



WE4U IAS COACHING
UPSC MONTHLY CURRENT AFFAIRS
JUNE 2022

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MONTHLY CURRENT AFFAIRS

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1. INDIAN POLITY

1.1 Rajya Sabha Election

[News]:

The Assemblies of 4 states will elect 16 MPs to Rajya Sab

[Concept]:

Rajyasabha

- * Indian Parliament consists of Lok Sabha, Rajya Sabha and the President of India.
- * Rajya Sabha is the upper house of the parliament and is termed as House of Elders in Indian Parliament.
- * Rajya Sabha is the second chamber of the parliament and represents the states and union territories of the nation.
- * It is empowered to protect the interests of the states and union territories if there is an interference by the centre in their work.

Composition of Rajya Sabha

Maximum Strength – 250

238 represent States & Union Territories

12 are nominated by the president

Current Strength – 239 (6 Vacancies) Total – 245	225 members represent the states
	8 members represent the union territories
	12 members are nominated by the president

How are the Rajya Sabha members elected?

- * Rajya Sabha Members are elected by the elected members of state legislative assemblies using a method of proportional representation.
- * Representation of States in Rajya Sabha is not equal. It depends on its population. State with a larger population will have more number of seats in Rajya Sabha than those with a lesser population.

Rajya Sabha Elections

- * There are three types of representation in Rajya Sabha :

1. Representation of States in Rajya Sabha.

- * Members are elected by the elected members of state legislative assemblies
- * Election Principle used – Proportional Representation by means of Single Transferable Vote
- * The population of the state is a factor that decides the representation of states in Rajya Sabha

2.Representation of Union Territories in Rajya Sabha.

- * Members of Rajya Sabha belonging to Union Territories are indirectly elected by members of an electoral college, that is constituted for this purpose
- * Election Principle used – Proportional Representation by means of Single Transferable Vote
- * Out of 8 union territories, Delhi, Puducherry and Jammu and Kashmir have representation in Rajya Sabha.

3.Representation of Nominated Members in Rajya Sabha.

- * 12 people are nominated by the President in Rajya Sabha for their contribution and expertise in the fields of: Art, Literature, Science, Social Service.

1.2 Section 295A of IPC

[News].

The debate surrounding the comments by political party spokespersons have put the spotlight on the law that deals with criticism of or insult to religion.

[Concept].

Section 295(A)

- * Section 295(A) of the Indian Penal Code (IPC), punishes any speech, writings, or signs that “with premeditated and malicious intent” insult citizens’ religion or religious beliefs with a fine and imprisonment for up to three years.

SC Interpretation:

1. Ramji Lal Modi case (1957):

- * The legality of Section 295(A) was affirmed by a five-judge Bench of the Supreme Court in this case.
- * Supreme court reasoned that while Article 19(2) allows reasonable limits on freedom of speech and expression for the sake of public order.
- * The punishment under Section 295(A) deals with aggravated form of blasphemy which is committed with the malicious aim of offending the religious sensibilities of any class.

2. Superintendent, Central Prison, Fatehgarh Vs Ram Manohar Lohia case (1960):

- * It stated that the link between the speech spoken and any public disorder caused as a result of it should have a close relationship for retrieving Section 295(A) of IPC.
- * Further in 2011, it concluded that only speech that amounts to "incitement to impending unlawful action" can be punished.

- * That is, the state must meet a very high bar before using public disturbance as a justification for suppressing expression.

1.3 Governor's Power to call for a floor test

[News],

As the Maharashtra political crisis continues to play out, the Governor's powers under the Constitution to call for a floor test takes center stage.

[Concept],

About Floor Test.

- * A floor test is primarily taken to know whether the executive enjoys the confidence of the legislature.
- * This happens both in the Parliament and the State Legislative Assemblies.
- * It is a constitutional mechanism under which a Chief Minister appointed by the Governor can be asked to prove majority on the floor of the Legislative Assembly of the state.

Appointment of Chief Minister.

- * As per the Constitution, the Chief Minister is appointed by the Governor of the state.

- * When a single party secures the majority of the seats in the house, the Governor appoints the leader of the party as the Chief Minister.

Vote of confidence.

- * In case the majority is questioned, the leader of the party which claims majority has to move a vote of confidence and prove majority among those present and voting.
- * The vote is taken through physical voting, or through an electronic ballot.

In case of failing to prove majority:

- * The incumbent Chief Minister: The Chief Minister has to resign if they fail to prove their majority in the house.

Forming a government.

- * The legislature is convened, and the Speaker presides over the affairs. The governor then invites the leader of the second largest party to prove his/her majority and form a government.

If it is a newly elected government.

- * If it is a newly elected government, the House is presided over by Speaker Pro-tem, chosen by the Governor.

Constitutional provisions.

- * **Article 175(2) of the Indian Constitution.** It gives the Governor the power to summon the members of the House and call for a floor test to prove whether the incumbent government has the majority in the State Legislative Assembly (Vidhan Sabha).
- * **Article 164 of the Indian constitution.** It states that, "The council of ministers shall be collectively responsible to the Legislative Assembly of the State." And so, if they do not enjoy the Legislature's support, the Executive has to step down.
- * **Article 174.** Under provisions of this article, the Governor has the power to dissolve the Assembly at his own discretion, when the state government doesn't enjoy the majority in the House.
- * **S.R. Bommai case.** In this landmark case, the Supreme Court ruled that the refusal of the Chief Minister to undergo the floor test will be considered as the Government losing the faith of its own legislature.

1.4 Anti-defection law

[News]:

: The crisis in Maharashtra has brought the focus on anti-defection law.

[Concept]:

Anti Defection Law

Origin.

- * Aaya Ram Gaya Ram was a phrase that became popular in Indian politics after a Haryana MLA Gaya Lal changed his party thrice within the same day in 1967.
- * The anti-defection law sought to prevent such political defections which may be due to reward of office or other similar considerations.

10th Schedule.**Constitutional basis.**

- * The Tenth Schedule was inserted in the Constitution in by 52nd Amendment Act, 1985.

Lays down the Procedure.

- * 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.

Condition of Defection.

- * 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.

Applicable to:

- * The law applies to both Parliament and state assemblies.

Exceptions in Law:

- * Legislators may change their party without the risk of disqualification in certain circumstances.
- * The law allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger.
- * In such a scenario, neither the members who decide to merge, nor the ones who stay with the original party will face disqualification.

1.5 Appointment of Attorney General (A-G)**[News]:**

Attorney-General (A-G) K.K. Venugopal has been reappointed the country's top law officer for a period of three months.

[Concept]:**Attorney General (A-G) of India**

- * The Attorney General (AG) of India is a part of the Union Executive. AG is the highest law officer in the country.
- * Article 76 of the Constitution provides for the office of AG of India.

Appointment and Eligibility:

- * AG is appointed by the President on the advice of the government.
- * S/he must be a person who is qualified to be appointed a judge of the Supreme Court, i.e. s/he must be a citizen of India and must have been a judge of some high court for five years or an advocate of some high court for ten years or an eminent jurist, in the opinion of the President.
- * **Term of the Office:** Not fixed by the Constitution.
- * **Removal:** Procedures and grounds for the removal of AG are not stated in the Constitution. S/he holds office during the pleasure of the President (may be removed by the President at any time).

Duties and Functions:

- * To give advice to the Government of India (GoI) upon such legal matters, which are referred to her/him by the President.
- * To perform such other duties of a legal character that are assigned to her/him by the President.
- * To appear on behalf of the GoI in all cases in the Supreme Court or in any case in any High Court in which the GoI is concerned.
- * To represent the GoI in any reference made by the President to the Supreme Court under Article 143 (Power of the President to consult the Supreme Court) of the Constitution.

- * To discharge the functions conferred on her/him by the Constitution or any other law.

Rights and Limitations.

- * S/he has the right to speak and to take part in the proceedings of both the Houses of Parliament or their joint sitting and any committee of the Parliament of which s/he may be named a member, but without a right to vote.
- * S/he enjoys all the privileges and immunities that are available to a member of Parliament.
- * S/he does not fall in the category of government servants. S/he is not debarred from private legal practice.
- * However, s/he should not advise or hold a brief against the GoI.
- * Solicitor General of India and Additional Solicitor General of India assist the AG in fulfillment of the official responsibilities.

[Corresponding Office in the States: Advocate General (Article 165)]

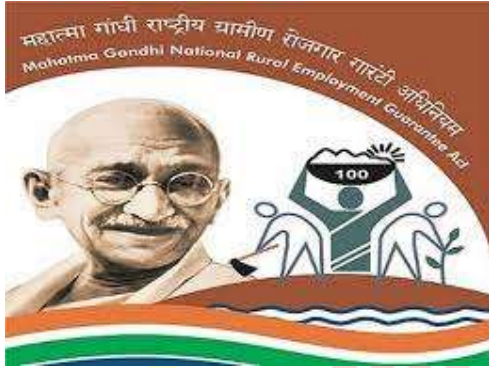
1.6 National Mobile Monitoring Software (NMMS)

[News].

The new National Mobile Monitoring Software application has problems that are eroding the right to work

[Concept].

