of Indian Industry (CII), the council aims to help manufacturers and other service providers in India's 'green business' sector to implement industry-led, collaborative skills push the country on the path to truly realising the real potential and significance of 'green jobs'.
- According to the Skill Council for Green Jobs, awareness and training individuals regarding green jobs skills will ensure limiting greenhouse gas emissions, minimising waste and pollution, protect and restore ecosystems, support adaptation to the effects of climate change.

Scenario across the world

- The United Nations Environment Programme's 2019 Emissions Gap report dictates that it is essential for greenhouse gas emissions to reduce by 7.6% per annum between the years 2020 to 2030 in order to reach the target that was set during the Paris Agreement.
- Failing to meet the same would consequently result in a failure to effectively combat global warming. Consequently, a decarbonised economy plays a key role in ensuring a greener, safer, healthier and more sustainable planet to inhabit.
- Globally too, there have been multiple initiatives to further the 'green jobs' sector.
- The International Labour Organisation, the International Trade Union Confederation, the United Nations Environment Programme and the International Employers Organisation collectively launched the Green Jobs Initiative in 2008, aimed at bettering placements, training and creating opportunities for individuals to work in 'green jobs'.
- The United Kingdom is likely to have nearly 694,000 green jobs by the year 2030, projecting an overall 11% increase per year in the green economy.

The way forward

- According to the ILO, India moving to a green economy by the next decade would alone create about 3 million jobs in the renewable energy sector.
- The renewable energy sector created about 47,000 new jobs in 2017 accounting for a 12% increase in just the span of a year, they said.
- For India 'green jobs' can prove immensely useful to the country with sectors like renewable energy, waste management, green transport and urban farming all having great potential to employ a trained workforce. An integrated, systematic approach, experts believe, is crucial to ensuring this.

Environmental Performance Index (EPI) 2022

Context:

- India has reacted to the EPI, 2022, a report that ranks India last (along with Nigeria) among 180 countries in terms of managing climate change, environmental health, and ecosystem vitality.
- The Environment Ministry of India has claimed that some of the indicators that were used for the index are 'extrapolated and based on the surmises and unscientific methods'.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

1. About Environmental Performance Index 2022
2. Environmental Performance Index 2022: India's score

About Environmental Performance Index 2022

- It is recently published by the Yale Center for Environment Law and Policy and the Center for International Earth science Information Network, Columbia University.
- The report has ranked the 180 countries in Environmental Performance Index 2022 on 40 performance indicators across the 11 issue categories on environmental health, climate change performance, and ecosystem vitality.
- The analysis of the environmental performance by the 180 countries for the Environmental Performance Index 2022 is being done by the researchers at the Earth Institute of Yale and Columbia University.
- As per the report, the countries are scored and ranked in the Environmental performance Index 2022 on the basis of the environmental performance with the use of the most recent year's data available.
- The scores are calculated to observe how they have changed over the previous years.

Top 5 Countries:

- 1. Denmark
- 2. United Kingdom
- 3. Finland
- 4. Malta
- 5. Sweden

Environmental Performance Index 2022: India's score

- In Environmental Performance Index 2022 India is ranked at 180 with a total score of 18.9 and in the last decade, the performance has gone down by 0.6 scores.
- The country has scored the lowest among 180 countries in the index that evaluated the environmental performance of these countries.
- India's neighboring nations have done better including Pakistan which is ranked at 176 and Bangladesh at 177

The ***three primary categories*** under which the scores have been given are

- o Ecosystem vitality
- o Climate change performance
- o Environmental health
- India has score 19.3 on the ecosystem vitality on the index and the change in the area in the last decade in -2.
- The country has score 12.5 on health, meaning poor air quality, drinking water and sanitation.
- India's waste management in terms of ocean plastics, solid wastes and recycling is also poor.

Microplastics

- ***Context:***
- For the first time, microplastics have been found in freshly fallen snow in Antarctica. The pollutant, scientists argue, poses a growing threat to the region's ecosystem and could increase the melting of ice and snow.
- ***Relevance:***
- GS III- Environment and Ecology
- ***Dimensions of the Article:***
- 1. What are microplastics?
- 2. Health hazard of microplastics
- 3. How did they reach Antarctica?
- 4. Effect of microplastics on Environment:
- ***What are Microplastics?***

- Microplastics are tiny plastic debris that are smaller than 5 mm in length, tinier than even a grain of rice.

There are two types of microplastics:

- ***Primary microplastics*** are tiny particles that are purposely designed as such for commercial use, like in cosmetics, nurdles-plastic pellets used in industrial manufacturing and in fibres from synthetic textiles like nylon.
- ***Secondary microplastics*** are formed through the degradation of larger plastic items like bottles, fishing nets and plastic bags. This occurs through exposure to the environment, like radiation from the sun, wind and ocean waves.

Health hazard of microplastics

- It is not yet clear if these microplastics can cross over from the blood stream to deposit in organs and cause diseases.
- The report point out that the human placenta has shown to be permeable to tiny particles of polystyrene (50, 80 and 24 nanometre beads).
- Experiments on rats where its lungs were exposed to polystyrene spheres (20 nanometre) led to translocation of the nanoparticles to the placental and fetal tissue.
- Oral administration of microplastics in rats led to accumulation of these in the liver, kidney and gut.
- Further studies have to be carried out to really assess the impact of plastics on humans.

