

WEEKLY CURRENT AFFAIRS MAGAZINE for

U.P.S.C.-C.S.E.

DECEMBER-VOL-IV-2022

23 December to 31 December



-
- UPSC/MPSC/NDA/CDS/CAPF/AFCAT
 - PUNE/THANE/DADAR/ANDHERI/KALYAN/
PCMC/NERUL/BORIVALI
 - Offline/Online batches/Video course
 - www.pioneeracademypace.com/.in
 - IVR No. – 75060 10635
-

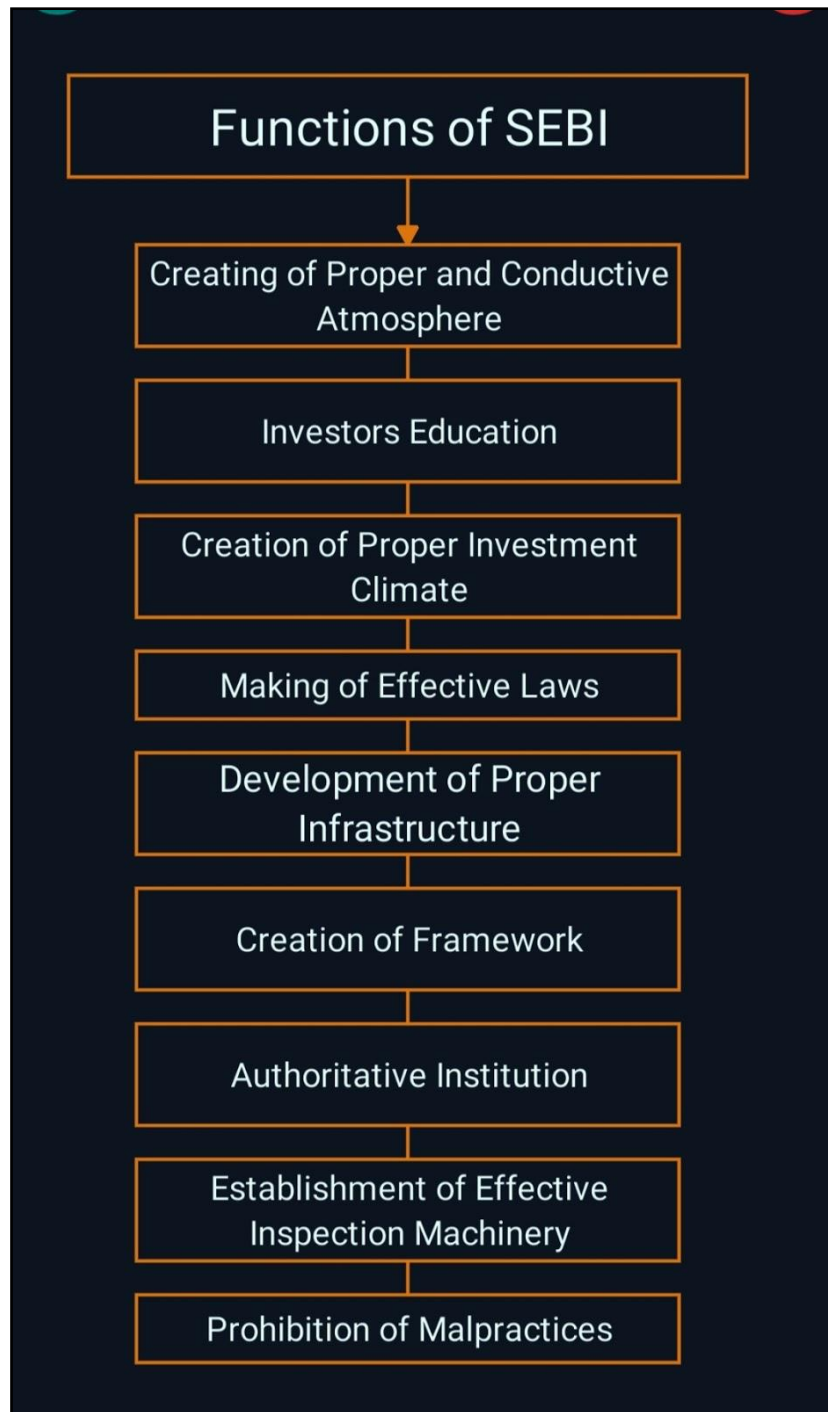
INDEX

Topic no	Topic Covered	Page No
ECONOMY		
1.	SEBI	4-6
2.	LOK ADALATS	6-8
3.	RISK INDICATORS OF BANKS	8-10
4.	EUROPEAN MARKET INFRASTRUCTURE REGULATION (EMIR)	10-13
5.	HYPER- GLOBALIZATION	13-15
6.	MANUFACTURING SECTOR -THE FDI INFLOW	16-18
7.	WORLD ECONOMIC LEAGUE TABLE (WELT)	18-20
8.	WEIGHTED AVERAGE CALL RATE	20-22
9.	G-SEC	22-26
SCIENCE & TECHNOLOGY		
10.	LEVERAGING VOICE TECHNOLOGY TO COMBAT CYBER-FRAUD	27-29
11.	FUSION ENERGY MAY NOT BE TOO FAR AWAY	29-31
12.	GOVERNMENT CHARTS TO BOOST GAMING, ANIMATION AND VFX SECTOR	31-32
13.	KEEPING UP WITH VIRUSES: DISCOVERIES IN 2022 TO KEEP AN EYE ON	33-34
ENVIRONMENT		
14.	INDIA IS ALL SET TO GO FOR ITS FIRST WASTE-TO-HYDROGEN PROJECT	34-36
15.	INDIA'S FIRST PROJECT TO CONSERVE NILGIRI TAHR TAKES SHAPE	36-37
16.	RED SEAWEED PROMISES A GREEN ALTERNATIVE TO PLASTIC	37-39
17.	WATER-BIODIESEL COCKTAIL CUTS GREENHOUSE GAS EMISSIONS	40-41
POLITY		
18.	WRIT PETITION	42-44
19.	DELEGATED LEGISLATION	44-45

20.	A RETELLING OF THE INDIAN MIGRANT WORKER'S PLIGHT	46-49
21.	WHAT IS THE CAG AUDIT REPORT ON ASSAM'S NRC?	49-50
GOVERNMENT SCHEMES		
22.	NATIONAL GANGA COUNCIL MEET	50-51
GOVERNANCE		
23.	ELECTION COMMISSION SAYS READY TO ROLL OUT PILOT FOR MIGRANTS TO VOTE	51-53
INTERNATIONAL RELATIONS		
24.	ITALY APPROVES RULE TO FINE CHARITIES FOR MIGRANT RESCUE	53-54

Topic 1. SEBI

Important for subject: Economy



SEBI has suggested a number of measures to improve the market for capital.

- ISEBI demanded that stock exchanges create it as an Investor Risk Reduction Access (IRRA) Platform.
- It gives investors the possibility to cancel orders pending in the event of disruption to