NMMS (National Mobile Monitoring Software) app :



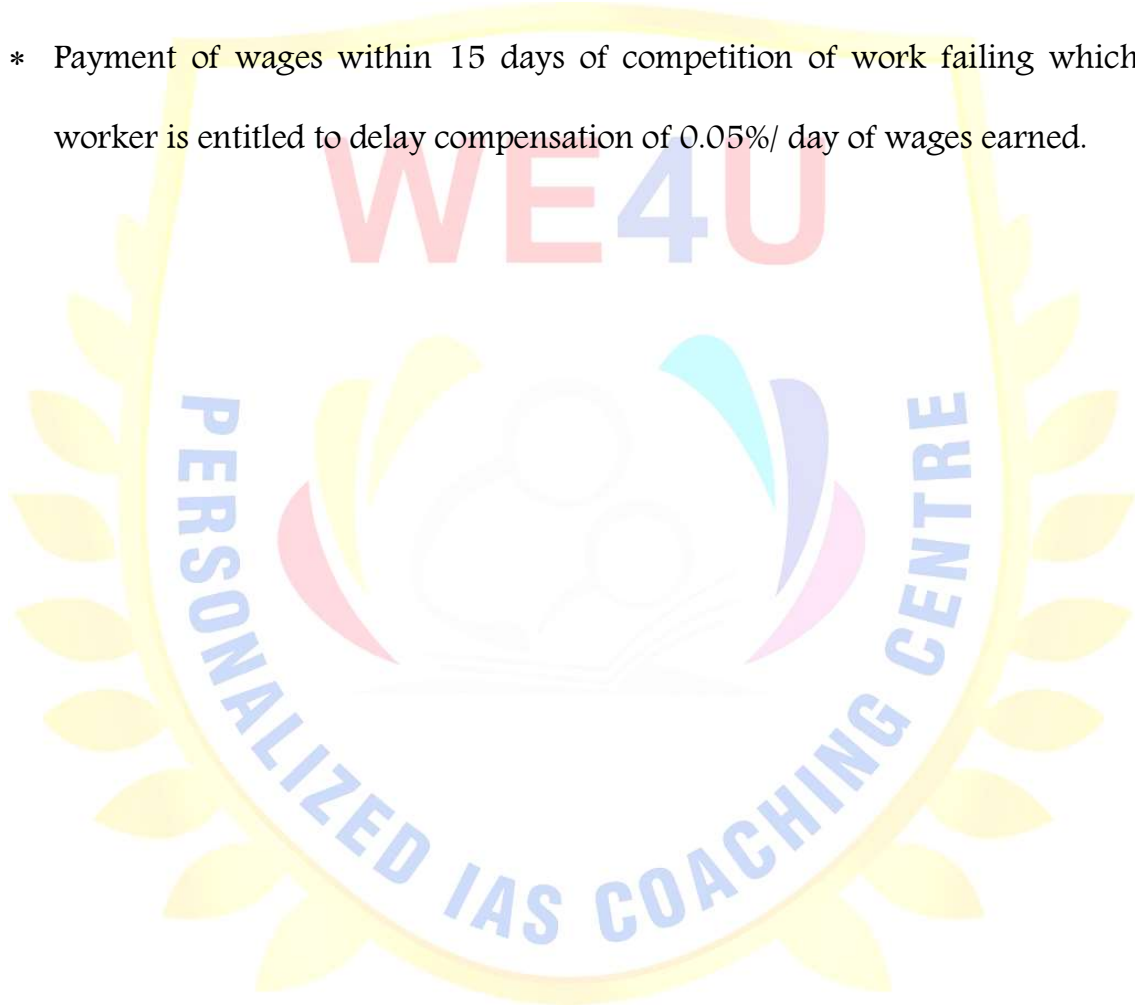
- * NMMS App permits taking real-time attendance of workers at Mahatma Gandhi NREGA worksites along with geotagged photographs.
- * Impact: This will increase citizen oversight of the programme. It also enables the potential processing of payments faster.

MGNREGA.

- * Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is an employment guarantee act. It was introduced in 2005 through the National Rural Employment Guarantee Act, 2005.
- * Under the scheme, every rural household whose adult member volunteers to do unskilled manual work is entitled to get at least 100 days of wage employment in a financial year.
- * Implementation: Ministry of Rural Development (MRD) in association with state governments monitors the implementation of the scheme.

Features of the act.

- * Demand-driven scheme: Worker to be hired when he demands and not when the Government wants it.
- * Gram Panchayat is mandated to provide employment within 15 days of work application failing which worker is entitled to unemployment allowance
- * Payment of wages within 15 days of completion of work failing which worker is entitled to delay compensation of 0.05%/ day of wages earned.



2.INDIAN ECONOMY

2.1 Black swan event

[News].

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

[Concept].

What is a “black swan” Event?

- * Unpredictable event: A black swan is a rare, unpredictable event that comes as a surprise and has a significant impact on society or the world.

Characteristics.

- * They have three distinguishing characteristics :
- * They are extremely rare and outside the realm of regular expectations;
- * They have a severe impact after they hit; and
- * They seem probable in hindsight when plausible explanations appear.

Naming “black swan”.

- * 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.
- * The lesson is that what we think are very rare events may be more common than previously thought.

Is the Covid-19 pandemic a black swan event?

- * According to Taleb, it was a "white swan" event because it was predictable.
- * Outbreaks of any pandemic are difficult to individually predict, but the possibility of one occurring and having a major impact on systems around the world was known and documented.

2.2 Primary agricultural credit societies (PACS)

[News]:

The Cabinet Committee on Economic Affairs approved computerization of Primary Agricultural Credit Societies (PACS) with the aim of increasing efficiency of PACS, bringing transparency and accountability in their operations.

[Concept]:

What are Primary Agricultural Credit Societies?

- * PACS are the ground-level cooperative credit institutions that provide short-term, and medium-term agricultural loans to the farmers for the various agricultural and farming activities.
- * It works at the grassroots gram Panchayat and village level.\

Features

- * The Primary Agricultural Credit Societies are the association of persons, unlike in the case of the Joint Stock Companies, where there is just accumulation of capital.
- * Primary Agricultural Credit Societies confers equal rights to all its members without considering their holding of share and their social standing.

Organizational Structure

General Body of PACS: Exercise the control over board as well as management.

Management Committee: Elected by the general body to perform the work as prescribed by the society's rules, acts, and by-laws.

Chairman, Vice-Chairman, and Secretary: Work for the benefit of the members by performing their roles and duties as assigned to them.

Office Staff: Responsible for performing day to day work.

Functions of PACS

- * To provide short and medium-term purpose loans to its members.
- * Borrowing an adequate amount of funds from central financial agencies.
- * Maintaining the supply of the hire light machinery for the agricultural purpose.
- * Promotes savings habits among its members.
- * To make the arrangement of supplying of the agricultural inputs. Example - seeds, fertilizers, insecticides, kerosene etc.
- * It helps its members by providing marketing facilities that could enhance the sale of their agricultural products in the market at the proper prices.

Funds of Primary Agriculture Credit Societies (PACS)

- * A Primary Agriculture Credit Societies (PACS) can raise funds for carrying out its activities by following means:
 - * By way of share capital to be raised from members and indirect govt.
 - * Share capital contribution through the apex co-operative bank and the district central co-operative bank.
 - * Deposits from members
 - * Loans
 - * Donations
 - * Entrance fee

Significance

- * Primary agriculture co-operative credit societies as financial institutions that play a very important role at the grass roots level in the development of local areas. They are multifunctional organizations that dispense a host of activities like banking, on out supplies, marketing produce and trading in consumers goods.
- * Hence effective performance of primary agriculture co-operative credit societies is crucial.

2.3 Performance Grading Index for Districts (PGI-D) for 2019-20

[News]:

The Department of School Education and Literacy, Ministry of Education (MoE) has released the Performance Grading Index for Districts (PGI-D).

[Concept]:

Performance Grading Index for Districts (PGI-D) for 2019-20

- * PGI-D assesses the performance of the school education system at the district level by creating an index for comprehensive analysis.
- * The PGI-D assessed district-level performance in school education based on the data collected from various sources, including Unified District Information System for Education Plus (UDISE +), National Achievement Survey (NAS), 2017 and data provided by respective districts.

Methodology:

- * Structure: The PGI-D structure comprises a total weightage of 600 points across 83 indicators, which are grouped under six categories.
- * Outcomes, Effective Classroom Transaction, Infrastructure Facilities & Student's Entitlements, School Safety & Child Protection, Digital Learning and Governance Process.
- * Two categories — digital learning and effective classroom transaction have been added in the backdrop of the Covid-19 pandemic. However, these categories were not part of the state-level PGI.
- * These categories are further divided into 12 domains.
- * Assessment Grades: The PGI-D grades the districts into 10 grades. The highest achievable grade is 'Daksh', which is for districts scoring more than 90% of the total points in that category or overall.
- * It is followed by 'Utkarsh' (81% to 90%), 'Ati Uttam' (71% to 80%), 'Uttam' (61% to 70%), 'Prachesta-1' (51% to 60%) and 'Prachesta-2' (41% to 50%).
- * The lowest grade in PGI-D is 'Akanshi-3' which is for scores upto 10% of the total points.
- * Rajasthan's Sikar is the top performer followed by Jhunjhunu and Jaipur
- * The other States whose districts have performed best in the latest index are
- * Punjab with 14 districts in Ati-uttam grade followed by Gujarat and Kerala with each having 13 districts in this category.