How did they reach Antarctica?

- The study found an average of 29 particles of microplastic per litre of melted snow.
- These particles, due to their light weight and low density, might have travelled through air from more than 6,000 km away.
- However, researchers argued that there is also a possibility that the human presence in Antarctica created a microplastic 'footprint'.
- Of the 13 different plastic types found, the most common was polyethylene terephthalate (PET), a type of plastic used in everyday items such as clothes, plastic bottles, packaging etc. PET was found in 79 per cent of all samples.
- The most likely sources of the airborne microplastic are local research stations, due to the clothing worn by staff, broken fragments of plastic equipment and mismanaged waste.
- There was a much larger concentration of microplastics (nearly 3 times higher) in the samples next to local base camps

Effect of Microplastics on Environment:

- While microplastics have been found across the world, from the world's deepest ***ocean floors*** to the peak of Mount Everest, researchers say that this is the first time that they have been found in freshly fallen snow in Antarctica.
- It shows that the spread of microplastics is so widespread, that even the remotest and least habitable places in the world are now infested by these particles.
- The presence of these particles can pose a huge threat to Antarctica's distinctive ecosystem.
- Microplastics are not biodegradable and once they are found in the environment, they begin to accumulate.
- They can be toxic for plants and animals.
- The report claims that ingestion of microplastics by various life forms in the region, from microorganisms like zooplankton to larger predators like king penguins can disrupt their usual biological processes and negatively impact the entire Antarctic food chain.
- The presence of microplastics in Antarctica can also worsen the impact of climate change.

- Ice sheets and glaciers are already rapidly melting, and the report suggests that the microplastics deposited in ice and snow can accelerate the melting of the cryosphere — regions where water is in solid form, like the planet's North and South Poles.
- Dark-coloured microplastics, which constituted 55% of the samples collected in Aves' study, are even more harmful than lighter colours, as they are better at absorbing sunlight and retain more heat.

Single use plastic

- **Context:**
- The Centre has banned the use of 'single-use plastic' from July 1. The Ministry for Environment, Forest and Climate Change had issued a gazette notification last year announcing the ban, and has now defined a list of items that will be banned from next month.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article

- 1. About Single use plastic
- 2. What are the items being banned?
- 3. How will the ban be enforced?
- 4. Impacts of Single Use Plastic (SUP)
- 5. Challenges with banning single use plastic
- 6. Measures taken so far in India

About Single use plastic

- Single-use plastics, often also referred to as disposable plastics, are commonly used for plastic packaging and include items intended to be used only once before they are thrown away or recycled.
- These include, among other items, grocery bags, food packaging, bottles, straws, containers, stirrers, styrofoam cups or plates etc.

What are the items being banned?

- The items on which the Central Pollution Control Board (CPCB) have announced a ban are earbuds; balloon sticks; candy and ice-cream sticks; cutlery items including plates, cups, glasses, forks, spoons, knives, trays; sweet boxes; invitation cards; cigarette packs; PVC banners measuring under 100 microns; and polystyrene for decoration.
- The Ministry had already banned polythene bags under 75 microns in September 2021, expanding the limit from the earlier 50 microns.
- From December, the ban will be extended to polythene bags under 120 microns.
- Ministry officials have explained that the ban is being introduced in phases to give manufacturers time to shift to thicker polythene bags that are easier to recycle.
- While manufacturers can use the same machine for 50- and 75-micron bags, the machinery will need to be upgraded for 120 microns.
- According to the Plastic Waste Management Rules, 2016, there is also a complete ban on sachets using plastic material for storing, packing or selling gutkha, tobacco and pan masala.

How will the ban be enforced?

- The ban will be monitored by the CPCB from the Centre, and by the State Pollution Control Boards (SPCBs) that will report to the Centre regularly.
- Directions have been issued at national, state and local levels — for example, to all petrochemical industries — to not supply raw materials to industries engaged in the banned items.
- Directions have also been issued to SPCBs and Pollution Control Committees to modify or revoke consent to operate issued under the Air/Water Act to industries engaged in single-use plastic items.

- Local authorities have been directed to issue fresh commercial licenses with the condition that SUP items will not be sold on their premises, and existing commercial licences will be cancelled if they are found to be selling these items.

Punishment:

- Those found violating the ban can be penalised under the Environment Protection Act 1986 – which allows for imprisonment up to 5 years, or a penalty up to Rs 1 lakh, or both.
- Violators can also be asked to pay Environmental Damage Compensation by the SPCB. In addition, there are municipal laws on plastic waste, with their own penal codes.