trading services.

- SEBI also approved amending regulations to enhance the governance and focus for market infrastructure organizations (MIIs).
- It was also made the decision to eliminate the purchase back in a gradual way via the route of the stock exchange.
- The plan will also establish an infrastructure to allow Execution-only plans (EOPs) to direct-plans of mutual funds (MF) scheme.

EOPs are eligible for registration in either of two categories:

- Category-1 EOP acting as an agent for Asset Management Companies (AMCs) that are which are members of the Association of Mutual Funds of India (AMFI) or category 2 EOP acting as an agent for investor who is licensed as stock broker.

Market Infrastructure Institutes:

- MIIs are companies that offer an infrastructure for trading as well as record keeping, settlement and clearing including clearing corporations, stock exchanges and depository institutions.
- Stock exchanges, banks, as well as clearing house are Market Infrastructure Institutions and constitute an essential element of the nation's crucial economic infrastructure.
- MIIs help in the optimal utilization to make money work for the economic, and helped to boost economic development.
- They are the core for the capital allocation process. They are vital to economic growth and have a positive net impact on society just like every other infrastructure organization.
- The fact that MIIs are crucial to the system in India is evident from the exponential growth of these institutions terms of the market capitalization of listed companies, capital raised, the amount of accounts for investors that have depositories, brokers and brokers as well as the value of the assets that are held in the accounts of depositories.
- In the present, MIIs have to maintain a net worth of no less than 100 crores on a daily basis.

What are the particular establishments in India that are deemed to be MIIs?