Significance.

- * The indicator-wise PGI score shows the areas where a district needs to improve. The PGI-D will reflect the relative performance of all the districts in a uniform scale which encourages them to perform better.
- * At the same time, it will also act as a good source of information for best practices followed by States and UTs which can be shared.
- * It helps all the stakeholders in the school education system, including the students, parents, teachers, and administrators to know the performance of their district vis-à-vis other districts.

2.4 State Food Safety Index (SFSI) 2021-22

[News].

the Food Safety and Standards Authority of India (FSSAI) released the State Food Safety Index (SFSI) 2021-22.

[Concept].

What is the SFSI?

- * The index aims to measure the performance of states and Union Territories on selected “parameters” of food safety.

- * The index is aimed at encouraging states and UTs to “improve their performance and work towards establishing a proper food safety ecosystem in their jurisdiction.
- * The SFSI is released annually for a financial year.
- * The SFSI takes into account the performance of the states on five key parameters, each of which is assigned a different weightage in the assessment.

1. Human Resources and Institutional Data
2. Compliance
3. Food Testing – Infrastructure and Surveillance
4. Training and Capacity Building
5. Consumer Empowerment

Performance.

- * In the category of the 20 large states, Tamil Nadu with an overall score of 82 out of 100 has performed the best and been ranked 1st on SFSI 2021-22, while Andhra Pradesh with an overall score of 26 has been ranked at the bottom —17th place.
- * Among the eight small states, Goa with a score of 56 has been ranked at the top, while Arunachal Pradesh (rank 8th and score 21) is at the bottom. Among the eight Union Territories, Jammu and Kashmir with a score of 68.5 has been ranked 1st and Lakshadweep (score 16) as the bottom.

2.5 Liquid Nano Urea

[News].

Recently Prime Minister of India officially inaugurated the country's first liquid Nano urea plant at Kalol, Gujarat

[Concept].

About Liquid Nano Urea.



- * It is urea in the form of a nanoparticle. It is a nutrient (liquid) to provide nitrogen to plants as an alternative to the conventional urea.
- * Urea is a chemical nitrogen fertiliser, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- * It is developed to replace conventional urea and it can curtail the requirement of the same by at least 50%.
- * It contains 40,000 mg/L of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.

Developed At:

- * It has been indigenously developed at Nano Biotechnology Research Centre, Kalol, Gujrat in line with Atmanirbhar Bharat and Atmanirbhar Krishi.
- * India is dependent on imports to meet its urea requirements.

Objective:

- * It is aimed at reducing the unbalanced and indiscriminate use of conventional urea, increase crop productivity, and reduce soil, water, and air pollution.

Significance:

- * **Improves Plant Nutrition.** It has been found effective and efficient for plant nutrition which increases production with improved nutritional quality.
- * It will boost a balanced nutrition program by reducing the excess use of Urea application in the soil and will make the crops stronger, healthier and protect them from the lodging effect.
- * Lodging is the bending over of the stems near ground level of grain crops, which makes them very difficult to harvest, and can dramatically reduce yield.
- * **Improves Environment.** It will also have a huge positive impact on the quality of underground water, a very significant reduction in global warming with an impact on climate change and sustainable development.

- * **Increase Farmers' Income.** It is easy on the pocket of farmers and will be effective in increasing farmers' income. It will also significantly bring down the cost of logistics and warehousing.

How is the LNU better than the Conventional Urea?

- * **Higher Efficiency.** While conventional urea has an efficiency of about 25 %, the efficiency of liquid nano urea can be as high as 85-90 %. Conventional urea fails to have the desired impact on crops as it is often applied incorrectly, and the nitrogen in it is vaporised or lost as gas. A lot of nitrogen is also washed away during irrigation.
- * **Targeted Supply of Nutrients to Crops.** Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant. Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, pores found on the epidermis of leaves.
- * **Economical.** A bottle of the nano urea can effectively replace at least one bag of urea. The liquid nano urea comes in a half-litre bottle priced at Rs 240, and carries no burden of subsidy currently. By contrast, a farmer pays around Rs 300 for a 50-kg bag of heavily subsidized urea.

2.6 GM cotton seed

[News].

Illegal variety occupies about a fifth of GM cotton seed market

[Concept],

Bt cotton



- * Bt cotton is a genetically modified organism (GMO) or genetically modified pest resistant plant cotton variety, which produces an insecticide to combat bollworm.
- * Bt (*Bacillus thuringiensis*) cotton has been commercially grown in India for the past 19 years.
- * The Genetic Engineering Approval Committee (GEAC) approved the release of Bt cotton for commercial cultivation in 2002 in western and southern parts of the country.
- * In Punjab, Bt cotton was released for cultivation in 2005. Before the release, it was adopted by 72% farmers on 22% of the cotton area.

Benefits

- * **Reduction in insecticide use.** Reduction in the use of highly hazardous and riskiest insecticides by volume and their applications.
- * **Reducing Impacts.** Decline in environmental and human health impact associated with insecticide use.
- * **More profits and income.** Reduction in the expenses associated with insecticide use. With reduced investment on insecticides and pesticides, farmers are able to save more even after paying high for Bt Cotton seeds.
- * **Employment to Women.** Traditionally, plucking the flower of cotton had been the task of Women. It has led to better income opportunities for women.
- * **Better Soil Health.** Soil health remains intact by their use. In a normal scenario, a lot of tilling has to be done thereby making the soil prone to soil erosion.

Challenges

- * **Uncertain Resistance.** The complete reliance on Bt cotton without incorporating it into the integrated pest management (IPM) system led to outbreak of whitefly in northern India and pink bollworm in western India in 2015. Thus, resistance to Bt cotton is yet to become a significant problem.
- * **Lack of Evidence.** The compatibility of Bt with IPM is not known. Thus, the contrarian view that Bt cotton has been a failure in India, in this case Punjab, lacks empirical evidence.

- * **Awareness & Education:** Small farmers generally don't benefit from Bt cotton much because of lower awareness and education about the same.

Genetic Engineering Appraisal Committee.

- * GEAC is India's top biotech regulatory agency and a statutory organization under the Environment Protection Act, 1986
- * It functions under Ministry of Environment, Forest and Climate Change
- * It is responsible for appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- * The committee is also responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into the environment including experimental field trials.
- * GEAC is chaired by the Special Secretary/Additional Secretary of MoEF & CC and co-chaired by a representative from the Department of Biotechnology.

2.7 Agri Land Price Index (ALPI)

[News],

In News: IIM-Ahmedabad launches Agri land price index

[Concept],

Agri Land Price Index (ALPI)

- * The index is aimed at removing uncertainty in the agricultural land valuation.
- * The index, a prelude to a nationwide gauge to monitor farm land prices, was developed for 107 districts of Andhra Pradesh, Telangana, Karnataka, Maharashtra, Tamil Nadu and Uttar Pradesh, benchmarking land prices for rural and semi-urban areas.
- * It would be reliable source in terms of benchmarking land prices and help in conversion of agricultural land into real estate or for industrial use.
- * The index would help the government in adopting more scientific measures for providing compensation for land acquisition besides helping financial institutions in underwriting of loan and insurance contracts.
- * It would also ensure visibility in movement of agricultural land prices across the country.
- * The factors identified for determining the agricultural land price include irrigation facilities, distance to nearest town or an airport and proximity to international airport.

Findings of the Index.

- * Agriculture land in Karnataka is the most expensive followed by Telangana
Average agricultural land prices in Karnataka, Telangana and Andhra Pradesh, are reported at Rs 0.93 crore, Rs 0.81 crore and Rs 0.77 crore per

acre, respectively, while prices in Uttar Pradesh, Maharashtra and Tamil Nadu are Rs 0.58 crore, Rs 0.49 crore and Rs 0.47 crore, respectively.



3.INTERNATIONAL RELATIONS

3.1 U.S. India Trade Policy Forum (TPF)

[News].

With the re-appearance of Indian mangoes in the U.S. market, after the November 2021 U.S. India Trade Policy Forum (TPF) helped overcome a pandemic-induced hiatus in mango trade.

[Concept].

U.S. India Trade Policy Forum (TPF)

- * **Aim.** To activate working groups of the TPF on agriculture, non-agriculture goods, services, investment, and intellectual property to meet frequently and address issues of mutual concern in a mutually beneficial manner.
- * The idea is to deliver tangible benefits to both countries by resolving outstanding market access issues.

Highlights of the forum.

- * **Mutual Market Access.** The Forum has decided to forge an agreement to facilitate U.S. market access from India, and reciprocate with similar access in the Indian market to many agriculture and animal products.
- * **Restoration of the GSP.** India has sought restoration of the GSP (Generalized System of Preferences) benefits by the U.S.