Impacts of Single Use Plastic (SUP)

- **Environmental pollution:** A staggering total of it remains uncollected causing choking of drainage and river systems, littering of the marine ecosystem, soil and water pollution, ingestion by stray animals, and open air burning leading to adverse impact on environment.
- **Disposal issue:** They do not biodegrade instead they slowly break down into smaller pieces of plastic called microplastics which again causes more issues. It can take up to thousands of years for plastic bags and Styrofoam containers to decompose.
- **Human health:** The toxins, poisons and persistent pollutants present in some of these plastic products leach and enter human bodies where they cause several diseases, including cancer and can damage nervous systems, lungs and reproductive organs. Humans may be consuming anywhere from 39,000 to 52,000 microplastic particles a year through fish (contaminated with microplastics) alone.
- **Marine life & climate change:** Plastic waste is at epidemic proportions in the world's oceans with an estimated 100 million tonnes dumped there to date.
- Plastic kills an estimated 1 million sea birds every year and affects around 700 species which get infected by ingesting plastics. Single-use plastics make up on average 49% of beach litter.
- **Increasing Carbon dioxide:** If the production, disposal and incineration of plastic continues on its present-day growth trajectory, by 2030 these global emissions could reach 1.34 gigatonne per year — equivalent to more than 295 coal-based power plants of 500-MW capacity.
- **More impact on developing countries:** The ubiquitous plastic seems to be a curse for the third world countries, because poor countries, especially in Asia, not only have their own plastic dump to deal with but also the plastic trash that lands on their shores from developed countries.

Challenges with banning single use plastic

- **No immediate alternatives:** It is difficult to ban the product which is of immense use to the public, without thinking of a sustainable and equally utilitarian alternative product.
- For e.g. Single-use plastic helps keep medical equipment sterile and safe to use.
- There is no alternative to plastic yet and sectors like pharmaceuticals, hardware, toys, food processing, food delivery will be in total chaos.
- While there is increased awareness in urban area, the challenge will be to find a suitable cost effective alternatives in tier II and tier III towns and remote locations.
- **Impact on packaging industry:** It impacts most industries since SUP forms part of packaging and hence is linked to all industries directly or indirectly.
- If plastic sachets made from multi-layered packaging are banned, it can disrupt supplies of key products such as biscuits, salt and milk etc which has made life easier for the poor in terms of affordable small packs and convenience.
- Ban will increase the price of most FMCG products as manufacturers would try and shift to alternative packaging (which can be costlier).
- **Loss of jobs and revenue:** Ban can lead to loss of revenue as well as job loss in the plastic manufacturing industry.

- India's plastic industry officially employs around 4 million people across 30,000 processing units, out of which 90% are small to medium-sized businesses.
- Plastics also support thousands employed informally such as ragpickers as well as street food and market vendors who are reliant on single-use plastic.
- **Attitudinal change:** It is difficult as no one takes the responsibility for the single use plastic thrown by them and behaviour change towards the shift from non-using of single use plastic is difficult.

Measures taken so far in India

- Plastic Waste Management Rules, 2016 state that every local body has to be responsible for setting up infrastructure for segregation, collection, processing, and disposal of plastic waste.
- Plastic Waste Management (Amendment) Rules 2018 introduced the concept of Extended Producer Responsibility (EPR).
- Ban on Single-Use Plastics in a bid to free India of single-use plastics by 2022.
- World Environment Day, 2018 hosted in India, the world leaders vowed to "Beat Plastic Pollution" & eliminate its use completely.

Renewables 2022 Global Status Report

Context:

- Recently the Renewables 2022 Global Status Report (GSR 2022) was released by REN21 (Renewable Energy Policy Network for the 21st Century).

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. About Renewables 2022 Global Status Report (GSR 2022)
- 2. Global Overview of the report
- 3. India's Performance

About Renewables 2022 Global Status Report (GSR 2022)

- The Renewables 2022 Global Status Report documents the progress made in the renewable energy sector.
- The Global Status Report on Renewable Energy in 2022 records the renewable energy sector's progress.
- It emphasises the advantages of a renewable-energy-based economy and society, such as the possibility to develop more diverse and equitable energy governance through localised energy generation and value chains.
- Energy independence and security are better in countries where renewables account for a bigger proportion of overall energy use.

About REN21

- REN21 is a global network of actors involved in renewable energy.
- It includes scientists, governments such as India's, non-governmental organisations and members of the industry who collated data on renewable energy installations, markets, investments and policies in countries across the world.

Global Overview of the report:

- This report warns that the global clean energy transition is not taking place, making it doubtful that the world will fulfil important climate targets this decade.

- Despite the fact that many more governments have pledged to net zero greenhouse gas emissions by 2021, most countries have returned to pursuing new sources of fossil fuels and burning even more coal, oil, and natural gas in response to the energy crisis.
- GSR 2022 presents a world map of renewable energy shares by country for the first time, highlighting development in some of the major countries.
- In the lead-up to the United Nations Climate Change Conference (COP26) in November 2021, a record 135 countries pledged to achieve net zero greenhouse gas emissions by 2050.
- Only 84 of these countries, however, had renewable energy targets that applied to the entire economy, and only 36 had 100% renewable energy targets.

India's Performance:

- After China and Russia, **India placed third in terms of renewable energy installations** in 2021.
- In 2021, India added 843 MW of hydroelectric capacity, bringing the total capacity to 45.3 GW.
- India was the **second-largest market for new solar PV capacity in Asia, and the third-largest globally** (13 GW of additions in 2021).
- For the first time, it surpassed Germany (59.2 GW) for **fourth place in total installations** (60.4 GW).
- **India was ranked third in the world for total installed wind power capacity** (40.1 GW), behind China, the United States, and Germany.