- The list of stock exchanges is extensive. SEBI list seven exchanges, which includes the BSE and the NSE and as well as the Multi Commodity Exchange of India and the Metropolitan Stock Exchange of India.
- There are two banks which are responsible for the protection of securities and making it possible for their transfer and trading -they are called MIIs The Central Depository Services Ltd. and the National Securities Depository Ltd.
- The regulator lists seven clearing houses, including one called the Multi Commodity Exchange Clearing Corporation.
- Clearing houses, on their part aid in validating and concluding trades in securities, and make sure that sellers and buyers respect their commitments

Topic 2. LOK ADALATS

Important for subject: Economy

The amount of non-per-forming assets (NPAs) which banks have referred to different recovery channels, such as Lok Adalat and the Insolvency and Bankruptcy Code (IBC) route. 2021-22, saw a quadruple increase over 2020-21, as thousands of small-ticket loans were sent for resolution to Lok Adalats from banks.

- The rate of repayment was lower at 2.3 per cent, because it is extremely difficult to collect loans from defaulters in the smaller ticket segment who are not willing to repay.

Debt Recovery:

- Other than Lok Adalat and IBC, the other options that can be used for NPA recuperation include Debt Recovery Tribunal (DRTs) and the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI Act).

Debt Recovery by Lok Adalats:

- Banks can refer stressed accounts up to 20 lakhs in the direction of Lok Adalats, organized by banks via the district Legal Services Authority.
- Lok Adalat is one of the alternatives to dispute redressal mechanisms It's a venue that

allows cases or disputes pending in the courts of law or in the pre-litigation stage can be settled or negotiated in a peaceful manner.

- The Lok Adalats are formed to fulfill the promise made in the preamble to the Indian Constitution- securing Justice both economic, social and political for every citizen of India.

Constitutional base:

- The Article 39A in the Constitution allows for legal assistance to the most disadvantaged and marginalized sections of society. It also promotes justice based on equal opportunities.
- The Constitution's Article 14 make it mandatory for the state to ensure an equality of law.

Statutory rules:

- In the Legal Services Authorities Act, 1987, Lok Adalats were designated a statutory entity.
- The verdict of the Lok Adalats is considered to be the verdict of a civil tribunal and is binding and final for all parties.
- There is no appeal
- There is no option to appeal the decision of Lok Adalat.
- However, they have the option to begin litigation by contacting the appropriate court through filing a lawsuit following the procedure that is required, to exercise their rights to litigate.

Court cost:

- There is no court cost due when a matter is filed with the Lok Adalat. Lok Adalat.
- Note: If a case is in the courts of law is transferred to Lok Adalat and is settled in the future, the fee that was originally paid to the court for the complaint or petition will be refunded towards the defendants.

Nature of Cases to be Referred to Lok Adalat:

- Any case in the midst at any time before a court.
- Any dispute that hasn't been resolved before any court, and is likely to be brought

before the court.

- In the event that a matter relating to an offence that is not applicable to compounding under the law will not be decided by Lok Adalat.

Topic 3. RISK INDICATORS OF BANKS

Important for subject: Economy

GNPA ratio drops to a 7-year low of 5% September 2022, RBI

- It is estimated that the net non-performing asset (GNPA) percentage (seven-year record low) 5 percent by September 2022. It is expected to be at 4.9 percent in September 2023.
- As of September 20, 2022 in 2022, in September 2022, the ratio of net non-performing assets (NNPA) percentage (ten-year lowest) -1.3 percent and the banks in the private sector's (PVBs') NNPA ratio was lower than 1 percent.
- It is estimated that the GNPA percentages for banks in the public sector (PSBs) may increase from 6.5 percent by September 2022, to 9.4 percent in September 2023. Likewise, they would increase from 3.3 percent to 5.8 percent for private private sector banks (PVBs)and from 2.5 percent to 4.1 percent in the case of overseas bank (FBs),under the extremely stressful scenario.
- The banks are capitalised well
- The overall ratio of Capital to Risk Weighted Assets (CRAR)of 46 major banks is expected to fall from 15.8 percent in September 2022, to 14.9 percent by September 2023.
- It could drop to 14 percent in the middle stress situation, and up to 13.1 percent in the extreme stress scenario, that is much higher than what is required for capital minimum comprising Capital Conservation Buffer (CCB)requirements-11.5 per cent.
- None of the banks could be in breach of the capital minimum requirement of 9 percent within the next year even in a highly stressed scenario.
- The common equity level 1 (CET1) capital ratio of the 46 banks that were selected could fall from 12.8 percent in September 2022, to 12.1 percent in September 2023.
- Credit concentration of banks was found to be high in the worst-case scenario with the highest three individuals bank borrowers failing to pay any of them, none of the banks will experience an increase in CRAR that is below the required regulatory threshold

of 9 percent. Three banks could be able to see a decrease in CRAR less than 11.5 percent - which is the minimum regulatory requirement, which includes CCB.