- * **Totalisation Agreement.** The Forum also agreed on the significance of negotiating a Social Security Totalization Agreement in the interest of workers from both sides. A Totalization Agreement is a convention between two countries preventing duplicate social security contributions for the same income.
- * It would allow workers from both countries to move their retirement savings, the lack of which particularly affects Indian IT workers in the U.S.
- * **Towards Rules-based Global Trading System.** India and the U.S. also discussed engagement in various multilateral trade bodies including the World Trade Organisation (WTO) and the G20 for achieving a shared vision of a transparent, rules-based global trading system among market economies and democracies.
- * The Forum also decided to find mutually agreed solutions on outstanding WTO disputes between the two countries.
- * **Ethanol Supply.** The U.S. indicated an interest in supplying ethanol to India for its goal of 20% ethanol blending with petrol by 2025.
- * **Pharma Cooperation.** The two sides decided to partner with allies in developing a secure pharmaceutical manufacturing base and de-risk global supply chains in such critical sectors like health.
- * **Services Front.** The Forum discussed ways in which legal, nursing and accountancy services can facilitate growth in trade and investment, and

sought to work together on electronic payment services and the digital economy.

- * **Collaboration in Critical Technologies.** Both countries recognise the importance of critical and emerging technologies like cyberspace, semiconductors, Artificial Intelligence, 5G, and future generation telecommunications technology.
- * **Climate Change.** Both countries exchanged views on approaches to increase the utilization of renewable energy to achieve net-zero emissions, as agreed in the India – US Climate and Clean Energy Agenda 2030 Partnership.

Way Forward

- * **Initiating Tariff Removal.** The first step towards a potential deal is for India to take the initiative and consider unilaterally removing its retaliatory tariffs. This will represent India as willing to be a constructive player in trade talks. Even though removing the tariffs without a commitment from the US is a leap of faith, it ultimately will be beneficial for the bilateral trade relationship.
- * **Together Countering China.** From a strategic point of view, one of the ways that India can counter China is through deepening trade ties with partners who are committed to supporting India's growth.
- * A deal with the US will be beneficial for India, both strategically and economically.

- * As the US companies assess whether to shift some of their manufacturing from China, a vibrant trade strategy can complement the Production-Linked Incentive (PLI) schemes, and help to boost both manufacturing and exports.
- * **Facilitating Digital Growth.** To promote further growth in the digital sphere, which represents over USD 100 billion of bilateral trade, the two must address several foundational issues; digital service tax, cross-border data flows and common cellular standards. It's important that on the digital services tax, India accords with emerging global agreements that will accelerate trade.

3.2 Organization of Islamic Cooperation (OIC)

[News]:

The General Secretariat of the Organization of Islamic Cooperation (OIC) “condemned and denounced” the comments on Prophet Muhammad made by two erstwhile national spokespersons of a political party in India.

[Concept]:

About Organization of Islamic Cooperation (OIC)

- * The Organisation of the Islamic Cooperation is the world’s second-largest multilateral body after the UN.

- * It was established by the First Islamic Summit Conference held in Morocco in September 1969.
- * It was known as the Organisation of Islamic Conference until 2011

Objective:



- * To safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world.

Members:

- * As of now, 57 members, all of them are Islamic countries or Muslim majority members.
- * The Central African Republic, Russia, Thailand, Bosnia & Herzegovina, and the unrecognised Turkish Cypriot “state”, have Observer status.

India & OIC

- * India has the world's second-largest Muslim community, and had been invited to the founding conference at Rabat in 1969, but was humiliatingly ejected at Pakistan's behest.
- * In 2006, as India turned the economic corner and improved ties with the US, Saudi Arabia invited Delhi to join as an observer.
- * However, India refrained from joining citing that it did not want to join an organisation founded on religion. Secondly, there was the risk that improving bilateral relations with individual member states would come under pressure in a grouping, especially on issues such as Kashmir.
- * The OIC is mainly controlled by Saudi Arabia, but Pakistan, as the only Islamic country with nuclear weapons, has had a large say since its inception.

Changing terms.

- * After building close ties with powerful members such as UAE and Saudi Arabia, India has been confident of riding over any statement by the grouping.
- * India has consistently underlined that J&K is an "integral part of India and is a matter strictly internal to India", and that the OIC has no locus standi on the issue.
- * In 2019, India made its maiden appearance at the OIC Foreign Ministers' meeting, as a "guest of honour".

- * The OIC includes two of India's close neighbours, Bangladesh and Maldives. Both countries privately admit they do not want to complicate their bilateral ties with India on Kashmir.

Significance of OIC for India:

- * OIC's growing economic and energy interdependence with India has become important in recent times.
- * Individually, India has good relations with almost all member nations. Ties with the UAE and Saudi Arabia.

3.3 India-ASEAN conclave

[News],

India hosted the two-day conclave to mark the 30th anniversary of its relations with the 10-nation Association of Southeast Asian Nations (ASEAN).

[Concept],

ASEAN



- * The Association of Southeast Asian Nations is a regional organization which was established to promote political and social stability amid rising tensions among the Asia-Pacific's post-colonial states.
- * The motto of ASEAN is "One Vision, One Identity, One Community".
- * 8th August is observed as ASEAN Day.
- * ASEAN Secretariat – Indonesia, Jakarta.

Who are the Member Nations?

- * Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, Cambodia.

Where does the Genesis of ASEAN Lie?

- * 1967 – ASEAN was established with the signing of the ASEAN Declaration (Bangkok Declaration) by its founding fathers.
- * Founding Fathers of ASEAN are: Indonesia, Malaysia, Philippines, Singapore and Thailand.
- * 1990s – Membership doubled after the changing conditions in the region following the end of the Vietnam War in 1975 and the Cold War in 1991. Addition of Brunei (1984), Vietnam (1995), Laos and Myanmar (1997), and Cambodia (1999).
- * 1995 – Members signed a deal to create a nuclear-free zone in Southeast Asia.
- * 1997 – Adoption of ASEAN Vision 2020.

- * 2003 – Bali Concord II for the establishment of an ASEAN Community.
- * 2007 – Cebu Declaration, to accelerate the establishment of ASEAN Community by 2015.
- * 2008 – ASEAN Charter comes into force and becomes a legally binding agreement.
- * 2015 – Launch of ASEAN Community.

ASEAN Community is comprised of three pillars:

- * ASEAN Political–Security Community
- * ASEAN Economic Community
- * ASEAN Socio–Cultural Community

What are the Objectives of ASEAN?

- * To accelerate economic growth, social progress and cultural development for a prosperous and peaceful community of Southeast Asian Nations.
- * To promote regional peace and stability through abiding respect for justice and the rule of law and adherence to the principles of the United Nations Charter.
- * To promote active collaboration and mutual assistance on matters of common interest in the economic, social, cultural, technical, scientific and administrative fields.
- * To collaborate more effectively for the greater utilisation of agriculture and industries, the expansion of their trade, the improvement of transportation

and communications facilities and the raising of the living standards of peoples.

- * To promote Southeast Asian studies.
- * To maintain close and beneficial cooperation with existing international and regional organisations.

What are the Fundamental Principles of ASEAN?

- * The ASEAN fundamental principles, as contained in the Treaty of Amity and Cooperation in Southeast Asia (TAC) of 1976
- * Mutual respect for the independence, sovereignty, equality, territorial integrity, and national identity of all nations.
- * The right of every State to lead its national existence free from external interference, subversion or coercion.
- * Non-interference in the internal affairs of one another.
- * Settlement of differences or disputes by peaceful manner.
- * Renunciation of the threat or use of force.
- * Effective cooperation among themselves.

What is the Significance of ASEAN for India?

- * India needs a close diplomatic relationship with ASEAN nations both for economic and security reasons.
- * Connectivity with the ASEAN nations can allow India to improve its presence in the region.

- * These connectivity projects keep Northeast India at the centre, ensuring the economic growth of the northeastern states.
- * Improved trade ties with the ASEAN nations would mean a counter to China's presence in the region and economic growth and development for India.
- * ASEAN occupies a centralised position in the rules-based security architecture in the Indo-Pacific, which is vital for India since most of its trade is dependent on maritime security.
- * Collaboration with the ASEAN nations is necessary to counter insurgency in the Northeast, combat terrorism, tax evasions etc.

ASEAN-led Forums:

- * ASEAN Regional Forum (ARF): Launched in 1993, a twenty-seven-member multilateral grouping was developed to facilitate cooperation on political and security issues to contribute to regional confidence-building and preventive diplomacy.
- * ASEAN Plus Three: The consultative group initiated in 1997 brings together ASEAN's ten members, China, Japan, and South Korea.
- * East Asia Summit (EAS): The summit seeks to promote security and prosperity in the region and is usually attended by the heads of state from ASEAN, Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States.

3.4 Geneva Package (WTO)

[News]:

The recently held 12th Ministerial Conference of the WTO agreed to a series of deals relating to the temporary waivers on Covid-19 vaccines, a moratorium on e-commerce trade, food security and setting limits on harmful fishing subsidies. Together these agreements are referred to as the "Geneva Package".

[Concept]:

World Trade Organisation.

Ministerial Conference (MC):

- * The Ministerial Conference is the WTO's top decision-making body and usually meets every two years.
- * All members of the WTO are involved in the MC and they can take decisions on all matters covered under any multilateral trade agreements.
- * The WTO's 12th Ministerial Conference was held in Geneva.