Chambal River

Context:

- Recently, the Madhya Pradesh government has proposed to open 292 hectares for mining in five stretches on **Chambal and its tributary Parvati rivers**.
- The decision was made to relieve the forest department of the burden of spending too much time, money, and effort battling illegal mining in the

National Chambal Sanctuary.

- Since 2006, sand mining has been prohibited in the sanctuary.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. About Chambal River
- 2. About National Chambal Sanctuary

About Chambal River

- The Chambal River is a tributary of the Yamuna River in central India, and thus forms part of the greater Gangetic drainage system.
- The river flows north-northeast through Madhya Pradesh, running for a time through Rajasthan, then forming the boundary between Rajasthan and Madhya Pradesh before turning southeast to join the Yamuna in Uttar Pradesh state.
- The perennial Chambal originates at Janapav, south of Mhow town, near Manpur Indore, on the south slope of the Vindhya Range in Madhya Pradesh.
- The Chambal and its tributaries drain the Malwa region of northwestern Madhya Pradesh, while its tributary, the Banas, which rises in the Aravalli Range, drains southeastern Rajasthan.
- It ends a confluence of five rivers, including the Chambal, Kwari, Yamuna, Sind, Pahuj, at Pachnada near Bhareh in Uttar Pradesh state.

- The Chambal River is considered pollution free, and hosts an amazing riverine faunal assemblage including 2 species of crocodilians – the mugger and gharial, 8 species of freshwater turtles, smooth-coated otters, gangetic river dolphins, skimmers, black-bellied terns, sarus cranes and black-necked storks, amongst others.

About National Chambal Sanctuary

- The National Chambal Sanctuary lies over Sheopur, Morena and Bhind districts of Madhya Pradesh, spread across a length of over 400 kilometers.
- It is home to 75% population of the naturally living population of the Gharials.
- These species are categorized under the Critically Endangered species of India.
- The sanctuary also harbors national aquatic animal i.e. the freshwater dolphins, nine species of freshwater turtles and more than 180 species of migratory birds.
- Located on the Chambal River near the tri-point of Rajasthan, Madhya Pradesh and Uttar Pradesh, it was first declared in Madhya Pradesh in 1978, and now constitutes a long narrow eco-reserve co-administered by the three states.
- Within the sanctuary, the pristine Chambal River cuts through mazes of ravines and hills with many sandy beaches.
- The National Chambal Sanctuary is listed as an Important Bird Area (IBA) and is a proposed Ramsar site.

Keibul Lamjao National Park

Context:

- Activists surrounding the Keibul Lamjao National Park (KLNP) in Manipur have now taken up the cudgels to ensure that the government does not shift the proposed heritage park from the approved site.

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

1. Keibul Lamjao National Park (KLNP)
2. Key details

Keibul Lamjao National Park (KLNP)

- The KLNP is a national park in the Indian state of Manipur's Bishnupur district.
- It is the only floating park in the world, covering an area of 40 km², and is a crucial component of Loktak Lake in North East India.
- The national park is characterized by floating decomposed plant material locally called Phumdi at the south-eastern side of the Loktak Lake, which has been declared a Ramsar site.
- It was established in 1966 as a wildlife sanctuary to protect the Eld's deer's natural habitat, which is in risk of extinction.
- It was declared a national park in 1977.

Key details

- The last remaining brow-antlered deer (*Rucervus eldii eldii*), one of the most endangered species in the world, could be found in KLNP.
- Locally, it is known as Sangai.
- The majority of phumdis, or floating swamps, cannot support the animal's weight, therefore it is actually in danger of losing its habitat.

- It was thought to be extinct in 1951, but naturalist and British tea grower Edward Pritchard Gee found it in 1953.

Wetlands Conservation

Context:

- According to a new report, **wetland conservation** should feature as an independent topic of discussion in the negotiations at the upcoming biodiversity and climate change conferences for effective carbon sequestration.
- Carbon sequestration is the long-term storage of carbon in plants, soils, geologic formations, and the ocean.

Relevance:

- GS-III: Environment and Ecology (Conservation of Environment, Conventions regarding conservation of ecology)

Dimensions of the Article:

- 1. Five suggested targets by Wetlands International to be achieved by 2030
- 2. What are wetlands?
- 3. Importance of Wetlands
- 4. Wetland disturbances

Five suggested targets by Wetlands International to be achieved by 2030

- Experts from the Wetlands International, a global non-profit, in a new white paper suggested five global, science-based conservation efforts to protect and restore wetlands.
- 1. The remaining, undrained peatland carbon stores should be kept intact and 10 million hectares of drained peatlands need should be restored.
- 2. The Global mangrove cover of 20 %.
- 3. The preservation of free-flowing rivers and floodplains, along with enhancement of restoring the floodplain ecosystem and its function in the area.
- 4. The 10% increase of the West African river Volta in the tidal flats area.
- 5. Identification of 50 % of the 7,000 critically important sites along the flyways to be brought under favourable management.

What are wetlands?