- Capital Adequacy Ratio (CAR)
- The ratio is what a bank's assets are its risk. It's also referred to by the Capital to Risk (Weighted) Assets Ratio (CRAR).
- In another way, it's the ratio of a bank's capital its risk-weighted assets as well as current liabilities.
- This ratio is used to protect depositors and increase the stability and efficiency of financial systems around the globe.
- It is calculated by adding the bank's tier 1 capital and tier 2 capitals, and dividing the sum by its total capital assets that are risk-weighted.

Capital is classified into three categories according to BASEL III norms:

- Capital of Tier 1 can be described as the institution's main capital since it is the most important indicator of the strength of the bank's financials. The majority of the core capital is comprised of declared reserves (also called retained earnings) and capital that has been paid up. Additionally, it includes non-cumulative and not redeemable preference stock.
- Tier 1 Capital can be used to help finance the financial institution's business operations.
- It comprises Common Equity Tier 1 (CET1) capital as well as additional Tier 1 (AT1) capital.
- Common Equity Tier 1 covers liquid bank holdings, such as stock and cash. The CET1 ratio measures the bank's capital to its assets.
- Additional Capital of Tier 1 can be decomposed from instruments that aren't common equity.
- Level 2 Capital- It's used to supplement funding because it's less reliable than the initial tier. It is comprised of unidentified preferences shares, reserves along with subordinate and direct debt.
- Tier 3 Capital- this form of capital includes commodities risk, market risk risks, and foreign currency risk. It is the least dependable among the three.
- The buffer for capital conservation

- This was created during Basel III to make sure banks have an extra buffer of usable capital that they can draw down when losses are suffered. The buffer was enacted fully in the year 2019, and was fixed at 2.5 percent of the all risk-weighted assets.
- It has to be met by common Equity Tier 1 (CET1) capital only and is set above the minimum regulatory capital requirement.
- If the buffer drops below 2.5 percent, automatic constraints on capital distribution (for examples dividends, share buybacks and bonus payments that are discretionary) are imposed to ensure that the buffer is replenished.

Topic 4. EUROPEAN MARKET INFRASTRUCTURE REGULATION (EMIR)

Important for subject: Economy

Engaging with ESMA however, alternative arrangements are also being considered: RBI report

- ESMA has removed recognition for seven Indian clearing houses which includes CCIL beginning in May 2023. The move came due to the fact that Indian regulators were reluctant to sign a revised deal that gave the regulator the power to scrutinise, audit and scrutinise the operations or activities that are carried out by Indian clearing house operations.

Market impact

- With the withdrawal of CCP (central counterparty) recognition, large banks have to opt for indirect clearing settlements-introduces an element of systemic risk

Counterparty:

- An intermediary (sometimes the opposite party) is a legal entity, an unincorporated entity or a group of entities that there is a risk of financial exposure might exist.
- In the financial services industry, the market counterparty term refers to national banks, governments as well as national monetary authorities. International financial institutions like the World Bank Group that act as the sole guarantor of the loan and indemnities.
- Additionally, within financial services, counterparty can refer to the investment banks, brokers and other dealers in securities that act as contracting parties when it

comes to "over the counter" securities transactions.

Example:

- The Clearing Corporation of India (CCIL), supervised by RBI,
- Indian Clearing Corporation (ICCL), Multi Commodity Exchange Clearing (MCXCCL) as well as NSE Clearing (NSCCL) which is managed by Sebi; India International Clearing Corporation and the NSE IFSC Clearing Corporation (NICCL), supervised by the International Financial Services Centre Authority (IFSCA).