Key takeaways:

- * Curtailing harmful fishing subsidies.
- * A multilateral agreement was passed to curb 'harmful' subsidies on illegal, unreported and unregulated fishing for the next four years, to better protect global fish stocks.

- * Global Food Security: Members agreed to a binding decision to exempt food purchased by the UN's World Food Program (WFP) for humanitarian purposes, from any export



4. INDIAN HISTORY

4.1 Telangana Rebellion & Movement

[Concept]:

Introduction

- * The Telangana movement (1946-51) was an armed revolt of peasants, under the leadership of the Communist Party of India against oppressive landlordism patronized by the autocratic rule of the Nizam of Hyderabad.



- * It was a pivotal moment in Indian history because of its impact on the future of the communist movement in India, and its highlighting of the condition of the Indian peasantry.

Background

Social

- * Before Indian independence, Hyderabad state was a princely state within the territory of British India, comprised of three linguistic regions: the Telugu-

speaking Telangana area (including the capital city, Hyderabad), the Marathi-speaking Marathwada area, and a small Kannada-speaking area.

- * The ruling elites, including the Nizam, were Muslims, while the majority were Hindus.
- * The nature of land ownership in the region was extremely exploitative.
- * 40% of the land was either directly owned by the Nizam or given by the Nizam to elites in the form of jagirs (special tenures).
- * The remaining 60% was under the government's land revenue system, which relied on powerful landlords and gave no legal rights or security from eviction to the people actually cultivating the land.
- * Other exploitative practices were widespread.
- * The vetti (forced labour) system consisted of work performed by lower castes at the will of the landlord.
- * For example, each so-called "untouchable" family was required to send one man everyday to do household labour and other jobs for the landlord.
- * The large landowners had taken over significant tracts of land, either through forced occupation or debt-sales.

Political

- * In the 1920s, the suppression of languages and cultures provoked resistance, which eventually led to more wide-ranging agitations.

* In 1928, the Andhra Mahasabha (AMS) was organised, which later in 1934 conference demanded:

1. reduced land revenue rates

2. abolition of vetti, and

3. the introduction of Telugu into the local courts

* The advent of the Second World War saw the beginning of communist influence on the AMS, and in 1942, with the removal of the ban on the Communist Party of India (CPI), the communists began to grow in Hyderabad.

* Further, after 1944, the communists, along with AMS, began gaining ground in several districts, especially among the agricultural labourers, poor tenants and small landholders, and started forming Sanghams (village-level committees).

The Movement: The Spark

* Tensions mounted when a hereditary tax collector, attempted to forcibly take land belonging to a member of a village sangham.

* He sent a group of 100 goons and 100 servants to forcibly gather the harvest.

* They were resisted by the local village sangham leaders and volunteers.

* On July 4, 1946, a procession was organised by the villagers protesting the violence and terrorism of the landlord's goons.

- * As they approached the landlord's house, some of the goons opened fire on the procession, leading to the death of Doddi Komarayya, the sangham leader.
- * The death of Komarayya enraged the people, sparking a massive revolt amongst the Telangana peasantry, with people from neighbouring villages marching, holding meetings in front of the landlord's house, and declaring: "Sangham is organised here. No more vetti, no more illegal exactions, no evictions".
- * By the end of July, the movement had spread to about 300-400 villages across three districts.
- * In response, the police, with the help of landlords, conducted a series of search operations, leading villagers to arm themselves.
- * In October 1946, the Nizam's government banned the AMS, and a spurt of arrests and military raids took place. Under these conditions of martial rule, some landlords began returning.
- * Thus, during this first phase of the movement, the people were able, in several areas, to "put an end to vetti, illegal exactions, compulsory grain levies, and reoccupy the lands seized earlier by the landlords", while also "resisting the landlords' armed goondas" and facing "the armed police and the military forces of the Nizam"

Razzakar Terror

- * In August 1947, when India became independent, Hyderabad state exercised the option of remaining autonomous.
- * The bulk of the ruling majority, including the Nizam, the nobility and the Majlis-I-Ittehad (MII), a fundamentalist Islamic organisation within Hyderabad, supported the call for Azad ("Free") Hyderabad.
- * At this point, the MII started growing in militancy.
- * Its paramilitary force, the Razakars, were sent in hordes to suppress the peasant insurrection.
- * They raided and plundered the troubled villages, arrested or killed suspected and potential agitators, terrorized the innocent, and also abducted women as part of the campaign of punitive measures against the turbulent villages all over Hyderabad, but particularly in Telangana.
- * In reaction, in February 1948, the CPI introduced a new policy aimed at encouraging guerilla offensives, largely influenced by the success of the Telangana insurrection.
- * The village republics started redistributing land to landless agricultural labourers and evicted tenants, increasing the popularity of the movement.
- * Police Acton and the Aftermath

- * On September 13, 1948, in a 'police action' aimed at countering the violence in Hyderabad, the Indian Army marched into the state. Within a week's time, the Nizam, the razakar squads and the police surrendered.
- * In an effort to co-opt peasant support, the military administration issued the Jagir Abolition Regulation (August 1949) and set up an Agrarian Enquiry Committee to recommend comprehensive land reform legislation.
- * At this time, a debate ensued within the CPI. Certain sections felt that giving up arms was essential. Other sections were sceptical, as they felt that giving up arms could lead to loss of gains and appear as a betrayal of the people.
- * However, by the end of 1950, only isolated guerilla groups existed, there was little coordination among village republics, and the severe military repression had taken its toll on the population, with a huge loss of life, and the movement weakened.
- * By early 1951, Congress government made several conciliatory gestures towards the CPI, and, after several rounds of negotiations, the CPI formally declared the struggle withdrawn on October 21, 1951.

Conclusion

- * The Telengana movement represents the culmination of efforts by communist and socialist parties in the first few decades of the communist movement.

- * The untiring efforts organising and mobilising the peasantry against grave injustices represented a break away from traditionally more moderate reformist movements within the peasantry.
- * Although the exact significance and value of the Telengana movement is fiercely debated, one cannot deny the role of the movement, in bringing the question of the peasantry to the fore of the communist movement; in actively organising people against caste injustices; and in radically redefining the need for strong organisational structure, which was a key factor in the growth of the movement.

4.2 The Sant Tukaram Temple

[News]:



The Prime Minister of India inaugurated the Sant Tukaram Shila Mandir in the temple town of Dehu in Pune district.

[Concept]:

About the Shila Mandir

- * Shila refers to a rock; that is currently on the Dehu Sansthan temple premises, and that for centuries has been the starting point of Wari, the annual pilgrimage to Pandharpur.
- * The Bhakti saint Sant Tukaram had sat on this piece of rock for 13 continuous days when challenged about the authenticity of the Abhyangs he had written.

Sant Tukaram

- * Sant Tukaram Maharaj was a 17th-century Marathi poet, and Hindu saint popularly known as Tuka, Tukobaraya, Tukoba in Maharashtra.
- * He was a Sant of Varkari sampradaya: which venerates the god Vithoba in Maharashtra.
- * **Abhanga:** Tukaram is best known for his devotional poetry called Abhanga and community-oriented worship with spiritual songs known as kirtans.
- * **The Warkari sect.** Sant Tukaram and his work are central to the Warkari sect spread across Maharashtra.
- * Wari pilgrimage: Sant Tukaram is credited with starting the Wari pilgrimage.
- * The Wari sees lakhs of devotees congregating in the temple towns of Dehu and Alandi to accompany the padukas of Sant Tukaram and Sant Dyaneshwar respectively as they start for Pandharpur.

- * Social reforms: Tukaram accepted disciples and devotees without discriminating gender.
- * Casteless society: His message about a casteless society and his denial of rituals had led to a social movement.

4.3 Ahobilam

[News],

Nava Narasimha' a thematic dance production on the presiding deity of Ahobilam

[Concept],

Ahobilam



- * Its located in the Nallamala ranges of Kurnool District of Andhra Pradesh and is considered to be one of the 108 Vaishnava Divyadesams in the country.

- * The region is famous for its two beautiful temples located in lower Ahobilam and upper Ahobilam.

Legends behind Ahobilam Temple

- * According to legend, this is where Lord Narasimha blessed Prahlada and killed the demon Hiranyakashipu. Ahobilam is one of the ancient Vaishnava shrines of India and it has a matha at Srirangam.
- * The idol of the presiding deity Lord Narasimha is shown in a sitting posture with jatagata or matted hair. This is the unique posture of Vishnu and which can only be seen here.
- * A rivulet, popularly known as Bhavanasi flows near the temple, which has crystal clear water. It is believed that there is a cave underneath the temple where sits a Swayambhu (self manifested) Narasimha.

Architecture

- * The shrine of the Ahobilam temple is situated on the top of the first range and is referred to as Upper Ahobilam and the lower ranges down below are called Lower Ahobilam.
- * A huge temple surrounded by a number of buildings can be seen at the Upper Ahobilam.
- * The main shrine or the “sanctum sanctorum” at Upper Ahobilam was carved out of a big egg-like rock with mandapams.