- A wetland is a distinct ecosystem that is flooded by water, either permanently or seasonally, where oxygen-free processes prevail.
- The primary factor that distinguishes wetlands from other land forms or water bodies is the characteristic vegetation of aquatic plants, adapted to the unique hydric soil.
- The main wetland types are swamp, marsh, bog, and fen; sub-types include mangrove forest, carr, pocosin, floodplains, mire, vernal pool, sink, and many others.
- The largest wetlands include the Amazon River basin, the West Siberian Plain, the Pantanal in South America, and the Sundarbans in the Ganges-Brahmaputra delta.

Importance of Wetlands

Wetlands play a number of functions such as:

- Water storage (flood control)
- Groundwater replenishment
- Shoreline stabilisation and storm protection
- Water purification
- Reservoirs of biodiversity
- Pollination

- Wetland products
- Cultural values
- Recreation and tourism
- Climate change mitigation and adaptation
- Wetlands are also considered the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal life.

Wetland disturbances

- Wetlands, the functions and services they provide as well as their flora and fauna, can be affected by several types of disturbances - the predominant ones include the following:
- Enrichment/eutrophication
- Organic loading and reduced dissolved oxygen
- Contaminant toxicity
- Acidification
- Salinization
- Sedimentation
- Altered solar input (turbidity/shade)
- Vegetation removal
- Thermal alteration
- Dehydration/aridification
- Inundation/flooding
- Habitat fragmentation
- Other human presence

Human Activities that affect Wetlands:

- Drainage
- Development
- Over-grazing
- Mining
- Unsustainable water use
- Wetlands have historically been the victim of large draining efforts for real estate development, or flooding for use as recreational lakes or hydropower generation.

Odisha's Mo Bus

- **Context:**
- Mo Bus, the bus service of Odisha's Capital Region Urban Transport (CRUT) authority, has been recognised by the United Nations as one of 10 global recipients of its annual Public Service Awards for 2022.
- The public transport service has been recognised for its role in "promoting gender-responsive public services to achieve the SDGs (Sustainable Development Goals)"

Relevance:

- GS III- Environment and Ecology

Dimensions of the Article:

- 1. Mo Bus service
- 2. About UN Public Service Award

Mo Bus service

- The Mo Bus service was launched on November 6, 2018.

- It aimed to ensure transformation of the urban public transport scenario in the city and its hinterland through use of smart technology, service benchmarking and customer satisfaction.
- The buses are designed to integrate smart technologies such as free on-board Wi-Fi service, digital announcements, surveillance cameras, and electronic ticketing.
- CRUT says that to increase women's participation in the workforce, and to make women riders feel safer, it is committed to ensuring that 50% of Mo Bus Guides (conductors) are women.

About UN Public Service Award

- The UN describes its Public Service Awards as the "most prestigious international recognition of excellence in public service".
- The first Awards ceremony was held in 2003, and the UN has since received "an increasing number of submissions from all around the world".
- It is intended to reward the creative achievements and contributions of public service institutions that lead to a more effective and responsive public administration in countries worldwide.
- Through an annual competition, the UN Public Service Awards promotes the role, professionalism and visibility of public service.

Green Hydrogen

Why in News?

- A new report released today by NITI Aayog highlights that green hydrogen can substantially spur industrial decarbonisation and economic growth for India in the coming decades.

About Green Hydrogen

- The technology for green hydrogen is based on the generation of hydrogen through electrolysis.
- It is a universal, light and highly reactive fuel.
- Under this method, electrical current is used to separate the hydrogen from the oxygen in the water.
- In case the electricity is produced through renewable sources of energy, the hydrogen would be green hydrogen.
- Hydrogen is the most abundant element on earth. Also, the global demand for hydrogen as a fuel has become thrice of what it was in 1975. It is also the only source of energy that only emits water vapour and leaves no residue in the air.
- Hydrogen has been used to fuel cars, airships and spaceships since the beginning of the 19th century.

Green Hydrogen Advantages

- Hydrogen is a 100 % sustainable source: Green hydrogen does not emit polluting gases in its combustion or production processes.
- Green Hydrogen is a gas and thus would be easily stored. It can be subsequently used for other purposes just following its production.
- It can be easily transformed into electricity or synthetic gas which can then be used for domestic, commercial, industrial purposes.
- Green hydrogen can be mixed with the natural gas, up to a maximum of 20 %.
- It can also be transported through the same pipes and in the same infrastructure.

Green Hydrogen Disadvantages

- Renewable sources, which would be used to generate green hydrogen through electrolysis, are extremely expensive currently taking the cost of the whole production to sky heights.
- The production of green hydrogen requires more energy than other fuels.
- Green hydrogen is an extremely volatile and flammable element. It needs extensive safety measures to prevent leakage and explosions.

Green Hydrogen Importance

- Hydrogen is being used across the United States, Russia, China, France and Germany. Countries like Japan desire to become a hydrogen economy in future.
- Green hydrogen can in future be used for
- Electricity and drinking water generation, energy storage, transportation etc.
- Green hydrogen can be used to provide water to the crew members in space stations.
- Energy storage- Compressed hydrogen tanks can store the energy longer and are easier to handle than lithium-ion batteries as they are lighter.
- Transport and mobility- Hydrogen can be used in heavy transport, aviation and maritime transport

Burmagomphus chaukulensis

- **Context:**
- Recently, a rare dragonfly, *Burmagomphus chaukulensis* was spotted in Kerala.