Clearing Corporation of India Limited (CCIL)

- CCIL was established on April 1, 2001, by financial institutions, banks and primary dealers, in order to serve as an industry-specific service organization to facilitate the clearing and settlement of transactions in the government securities, money market and foreign exchange markets.
- The Clearing Corporation plays the crucial function of an important Central Counterparty (CCP) in the government security, USD INR forex currency exchange (both forward and spot segments) and the Collateralised Borrowing as well as Lending Obligation (CBLO) markets.
- CCIL serves as central counterparty in which the contract between seller and buyer is replaced with two new contracts between CCIL and both parties. This is referred to as "Novation".
- By Novation, the counterparty's credit risk between buyers or seller can be eliminated by CCIL subsuming all counterparty as well as credit risk.
- Apart from the guarantee settlements, CCIL also provides non-guaranteed settlements to National Financial Switch (Inter bank ATM transactions) and also for rupee derivatives like interest rate swaps.
- CCIL also provides an online platform for reporting and also acts as an online repository of Over the Counter (OTC) products.

Indian Clearing Corporation Limited

- It was established in 2007 as an entirely own subsidiary company of BSE Ltd. ("BSE"). ICCL performs the duties of settlement, clearing collateral management, risk

management for the various sectors of BSE. ICCL is committed to acting as the principal counterpart for all trades it offers clearing and settlement services to.

- Multi Commodity Exchange Clearing Corporation Limited(MCXCCCL) has signed an agreement with Multi Commodity Exchange of India Ltd (MCX) to begin offering clearing and Settlement services to MCX.
- NSE Clearing Limited (National Clearing) formerly known as National Securities Clearing Corporation Limited (NSCCCL) is a wholly owned subsidiary of NSE was formed in the month of August 1995. The company was the very first clearing organization to be set up in the country. It was also the first clearing company in the country to implement settlement guarantees.

European Market Infrastructure Regulation (EMIR)

- It was approved by the EU in August 2012 as fulfillment of the G20 commitment to limit counterparty, systemic and operational risks, as well as improve transparency within OTC derivatives markets. OTC markets for derivatives.
- It was also developed to be a preventative measure in order to prevent any financial crisis similar to the one that was the result of in the aftermath of Lehman Brothers bankruptcy in 2008.
- Its main focus is on the regulation of the over-the-counter (OTC) derivatives central counterparties, trade repository.
- It offers guidelines regarding the reporting requirements for derivative contracts, the implementation of risk management guidelines and common guidelines for central counterparties as well as trade repository.
- It creates the common rules regarding central counterparties that interpose themselves between the parties in a contract, serving as the primary the point of every trade and trade repositories, who keep all the details of trades.
- It also defines three kinds of obligations that include the reporting, clearing and risk mitigation for applicable products
- It requires obligatory clearing obligations for certain OTC derivative contracts. These obligations demand that derivatives over-the-counter trades be cleared by central counterparties.
- EMIR demands that all businesses that enter into derivative contracts report to their

respective trade repositories, describing every trade that is made over the counter.

- EMIR is a term used to describe entities that are eligible for derivative contracts relating to equity, interest rate foreign exchange, commodities and credit derivatives.
- The risk mitigation guidelines set out in the EMIR's Article 11 impose risk management regulations on bilateral derivatives because these derivatives aren't suitable for the standard central clearing of counterparties.
- The article 25 in the EMIR mandates that CCPs in other jurisdictions around the world that provide the services of European banks , to get authorised by ESMA.
- India signed the agreement in 2017 and it expired on March 20, 2022.

Topic 5. HYPER- GLOBALIZATION

Important for subject: Economy

The post-1990s period of hyper-globalization is now over.

- World War I 1914-18 ended 1914-1918 marked the end of first "golden period" that was the globalization process from 1870 to 1914. During this time, the world's trade in goods grew from 10% to 16 percent of GDP.
- At the time that War War II started in September 1939, the percentage of the world's trade in GDP had plummeted to 5.5 percent. It slowly recovered thereafter to get back to pre-World War I levels in the late 1970s.
- From 1990 to 2008 world trade in goods surged between 15.3 percent to 25.2 percent of the world's GDP. 2nd golden era of hyperglobalization
- This world - "happy age" in the sense that Keynes would have put it - is set to come to conclusion in the year 2022 and has witnessed not just one but two wars that include the Ukraine Russia conflict and China-US conflict over economics.
- By the year 2020, global merchandise trade had declined to 20.8 percent of GDP and then to 26.9 percent for both services and goods.
- These two conflicts create the most collateral harm to the global trading system- From production that is based on the comparative advantage, and also from gains through trade. every nation is for its own today.