- * There is a tank here, which supplies water to the residents of the Upper Ahobilam temple. It is mainly for growing flowers for the shrine.
- * There is a Lower Ahobilam below which consists of a big temple and enclosures. It was built according to the South Indian style of Temple construction.
- * Apart from this, Ahobilam has abundant architectural and epigraphical evidence, chronicled right from the times of the Chalukyas in the eighth century AD.
- * Nalayira Divyaprabhandam, Abeethi Stavam, Narayaneeyam, Avanthika Parinayam (the Sanskrit play written by Yateendra Mahadesikan, the seventh Jeer of Ahobila Mutt, about the wedding of Narasimha (Ahobaleshwar) with Mahalakshmi (Chenchu Lakshmi)), Ashtapadi, Karavalamba Stotram, and Annamacharya kritis, are some of the hymns that highlight the different qualities of the deity.
- * The Telugu folk songs, (chosen in consultation with Aparna Srikanth), which are used in the production, signifies the importance of the Chenchu tribe in Ahobilam.

4.4 Gulabi Meenakari and Varanasi Wooden Lacquerware and Toys

[News].

The Prime Minister had taken along a plethora of artistic gifts for each of the

G7 leaders.

[Concept]:

Gulabi Meenakari:

- * Gulabi Minakari is one of the rarest crafts in India that is practiced in Varanasi.
- * This art was brought to the city of Varanasi by Persian enamellists during the Mughal era.
- * Minakari is an art form from Persia and involves coloring the surface of metals by fusing different colors.
- * In Varanasi, it is practiced on jewelry and home decor items.
- * It was given a GI Tag in the year 2015.
- * Varanasi Wooden Lacquerware & Toys
- * Varanasi wooden lacquerware & toys is an ancient craft, where the toys are made in wood with sets of birds, animals, orchestras, and dance ensembles available packed in boxes.
- * Earlier Sal or Seesham was used in the making of the toys, due to price rise cheaper, lighter wood is now being used. The paints are bright and usually applied in primary colours.

5.GEOGRAPHY

5.1 Kaliningrad

[News].

Moscow warned Lithuania of serious consequences over its restriction of rail traffic to Russia's Kaliningrad exclave.

[Concept].

Where is Kaliningrad?

- * Kaliningrad is located on the Baltic Sea. It is Russia's westernmost federal entity. It is situated almost 300 km away from mainland Russia and shares no borders with it.



- * Kaliningrad borders NATO members Poland and Lithuania. Essentially, Kaliningrad is Russian territory surrounded by NATO.

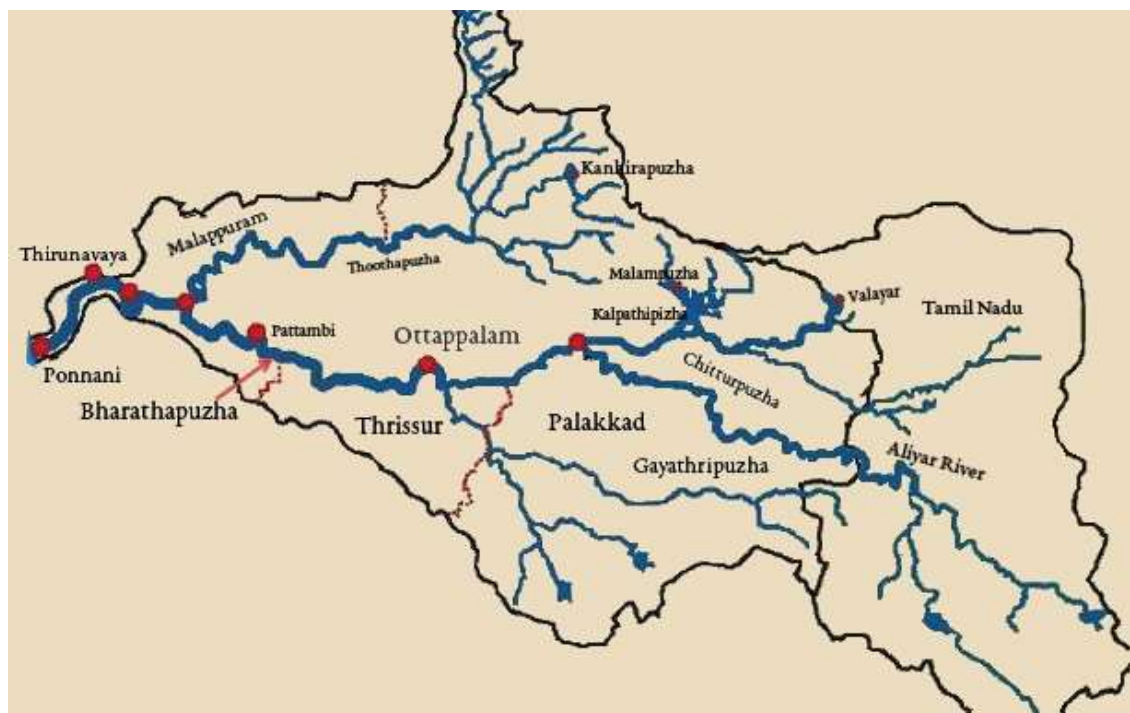
5.2 Mortara (Italy)

- * The worst drought Italy has faced in 70 years is thirsting paddy fields in the river Po valley and jeopardizing the harvest of the premium rice.
- * Italy's largest river is turning into a long stretch of sand due to the lack of rain, leaving the Lomellina rice flats — nestled between the river Po and the Alps — without the necessary water to flood the paddies.
- * The lack of rainfall has brought governors of various Italian regions to declare a state of emergency in order to conserve water and coordinate the management of minimal resources.
- * The region's main water sources, the rivers Po and Dora Baltea, are eight times lower than the average seasonal levels.

5.3 Chulliyar Dam

[News]:

- * Chulliyar Dam is one of the major irrigation project in palakkad
- * Constructed in 1960, it is built across Chulliyar River, one of the tributaries of the river Gayathripuzha.



- * Gayathripuzha is one of the main tributaries of the Bharathapuzha River, the second-longest river in Kerala, south India.
- * The adjacent Nelliampathy Mountains multiply the charm of this locality.

5.4 Aegean sea & Islands

[News]:

Turkish President has demanded Greece to demilitarize islands in the Aegean Sea

[Concept]:

- * Aegean Sea an arm of the Mediterranean Sea, located between the Greek peninsula on the west and Asia Minor on the east.



- * The Aegean is connected through the straits of the Dardanelles, the Sea of Marmara, and the Bosphorus to the Black Sea, while the island of Crete can be taken as marking its boundary on the south.

5.5 Lake Sawa (Iraq)

[News]:

This year, for the first time in its centuries-long history, Iraq Lake Sawa dried up.

[Concept]:

Lake sawa.

- * The Sawa Lake, a biodiverse wetland situated near the city of Samawa, south of the capital Baghdad.

- * The lake has been formed over limestone rock and studded with gypsum formations
- * It has no inlet or outlet and the source of its waters had mystified experts for centuries, fuelling fantastical folklore and religious tales that locals recite as historical fact.

Historical Links.

- * Lake Sawa appears in some old Islamic texts.
- * It is said the lake miraculously formed on the day the Prophet Muhammad was born in 570 A.D.

Recognition.

- * In 2014, Lake Sawa was named a Ramsar site, an international designation for important wetlands, gaining recognition as a rare area in need of protection.

5.6 Supermoon**[News].**

The Super moon was seen worldwide in different time zones

[Concept].

What is a Supermoon?

- * A supermoon occurs when the Moon's orbit is closest to the Earth at the same time that the Moon is full.
- * As the Moon orbits the Earth, there is a point of time when the distance between the two is the least (called the perigee when the average distance is about 360,000 km from the Earth).



- * Also, there is a point of time when the distance is the most (called the apogee when the distance is about 405,000 km from the Earth).
- * Now, when a full moon appears at the point when the distance between the Earth and the Moon is the least, not only does it appear to be brighter but it is also larger than a regular full moon.
- * According to NASA, the term supermoon was coined by astrologer Richard Nolle in 1979.
- * In a typical year, there may be two to four full supermoons and two to four new supermoons in a row.

5.7 Lightning

[News].

Several deaths are being reported due to lightning across India

[Concept].

Lightning:

- * It is a very rapid and massive discharge of electricity in the atmosphere. It is the process of occurrence of 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.
- * 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.

Process:

- * It is a result of the difference in electrical charge between the top and bottom of a cloud.
- * 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.
- * It produces heat, leading to the heating of the air column between the two layers of cloud.
- * It is because of this heat that the air column looks red during lightning.
- * The heated air column expands and produces shock waves that result in thunder sounds.

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.
- * At the place where the Catatumbo river falls into Lake Maracaibo, an average 260 storm days occur every year, and October sees 28 lightning flashes every minute – a phenomenon referred to as the Beacon of Maracaibo or the Everlasting Storm.

Climate Change & Lightning:

- * An increase of one degree Celsius would increase the frequency of lightning strikes by 12% , warned California University in a study published 2015.

6.ENVIRONMENT

6.1 Valmiki Tiger Reserve

[News]:

The forest department of Bihar has established an elephant rescue center at Bihar's Valmiki Tiger Reserve (VTR) to rehabilitate stray, abandoned and injured Elephants.