Relevance:

- GS II- Species in News

Key Findings:

- This is a dragonfly of genus *Burmagomphus*, which is represented by three species – *B. Cauvericus*, *B. Pyramidalis* and *B. Laidlawi*.
- While *B. laidlawi* is found throughout the Western Ghats,
- *B. cauvericus* is more restricted in its distribution.
- *B. pyramidalis* is found in the Western Ghats as well as in Peninsular India.
- The Western and Eastern Himalayas are home to all other species in the genus.
- The patterns on the lateral thorax and the unusual shape of the anal appendages distinguish the new species from its congeners.
- The Western Ghats are known to be home to this species.

Chelonoidis phantasticus**Context:**

- *Chelonoidis phantasticus* is a giant tortoise species believed to be extinct for more than a century. Now, a surviving member has been identified.

Relevance:

- GS III- Science and Technology

Dimensions of the Article:

- 1. About *Chelonoidis phantasticus*:
- 2. Habitat and Distribution
- 3. IUCN Status

About *Chelonoidis phantasticus*:

- A giant tortoise, found alive in 2019, has been confirmed to belong a Galápagos species long believed extinct.
- Named Fernanda after her Fernandina Island home, the tortoise is the first of her species, *Chelonoidis phantasticus*, to be identified in more than a century.
- Researchers has reported the confirmation in a paper in Nature Communications Biology.
- *Chelonoidis phantasticus* means “fantastic giant tortoise”.

- Commonly called the Fernandina Island Galápagos giant tortoise, the species was so far known only from a single individual, collected in 1906.

Habitat and Distribution

- *Chelonoidis phantasticus* is a saddle backed tortoise adapted for browsing on higher vegetation such as *Opuntia* trees.
- Fernandina habitat is largely dry xeric brushland at lower elevations, but much of that habitat has been destroyed by extensive recent lava flows.
- The small area of remaining higher-quality habitat is mesic and at higher elevations.

IUCN Status

- *Chelonoidis phantasticus* is listed as Critically Endangered

INTERNAL SECURITY

Ex Khaan Quest 2022

Focus: GS III- Security Challenges

Why in News?

- A Multinational Peacekeeping exercise “Ex Khaan Quest 2022” featuring participation from military contingents from 16 countries has commenced in Mongolia .

Details:

- Indian Army is represented by a contingent from the **LADAKH SCOUTS**.
- The 14 day exercise is aimed at enhancing interoperability, building military to military relationships, developing peace support operations and military readiness among participating nations.
- The exercise will also enable sharing of best practices between the Armed Forces of participating nations and will include field training exercises, combat discussions, lectures and demonstration.
- The military exercise will enhance the level of defence co-operation between Indian Army and participating countries especially with the Mongolian Armed Forces which will enhance bilateral relations between the two countries.

Ex SAMPRITI-X

Focus: GS III- Security Challenges

Why in News?

- As part of the ongoing India Bangladesh bilateral defence cooperation, a joint military training exercise Ex SAMPRITI-X is being conducted at Jashore Military Station in Bangladesh from 05 June to 16 June 2022.

About Exercise SAMPRITI :

- Exercise SAMPRITI is an important bilateral defence cooperation endeavour conducted alternately by both countries which aims to strengthen and widen the aspects of interoperability and cooperation between both the armies.
- The aim of the exercise is to strengthen interoperability between the two armies and to understand each other's tactical drills and operational techniques.
- The Indian contingent of company strength is being represented by a Battalion of the DOGRA Regiment and the contingent departed by road for the exercise location.
- The exercise schedule is progressively planned in such a manner that the participants will initially get familiar with each other's organisational structure and tactical drills.

- As the exercise progresses, joint tactical exercises will be conducted wherein the joint battle drills of both contingents will be practised.
- The exercise will culminate with a final validation exercise in which troops of both armies will jointly practice a Counter-Terrorism Operation in a simulated environment.

Significance:

- During the joint military exercise Ex SAMPRITI-X, armies of both the Nations will share expertise in multiple simulated scenarios of Counter Terrorism, Humanitarian Assistance & Disaster Relief and UN Peacekeeping Force under UN mandate.
- In addition to sharing best practices and understanding each other at the tactical level, this exercise is an opportunity for greater cultural understanding to strengthen trust and cooperation between armies of both the Nations.
- The exercise will benefit both the armies by gaining from each other's vast experience which will further contribute to peace and stability in the region.

Op Sankalp

- ***Focus:*** GS III- Security challenge

Why in News?

- Indian Navy's stealth Frigate, INS Talwar is presently deployed for Op Sankalp commemorating the 3rd continuous year of Indian Navy's presence in the Gulf for protection of India's Maritime Interests.