Hyperglobalization:

- Hyper-globalization is the drastic change in the scope, size and speed of globalization

that started in the latter part of 1990 and that continues to the beginning of the 21st century.

- It encompasses all three major aspects of economic globalization: cultural globalization and the political dimension of globalization.

Difference between Globalization and Hyper-Globalization

- The International Monetary Fund defines Globalization as the process by which world financial markets and trade are becoming more interconnected.
- Hyper-globalisation is described as the explosive growth in global trade that was observed for around 10 years and a half beginning in the beginning of 1990. This led to an unprecedented transfer of capital as well as of people.
- The most significant distinction is the how fast globalisation processes take place.
- Theoretical and economic theories of trade:

French philosopher Montesquieu

- He stated that "commerce can be a remedy of the most harmful preconceptions" in addition to "peace is the result of commerce".
- Duox Commerce takes inspiration from Montesquieu who argued that commerce makes people less susceptible to violence or to irrational behavior.

Adam Smith

- Adam Smith's theory of the absolute price advantage for international commerce created as a powerful reaction to the protectionist and restrictive global trade mercantilists.
- He argued in this theory the need for open trade, which is the most solid guarantee of a steady growth of trade and the economic prosperity of nations.
- Each country has a tendency to concentrate on the export and production of the commodity it can produce the cheapest.
- If countries focus in the pursuit of absolute advantages in cost they are likely to benefit from international trade in the same way that tailors do not design his own shoes, and a shoemaker does not sew his own suit. Both gain from the exchange of clothes and shoes.

David Ricardo

- Ricardo's highly acclaimed theory of comparative advantage proposes that nations could benefit from an advantage in international trade by focusing on the production of items that result in the lowest cost of opportunity when compared with other countries.
- He demonstrated this by giving an illustration of two nations producing two products.
- Imagine it took 100 hours create one cloth and 120 hours to make one bottle of wine in England however, Portugal required just 90 hours to make the first, and 80 hours to make the second. It is evident that Portugal had the advantage of making both products.
- Ricardo claimed it made sense to allow England to just manufacture cloth, and for Portugal to be a specialist in wine. This would lead to 2.2 unit of cotton as well as 2.125 bottles of wine made over 220 and 170 hours within England as well as Portugal respectively. The two countries would be better off making one quality (England cloth, and Portugal wine) while importing the other.
- The belief in the concept of comparative advantage is what triggered an era of second gold of "hyperglobalisation" following 1990.
- Example China's percentage of world trade in goods to have increased from 1.8 percent in 1990 to 11.1 percent in 2012. The figure is this, even though the shares of the other countries fell: Germany (12% to 7.6%) as well as the US (11.3 percent to 8.4%) as well as Japan (8.2 percentage to 4.3 8.2% to 4.3).

John Maynard Keynes:

- Keynes suggested that an insufficient demand for goods and services could cause long periods of high unemployment.
- The output of an economy's products and services is the result of four parts of consumption, investment government purchases, net exports (the difference between what a nation sells to and purchases from other country) i.e. increase exports and decrease imports.
- Demand growth has to be derived from one of these four elements so that the country's levels of income and employment.

Topic 6. MANUFACTURING SECTOR -THE FDI INFLOW

Important for subject: Economy

Despite efforts by the government to encourage more investment in the manufacturing sector the flow of FDI is biased towards the service sector, according to the India Ratings and Research (Ind-Ra).

- According to the World investment Report 2022 of the United Nations Conference on Trade and Development (UNCTAD), India is one of the Top 10 (ranked 7) countries for FDI globally.
- Of the emerging market economies India is doing fairly well at attracting foreign direct investment. Only China has been always in front of India.
- The largest FDI flowed into the services sector then the production industry (excluding computers) between April 2000 and March 2014 and from April 2014 until March 2022.
- While in the field of services, FDI predominantly flowed into telecommunications, trading, IT/business outsourcing, banking/insurance and tourism, while within manufacturing, it was mostly in sectors like auto, chemicals, pharmaceuticals and pharmaceuticals, metallurgical, and food processing.
- The FDIs are heavily concentrated in a handful of states.
- In the total FDI flow of \$146.7 in the months of October 2019 to March 2022, only four states drew 83.0 percent of the FDI. Maharashtra making up 27.5 percent, Karnataka 23.9%, Gujarat 19.1 percent, and Delhi 12.4 percent.
- In the end, three distinct corridors for FDI have emerged: NCR in Delhi to the North, Maharashtra and Gujarat in the west and Karnataka Tamil Nadu Pradesh-Telangana to the South.