[Concept]:

The Valmiki Tiger Reserve is the only tiger reserve in Bihar, which forms the easternmost extent of the Himalayan Terai forests in India.

Situated in the Gangetic plains bio-geographic region, the vegetation of this Tiger Reserve is a combination of Bhabar and Terai regions.

According to the Tiger Census, 2018, the number of tigers in Valmiki Tiger Reserve is 32.

According to the Forest Survey of India Report 2021, 85.71% of its total area is covered by forest cover.

Wild mammals found in the forests of Valmiki Tiger Reserve include tiger, sloth bear, leopard, wild dog, bison, wild boar etc.

6.2 Deepor Beel

[News]:

Assam's Deepor Beel is perishing from concretization and waste dumping.

[Concept]:

Deepor Beel

- * It is one of the largest freshwater lakes in Assam and the State's only Ramsar site besides being an Important Bird Area by Birdlife International.
- * It is located towards the southwest of Guwahati city, Assam and is the erstwhile water channel of River Brahmaputra.
- * The lake expands up to 30 sq. km in summer and reduces to about 10 sq. km in the winter. The wildlife sanctuary measures 4.1 sq. km within this wetland (beel).

Importance.

- * It constitutes a unique habitat for aquatic flora and avian fauna.
- * It has both biological and environmental importance besides being the only major storm-water storage basin for Guwahati city.
- * It provides a means of livelihood for a number of local families.
- * Recently, six young girls from the fishing community from Assam have developed a biodegradable and compostable yoga mat called 'Moorhen Yoga Mat'.

6.3 National Chambal sanctuary

[News]:

To end illegal mining, Madhya Pradesh plans to make it (mining) legal in parts of Chambal sanctuary

[Concept]:

National Chambal sanctuary

- * It was set up in 1979 as a riverine sanctuary along an approximately 425 km length of the Chambal River.
- * Its ravines stretches over 2–6 km wide along the Chambal River near the tri-point of Rajasthan, Madhya Pradesh and Uttar Pradesh.
- * The National Chambal Sanctuary is listed as an Important Bird Area (IBA) and is a proposed Ramsar site.

6.4 Fishing Cat

[News]:

World's first fishing cat census was conducted by Chilika Development Authority (CDA) in collaboration with The Fishing Cat Project (TFCP)

[Concept]:

Fishing Cat

Scientific Name: *Prionailurus viverrinus*.

Description:

- * It is twice the size of a house cat.
- * The fishing cat is nocturnal (active at night) and apart from fish also preys on frogs, crustaceans, snakes, birds, and scavenges on carcasses of larger animals.
- * The species breed all year round.
- * They spend most of their lives in areas of dense vegetation close to water bodies and are excellent swimmers.

Habitat:

- * Fishing cats have a patchy distribution along the Eastern Ghats. They abound in estuarine floodplains, tidal mangrove forests and also inland freshwater habitats.
- * Apart from Sundarbans in West Bengal and Bangladesh, fishing cats inhabit the Chilika lagoon and surrounding wetlands in Odisha, Coringa and Krishna mangroves in Andhra Pradesh.

Threats:

- * **Habitat Destruction:** A major threat for fishing cats is the destruction of wetlands, their preferred habitat.
- * **Shrimp Farming:** Shrimp farming is another growing threat to mangrove habitats of the Fishing Cat.

- * **Hunting:** This unique cat also faces threats from hunting for meat and skin.
- * **Ritual Practices:** Tribal hunters indulge in ritual hunting practices throughout the year.
- * **Poaching:** It is also occasionally poached for its skin.
- * **Poisoning:** Indiscriminate trapping, snaring and poisoning.

Protection Status.

- * IUCN Red List: Vulnerable. Despite multiple threats, the Fishing Cat was recently downlisted to “Vulnerable” from “Endangered” in the IUCN Red List species assessment.
- * CITES: Appendix II
- * Indian Wildlife Protection Act, 1972: Schedule I

6.5 Reintroduction of Cheetahs

[News]:

The Union Environment Ministry stated that India is set to bring cheetahs from South Africa to Madhya Pradesh’s Kuno–Palpur National Park by August this year.

[Concept]:

Kuno National Park

- * Its located in MP established in 1981 as a wildlife sanctuary. In 2018, it was given the status of a national park. It is part of the Khathiar-Gir dry deciduous forests.
- * KunoPalpur Wildlife Sanctuary is underway to become India's second home for the Asiatic lion.

Background

- * India and Namibia signed a Memorandum of Understanding (MoU) recently to reintroduce the African cheetah in India.
- * The Asiatic cheetah was declared extinct in India in 1952 and is a critically endangered species surviving only in Iran.
- * In 1947, there were confirmed records of the cheetah's presence in India, but the three surviving males were gunned down by Maharaja Ramanuj Pratap Singh Deo of Surguja state in what is now Guru Ghasidas National Park in Chhattisgarh.
- * The Union government has been attempting to reintroduce cheetahs in India since the 1960s and the 1970s.

Cheetahs

- * The cheetah is one of the oldest of the big cat species, with ancestors that can be traced back more than five million years to the Miocene era.
- * world's fastest land mammal that lives in Africa and Asia.
- * Reasons for extinction in India.

- * Human-wildlife conflict, loss of habitat and loss of prey, and illegal trafficking.

African Cheetah.

- * Scientific Name: *Acinonyx jubatus jubatus*
- * Habitat: African Savannahs
- * Characteristics: They are bigger in size as compared to Asiatic Cheetah.
- * Conservation Status:
- * IUCN status: Vulnerable
- * CITES Appendix I

Asiatic Cheetah.

- * Characteristics: Smaller and paler than the African cheetah.
- * IUCN status: Critically Endangered
- * Status in India: Declared extinct in India in 1952
- * Distribution: Only 40-50 and found only in Iran.

6.6 Environment Performance Index

[News]:

Environment Performance Index-2022, an international ranking system that measures environmental health and sustainability of countries.

[Concept]:

What is the Environmental Performance Index?

- * The EPI is a global rating system that ranks nations based on their environmental health.
- * The Environmental Performance Index (EPI) provides a data-driven evaluation of the global level of sustainability.
- * EPI indicators help to identify issues, define goals, follow trends, understand outcomes and identify effective policy methods.
- * Good data and fact-based research may also help policymakers narrow their goals, improve relationships with important stakeholders and optimise the return on environmental spending.
- * The EPI is an effective policy instrument for achieving the UN Sustainable Development Goals and moving society toward a more sustainable future.

Who publishes the Environmental Performance Index?

- * The Environmental Performance Index (EPI) is a biennial index, launched by the World Economic Forum in 2002 as the Environmental Sustainability Index in partnership with the Yale Center for Environmental Law and Policy and the Columbia University Center for International Earth Science Information Network.
- * This index was first published in 2002 and designed to supplement the environmental targets set forth in the United Nations Millennium Development Goals.

What does the Environmental Performance Index measure?

- * The EPI ranks 180 nations using 40 performance indicators across 11 issue areas on the following policy objectives:
- * climate change performance
- * environmental health
- * ecosystem vitality
- * These indicators reflect how near countries are to meeting stated environmental policy objectives on a national basis.
- * The EPI produces a scorecard that recognises environmental leaders and laggards and gives practical suggestions for nations seeking to move toward a more sustainable future.

What is India's rank on Environmental Performance Index?

- * India is ranked 180th among 180 countries in the Environmental Performance Index (EPI) 2022.
- * India is ranked after Pakistan, Bangladesh, Vietnam and Myanmar, with a trifling score of 18.9.
- * According to EPI, India also ranks poorly in terms of rule of law, corruption control, and government performance.
- * "India slips to the bottom of the rankings for the first time, with increasingly hazardous air quality and quickly rising greenhouse gas emissions," the report stated.

- * With a score of 27.6, India was ranked 168th in EPI-2020.

6.7 Carbon bombs

[News]:

: 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.

[Concept]:

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.
- * 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 .

6.8 Eco-sensitive zone (ESZ)

[News]:

Protest is mounting in the hilly regions of Kerala against the Supreme Court direction that every protected forest tract and wildlife sanctuary must have an ecosensitive zone (ESZ) of one kilometer from its boundaries.

[Concept]:

Eco-sensitive zone (ESZ)

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

7.SCIENCE AND TECHNOLOGY

7.1 CAPSTONE

[News].

NASA's new satellite will test a unique lunar orbit that will be used by future Missions.

[Concept].

CAPSTONE

- * It is a microwave oven-sized CubeSat weighing just 55 pounds (25 kg).
- * It is designed to test a unique, elliptical lunar orbit.
- * It aims to help reduce risk for future spacecraft by validating innovative navigation technologies, and by verifying the dynamics of the halo-shaped orbit.
- * 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.
- * It will gain experience with small dedicated launches of CubeSats beyond low-Earth orbit, to the Moon, and beyond, NASA said.

Mission objectives.