About Op Sankalp

- In the milieu of the deteriorating security situation in the Gulf region, post attacks on merchant ships in the Gulf of Oman in June 2019, Indian Navy had commenced Maritime Security Operations, code named 'Op SANKALP', in the Gulf Region on 19 June 2019 to ensure safe passage of Indian Flag Vessels transiting through the Strait of Hormuz.
- This operation is being progressed in close coordination with all stakeholders including Ministry of Defence, Ministry of External Affairs, Ministry of Shipping, Ministry of Petroleum and Natural Gas and DG, Shipping.
- Indian Navy continues to monitor the situation in the Gulf region and is maintaining presence in the region to ensure security of our sea borne trade and the safety of Indian Flag Merchant Vessels transiting through the region.
- The Indian Navy stands committed to protection of the nation's Maritime Interests.

The Gulf of Oman

- The Gulf of Oman, northwest arm of the Arabian Sea, lies between the eastern portion of the Arabian Peninsula (Oman) and Iran.
- It is 560 km long and connects with the Persian Gulf through the Strait of Hormuz.
- It is a shipping route for the oil-producing area around the Persian Gulf.
- It offers the only entrance from the Arabian Sea and the Indian Ocean into the Persian Gulf, thus the world's major oil exporters and importers have a joint interest in its security.

Unlawful Activities (Prevention) Act, 1967 (UAPA)

- ***Context:***
- The Supreme Court recently put freeze on sedition proceedings under the Section 124A (sedition law) of the IPC for persons who have also been charged under the Unlawful Activities (Prevention) Act (UAPA) of 1967 in the same case or separately.
- This freeze has rejected bails for some journalist and JNU activists who also face charges under the UAPA (for anti-India sloganeering and activities).

Relevance:

- GS III- Security Challenges

Dimensions of the Article:

- 1. The Unlawful Activities (Prevention) Act (UAPA), 1967
- 2. Unlawful Activities Prevention Amendment Bill, 2019
- 3. Some Concerning Points about the designation of someone as terrorist
- 4. Issues with UAPA
- 5. About the Increasing UAPA cases

The Unlawful Activities (Prevention) Act (UAPA), 1967

- The Unlawful Activities (Prevention) Act (UAPA) of 1967 is an upgrade on the Terrorist and Disruptive Activities (Prevention) Act TADA (which lapsed in 1995) and the Prevention of Terrorism Act – POTA (which was repealed in 2004).
- Its main objective was to make powers available for dealing with activities directed against the integrity and sovereignty of India.
- The National Integration Council appointed a Committee on National Integration and Regionalisation to look into, the aspect of putting reasonable restrictions in the interests of the sovereignty and integrity of India.
- The agenda of the NIC limited itself to communalism, casteism and regionalism and not terrorism.
- However, the provisions of the UAPA Act contravenes the requirements of the International Covenant on Civil and Political Rights.

Unlawful Activities Prevention Amendment Bill, 2019

- The original Unlawful Activities Prevention Act, 1967, dealt with “unlawful” acts related to secession; anti-terror provisions were introduced in 2004.
- It provides special procedures to deal with terrorist activities, among other things.

Key Provisions of the Amendment

- The Bill amends the Unlawful Activities (Prevention) Act, 1967 (UAPA) and additionally empowers the government to designate individuals as terrorists on the same grounds.
- Under the Act, the central government may designate an organisation as a terrorist organisation if it:
 - commits or participates in acts of terrorism
 - prepares for terrorism
 - promotes terrorism
 - is otherwise involved in terrorism
- The word “terror” or “terrorist” is not defined.
- However, a “terrorist act” is defined as any act committed with the intent –
 - to threaten or likely to threaten the unity, integrity, security, economic security, or sovereignty of India
 - to strike terror or likely to strike terror in the people or any section of the people in India or in any foreign country
- The central government may designate an individual as a terrorist through a notification in the official gazette.
- The Bill empowers the officers of the National Investigation Agency (NIA), of the rank of Inspector or above, to investigate cases.
- Under the Act, an investigating officer can seize properties that may be connected with terrorism with prior approval of the Director General of Police.

Some Concerning Points about the designation of someone as terrorist

- The government is NOT required to give an individual an opportunity to be heard before such a designation.

- At present, legally, a person is presumed to be innocent until proven guilty.
- In this line, an individual who is convicted in a terror case is legally referred to as a 'terrorist'.
- And those suspected of being involved in terrorist activities are referred to as 'terror accused'.
- The Bill does NOT clarify the standard of proof required to establish that an individual is involved or is likely to be involved in terrorist activities.
- The Bill also does not require the filing of cases or arresting individuals while designating them as terrorists.

Issues with UAPA

- UAPA gives the state authority vague powers to detain and arrest individuals who it believes to be indulged in terrorist activities. Thus, the state gives itself more powers vis-a-vis individual liberty guaranteed under Article 21 of the Constitution.
- UAPA empowers the ruling government, under the garb of curbing terrorism, to impose indirect restriction on right of dissent which is detrimental for a developing democratic society. The right of dissent is a part and parcel of fundamental right to free speech and expression and therefore, cannot be abridged in any circumstances except for mentioned in Article 19 (2).
- UAPA can also be thought of to go against the federal structure since it neglects the authority of state police in terrorism cases, given that 'Police' is a state subject under 7th schedule of Indian Constitution.

How can the names be removed?