Foreign Direct Investment

- A person or company that is located in a foreign nation into another country is known as Foreign Direct Investment. Typically, FDI happens when a foreign company acquires control or ownership of an corporation in a specific country, or creates businesses in that country.
- It is distinct from portfolio investments in foreign countries where the foreign entity

simply buys equity shares from the company.

Three Components:

- Equity capital is the direct foreign investor's purchase or purchase of shares of an organization in a nation that is not its own.
- Earnings reinvested comprise direct investors' portion of earnings that are not given as dividends to affiliates, or profits that are that are not returned directly to direct investors. These retained profits of affiliates are reinvested.
- Intra-company loan or the intra-company loan transactions refer to either shorter long-term borrowing and loans in the form of loans between investors directly (or companies) and affiliate companies.

Routes through the channels through which India receives FDI:

- Automated Route The reason for this is that the foreign company does not require prior approval from authorities or RBI.
- Government Method In this scenario the case, the foreign entity is required to obtain permission from the government.
- The Foreign Investment Facilitation Portal (FIFP) provides a single point of contact for approval of applications that go by way of approval.
- It is run through it's Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

Trends:

- India was the recipient of foreign Direct Investment (FDI) inflows of USD
- 339.55 billion over the past five years. It grew in value from 45.15 billion between 2014 and 2015, to USD 81.97 billion by 2020-21.
- According to the World Investment Report 2021 released by UNCTAD, the UN Conference on Trade and Development (UNCTAD), India was the fifth largest beneficiary of Foreign Direct Investment (FDI) flows in the world in the year 2000.
- In the financial year 2020-21 India is expected to grow by 10 percent (to \$82 billion) in foreign Direct Investment (FDI). Equity investments in FDI grew 19%, reaching \$60 billion.

- In April of 2020 the DPIIT released the new rule that declared that the business of any business that has an area bordering India or is located in the country where the owner of the investment in India is located in or is a resident of that country may invest only via an official route. That is, these companies can only invest with their approval by Indian government. Government of India.

Fiscal year 2021 - 22

- Foreign Investment, comprised of the foreign direct investments (FDI) as well as Foreign Portfolio Investment (FPI) is the most significant part of the capital account.
- Not quite at the pre-pandemic levels as there was a net decrease in foreign flows (FIIs) which are mainly driven by FDI - slowed to US\$25.4 billion in H1 25.4 billion in the first half of FY 22, compared with the same period in FY 21.
- The total foreign direct investment (FDI) flows into India decreased in the year 2021 to \$74.01 billion in 2021, the year of the calendar. an increase of 15 percent when compared with the calendar year 2020.
- Sectors with the most equity inflows of FDI-Computer Hardware and Software
Automobile Industry > Services Sector> Telecommunications > Trading

The top FDI investment countries

- Singapore>U.S.A.>Mauritius>Netherlands>Japan

Topic 7. WORLD ECONOMIC LEAGUE TABLE (WELT)

Important for subject: Economy

The Centre for Economics and Business Research (CEBR) is an economics consulting firm based in the UK forecast that India will climb from fifth on the World Economic League Table (WELT) in 2022 and rise to third in 2037.

- Despite a slowdown in global demand and a tightening of monetary policy India is projected to grow in the fiscal year 2022-22 at 6.8 percent.
- The report stated that in the next five years the annual growth of GDP is anticipated to be 6.4 percent and then to reach 6.5 percent over the next nine years.
- India was estimated to have a PPP-adjusted per capita GDP of \$8,293 in 2022, putting it as a middle-income or lower country.

- PPP GDP is the gross domestic product which is converted into dollars that are international by using buying power parity rate.

Positive Prognosis:

- The economic recovery is driven by an increase in demand for domestic goods.
- The growth forecast for the near-term future of the Indian economy is driven through domestic factors i.e. small share of the external sector approximately 20.1 percent of India's GDP.
- The rate of inflation in India was lower than that of other major economies, and was mainly driven by inflation in the food sector- non-permanent in the nature of.
- Balance sheet twin issue looks to be improving with the ratio of debt to GDP for corporates at its lowest level in over 10 years and with a lower NPA.
- Reduced pressures on input costs and a rise in sales of corporates.