- * Verify the characteristics of a cis-lunar near rectilinear halo orbit for future spacecraft

- * Demonstrate entering and maintaining this unique orbit that provides a highly-efficient path to the Moon's surface and back
- * Demonstrate spacecraft-to-spacecraft navigation services that allow future spacecraft to determine their location relative to the Moon without relying exclusively on tracking from Earth
- * Lay a foundation for commercial support of future lunar operations
- * Gain experience with small dedicated launches of CubeSats beyond low-Earth orbit, to the Moon, and beyond.

7.2 Astra Mk-1

[News]:

The Ministry of Defense signed a contract with the Hyderabad-based public-sector Bharat Dynamics Ltd (BDL) for supply of the Astra Mark-1, for deployment on fighter jets of the Indian Air Force and Indian Navy.

[Concept]:

Astra Mk-1 Missile.

- * The Astra Mk-1 is a Beyond Visual Range (BVR), Air-to-Air Missile (AAM).
- * BVM missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometers.
- * AAMs are fired from an airborne asset to destroy an airborne target.

Range.

- * The range for Astra Mk-1 is around 110 km.
- * The Mk-2 with a range over 150 km is under development and Mk-3 version with a longer range is being envisaged.
- * One more version of Astra, with a range smaller than Mk-1 is also under development.

Designed and Developed by:

- * Defence Research and Development Organisation (DRDO)

7.3 Agni-IV

- * Agni-IV is the fourth in the Agni series of missiles which was earlier known as Agni II prime. Agni-IV bridges the gap between Agni II and Agni III.
- * **CLASS:** Intermediate-range ballistic missile (IRBM)
- * It is surface to surface missile.
- * **WARHEAD:** Nuclear or conventional.
- * **RANGE:** 3,000 – 4,000 km.
- * **PROPULSION:** Two-stage solid propellant.
- * **PAYLOAD:** 1,000 kg.

7.4 BrahMos

News:

On June 12, 2001, the BrahMos supersonic cruise missile was first tested from a land-based launcher in Chandipur. In the 21 years since, BrahMos has been upgraded several times, with versions tested on land, air and sea platforms.

About BrahMos:

- * BrahMos is named on the rivers Brahmaputra and Moskva.
- * Multiplatform Missile: it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- * BrahMos is a two-stage missile with a solid propellant booster engine. The missile has a very low radar signature, making it stealthy, and can achieve a variety of trajectories.
- * Fire and Forget Principle: It operates on the “Fire and Forget” principle i.e. it does not require further guidance after launch.
- * Cruise missiles such as BrahMos, called “standoff range weapons”, are fired from a range far enough to allow the attacker to evade defensive counter-fire.
- * The BrahMos has three times the speed, 2.5 times flight range and higher range compared to subsonic cruise missiles.

- * With missiles made available for export, the platform is also seen as a key asset in defense diplomacy.

7.5 VL-SRSAM

[News]:

VL-SRSAM In News: India has successfully flight-tested the Vertical Launch Short Range Surface to Air Missile (VL-SRSAM) from a ship at Integrated Test Range (ITR), Chandipur, off the coast of Odisha.

[Concept]

About VL-SRSAM

- * The VL-SRSAM, a ship-borne weapon system, is meant for neutralizing various aerial threats at close ranges, including sea-skimming targets.
- * The weapon system will prove to be a force-multiplier for the Indian Navy.
- * Designed to strike at the high-speed airborne targets at the range of 40km to 50km and at an altitude of around 15km.
- * Two key features of the VL-SRSAM are cruciform wings and thrust vectoring.
- * VL-SRSAM is a canisterised system, which means it is stored and operated from specially designed compartments.
- * In the canister, the inside environment is controlled, thus making its transport and storage easier and improving the shelf life of weapons.

7.6 Virtual Private Network (VPN)

[News]:

New directions from Computer Emergency Response Team (CERT-In) for regulating VPN providers will be effective from June 28.

[Concept]:

- * Indian Computer Emergency Response Team (CERT-In) issued norms under which VPN providers have to record personal information of their customers, including the purpose of using the service, for five years.
- * CERT-In is an organisation of the Ministry of Electronics and Information Technology with the objective of securing Indian cyberspace.

What is VPN?

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

Functioning:

- * A VPN hides the user's IP address by letting the network redirect it through a specially configured remote server run by a VPN host.

- * This means that if a user is surfing online with a VPN, the VPN server becomes the source of data.
- * Internet Service Provider (ISP) and other third parties cannot see which websites the user visits or data sent and received online.

Benefits:

1. Secures encryption: A VPN connection disguises data traffic online and protects it from external access. Unencrypted data can be viewed by anyone who has network access. With a VPN, the government, hackers and cyber criminals can't decipher this data.

2. Access to regional content: Regional web content is not always accessible from everywhere. Services and websites often contain content that can only be accessed from certain parts of the world. Standard connections use local servers in the country to determine your location.

3. With VPN location spoofing, one can switch a server to another country and effectively change location.

4. Secure data transfer: VPN services connect to private servers and use encryption methods to reduce the risk of data leakage providing secured passage for data.

Limitations:

- * **Reduced Internet Speed:** Since VPNs require your traffic to be routed via a VPN server, it could take longer to reach your destination website.
- * **Not Anti-Virus Software:** VPNs do not function like comprehensive anti-virus software. While they protect one's IP and encrypt one's internet history, a VPN connection does not protect one's computer from outside intrusion.
- * Once the malware has found its way to a device, it can steal or damage the data, whether VPN is in service or not.

Regulation.

- * Currently, a handful of governments either regulate or outright ban VPNs.
- * These include China, Belarus, Iraq, North Korea, Oman, Russia, and the UAE. Many other countries have internet censorship laws, which make using a VPN risky.

What are the New Rules related to VPN?

- * The Union Ministry of Electronics and Information Technology issued new norms for VPN companies to record personal information of their users including names, email id, phone number and IP address for a period of five years.
- * They also have to record usage patterns, purpose of hiring services and various other information.

- * Apart from VPN companies, data centers, virtual service network providers, cloud service providers have also been asked to record and maintain similar data.
- * Entities are also required to report cybersecurity incidents to CERT-In within six hours of becoming or being made aware of them.

Why has the government issued these rules?

- * These rules will “enhance overall cyber security posture and ensure safe & trusted internet in the country”.
- * It noted that the Indian Computer Emergency Response Team (CERT-In), which serves as a safeguard against cyber-attacks, has identified “gaps” in the way it analyses online threats due to which it has issued the new norms for reporting cyber incidents.
- * In 2021, a Parliamentary Standing Committee, in a report to the Rajya Sabha, wanted the Ministry to block VPNs with assistance from internet service providers.

What are the related Issues?

- * Customers will have to go through a stringent KYC process while signing up to use a VPN and will have to state the purpose of using the services.
- * With the new rules the government will basically have access to the personal information of the customers which makes the use of a VPN redundant.

- * Many VPN providers are mulling the implications of the new rules and some have even threatened to pull back their service from the country.
- * In response to CERT-In rules, Nord VPN, one of the world's largest VPN providers, has said it is moving its servers out of the country. Two other firms, Express VPN and Surfshark, said they will shut down their physical servers in India and cater to users in India through virtual servers located in Singapore and UK.

7.7 Web 5.0

[News]:

Former Twitter CEO Jack Dorsey recently announced his vision for a new decentralized web platform that is being called Web 5.0.

[Concept]:

Web 5.0:

- * It's in an early nascent stage as being developed by Dorsey's Bitcoin business unit, The Block Head (TBH).
- * Web 5.0 is aimed at "building an extra decentralized web that puts one in control of ones's data and identity".
- * 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 the threat of censorship – from governments or big tech, and without fear of significant outages.
- * **Significance.** It's about changing the “control of identity” of an individual and talks about giving users control over their own data, it cites an example that it's totally up to the user whether to save his data anonymously encrypted on the decentralized blockchain or to sell that data to vendors for monetizing and advertising.

7.8 Radiofrequency Identification tags

[News].

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.

[Concept]

What is Radio-frequency identification (RFID) technology?

- * RFID is a wireless tracking method that uses tags and readers to track.
- * Transponder, receiver, and transmitter are the three components of an RFID system.

- * The RFID reader continually sends radio waves of a specific frequency in RFID system.
- * If the object to which the RFID tag is attached is within the range of the radio waves, it provides feedback to the RFID reader, which then identifies the object based on the feedback.

7.9 Iskander–M missile system

[News],

Russia has promised its ally Belarus delivery of nuclear- capable missiles in the coming months to take on an “aggressive” West.

[Concept],

What is the Iskander–M missile system?

- * Codenamed “SS–26 Stone” by NATO, Iskander–M is a term used by Russia to define both the transporter–erector launch system and the short–range ballistic missile (SRBM) it fires.
- * The system can also fire ground–launched cruise missiles (GLCMs).
- * The Iskander–M system has been exclusively used by the Russian military, whereas Iskander–E is the one meant for export.

What is the missile’s capability and range?

- * The Iskander-M missile has a range of 500 km and it can carry a payload of up to 700 kg.
- * It is capable of carrying both conventional and nuclear warheads.
- * The conventional warheads can be equipped with include cluster bombs, electromagnetic pulse (EMP) warheads and bunker-buster munitions.
- * The export variant, Iskander-E, has a range of 280 km with a reduced 480 kg payload.