- Application – The Bill seeks to give the central government the power to remove a name from the schedule when an individual makes an application.
- The procedure for such an application and the process of decision-making will also be decided by the central government.
- If an application filed is rejected by the government, the Bill gives the person the right to seek a review within one month of rejection.
- Review committee – Under the amendment Bill, the central government will set up a review committee.
- It will consist of a chairperson (a retired or sitting judge of a High Court) and 3 other members.
- It will be empowered to order the government to delete the name of an individual from the schedule that lists "terrorists", if it considers the order to be flawed.
- Apart from these two avenues, the individual can also move the courts challenging the government's order.

About the Increasing UAPA cases

- According to data provided by the Ministry of Home Affairs in Parliament in March, a total of 1126 cases were registered under UAPA in 2019, a sharp rise from 897 in 2015.
- UAPA, in relaxing timelines for the state to file chargesheets and its stringent conditions for bail, gives the state more powers compared to the Indian Penal Code.
- Union Home Ministry presented data in the Rajya Sabha, based on the 2019 Crime in India Report compiled by the National Crime Records Bureau (NCRB), which showed that only 2.2 % of cases registered under the Unlawful Activities (Prevention) Act between the years 2016-2019 ended in convictions by court.
- As many as 1948 persons were arrested under the UAPA in 1226 cases registered across the country in 2019. Such cases registered in 2015-2018 stood at 897, 922, 901 and 1182 and the number of those arrested was 1128, 999, 1554 and 1421 respectively.

DISASTER MANAGEMENT

Coalition for Disaster Resilient Infrastructure

- **Focus:** GS III- Disaster Management
- **Why in News?**
- The Union Cabinet chaired by the Prime Minister has approved the categorization of the Coalition for Disaster Resilient Infrastructure (CDRI) as an 'International Organization' and signing of the Headquarters Agreement (HQA) with CDRI for granting it the exemptions, immunities and privileges as contemplated under the United Nations (Privileges & Immunities) Act, 1947.

Categorization of CDRI as an 'International Organisation' will help the CDRI in:

- Deputing experts to other countries, that are particularly vulnerable to disaster risk and / or require support for post disaster recovery and also bringing in experts from member countries to India, for similar purposes;
- Deploying funds globally and receive contributions from member countries, for CDRI activities;
- Making available technical expertise to assist countries to develop resilient infrastructure in accordance with their disaster and climate risks and resources;
- Imparting assistance to countries in adopting appropriate risk governance arrangements and strategies for resilient infrastructure;
- Rendering all possible support to member countries in upgrading their systems to ensure disaster and climate resilience of existing and future infrastructure, while aligning with the Sustainable Development Goals (SDGs), the Paris Climate Agreement and the Sendai Framework for Disaster Risk Reduction;
- Leveraging international engagement to foster disaster resilient infrastructure at home; and,
- Providing Indian scientific and technical institution as well as infrastructure developers an opportunity to interact with global experts. This will help build our own capacities and mechanisms — both in public and private sectors — to support disaster resilient infrastructure development.

About Coalition for Disaster Resilient Infrastructure:

- The Sendai Framework for Disaster Risk Reduction (SFDRR) highlights the role of improved disaster resilience, especially of infrastructure, as a cornerstone for sustainable development.
- In this context, Indian PM proposed CDRI which will act as a convening body that will pool best practices and resources from around the world for reshaping construction, transportation, energy, telecommunication and water, so that building in these core infrastructure sectors factors in natural catastrophes.
- It was launched by the Indian Prime Minister Narendra Modi at the 2019 UN Climate Action Summit in September 2019.
- According to Sendai framework, every \$1 spent in disaster risk reduction leads to gain of \$7. But developing countries face the dilemma of balancing economic investment for development vs disaster resilient infrastructure.
- CDRI could fill this gap of funds and technology and help developing countries to build disaster-resilient Infrastructure.
- The Government of India has been engaging with national governments, multilateral development banks, United Nations agencies, the private sector and academia to build the case for investing in resilient infrastructure.
- It is a collaboration of Government of India, UN Office for Disaster Risk Reduction, World Bank, the UN Development Programme and the Global Commission on Adaptation.
- The members of CDRI are Afghanistan, Australia, Bhutan, Fiji, Germany, Italy,
- Indonesia, India, Japan, Mauritius, Maldives, Mongolia, Nepal, Sri Lanka, United Kingdom and United States.

Purpose of CDRI

- The Coalition would address a common challenge of building resilience into infrastructure systems, particularly in the context of increasing disaster risk in the face of climate change.
- The Coalition would provide access to good practices to develop appropriate standards as well as regulatory mechanisms to manage infrastructure development in a manner that fosters resilience.
- The Coalition would also serve as a platform where knowledge is generated and exchanged on different aspects of disaster resilience of infrastructure.
- It will bring together a multitude of stakeholders i.e. governments, private sector, academic research institutions and international organisations.

Sendai Framework for Disaster Risk Reduction

- The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was the first major agreement of the post-2015 development agenda.
- It provides Member States with concrete actions to protect development gains from the risk of disaster.
- The Sendai Framework works hand in hand with the other 2030 Agenda agreements, including The Paris Agreement on Climate Change, The Addis Ababa Action Agenda on Financing for Development, the New Urban Agenda, and the Sustainable Development Goals.
- It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).