The rise in fixed assets

- The PLI scheme as well as the capital expense schemes run by the government-Fresh investments are expected to invest in electric vehicles, renewable energy sources and battery tech.
- Credit from banks has been growing at a rate of double-digits for the past more than a year now, which is reflected the increase in the appetite for investment.
- Term-lending to non-corporates increasing -- a positive indicator which suggests that smaller companies may be looking for money beyond their current working capital requirements.
- The Centre has seen record-breaking tax collections, both in GST and taxes on direct transactions that reflect the steady growth of the business sector. States also have reported a decreases in their deficits as well as net market borrowings.
- Agriculture has been a constant driving force for general GDP increase.

Centre for Business and Economic Research (CBER)

- CBER was once known as CBER was formerly known as Bureau of Business Research.
- This is an economy forecasting and policy research center. The center is located

within the UK.

- CBER research includes health care regional economies public finance research, energy sector studies, and transportation.
- The Cebr draws its basis data of the International Monetary Fund's World Economic Outlook and uses an internal model to forecast inflation, growth and exchange rates.

WELT:

- Since its debut in 2009 Cebr's World Economic League Table (known as the WELT) has been recognized as the standard measure for the economic performance of different nations.
- It is determined by taking an estimate of the GDP for the year in current dollars for all 180 world economies and forecasting the actual GDP, inflation, and exchange rates for every country for an interval of 15 years.

Topic 8. WEIGHTED AVERAGE CALL RATE

Important for subject: Economy

Private banks have continued to beat public sector banks in terms of credit growth, as per the most recent RBI figures.

- The proportion that private bankers make in the total credit was increased to 38.4 percent in September 2022. This is up from 37.5 last year as well as 29.6 percentage five years earlier.
- Personal credit was have increased by 21.9 percent in September 2022. This equates to one third of total credit increase.
- Growth in credit for the sector of industrial production remained for the fourth consecutive quarter.
- The proportion of people with the total credit market reached an record maximum of 44.4 percent in September 2022.
- Female borrowers comprised 22.6 percent of all borrowings done by individuals.
- Deposits grew slowly, at 9.9 per cent, as compared with the growth in credit of 17.5 percent in the past one year.
- The short-term weighted average call Rate (WACR) has been raised to 6.18 percent on December 16, 2022 because of liquidity issues in the banking systems.

What is the reason for credit offtake?

1. Low base effect due Covid
2. Rise in NBFCs
3. Retail credit is rising
4. The rising demand for working capital caused by inflation and the growth in capacity utilization ratio
5. Increase in demand for capex

The short-term weighted average (WACR):

- The rate of call money is an amount at which the short-term funds are lent and borrowed in the market for money.
- The term of the cash loan is one day.
- Banks make these kinds of loans to cover the gap in liability between assets and liabilities that are in compliance with the CRR and SLR statutory requirements, and to meet the unexpected need for funds.
- RBI and banks, as well as primary dealers and others are participants in the call-money market.
- Demand and supply of liquidity impact the call rate.
- A situation of tight liquidity leads to a rise in the call money rate, and vice versa. The weighted average rate (WACR) is the uninsured segment of the overnight market and is the most accurate indicator of the systemic imbalance in liquidity in the margin - is specifically chosen as the operational goal of the monetary policy of India.
- The operational procedure of the monetary policy is determined by the aim to align the the monetary policy's operational target policy that is that is, the WACR (weighted average call rate) with repo rates through active management of liquidity in line with the policy of monetary policy.
- After the repo rate of the policy is set the liquidity operations begin to ensure that the WACR closely aligned with the repo rate.
- Instruments for managing liquidity comprise fixed and variable rate repo auctions and reverse repo auctions. They also include completely open market operations (OMOs) Forex swaps, etc.
- A 14-day term repo/reverse operation at a variable interest rate executed in

conjunction to the Cash Reserve Ratio (CRR) maintenance period is the principal instrument for managing the requirements for frictional liquidity.

- The primary liquidity operation will be supported by the overnight or longer-term tenor operations to keep in mind any unanticipated fluctuations in liquidity.
- The Standalone Primary Dealers (SPDs) are permitted to directly participate in the management of overnight liquidity operations.
- When you find that the weighted average rate of call moves toward the reverse repo rate-the lower limit of the monetarist policy corridor will reduce the cost of funds for banks, just like a rate cut would have.

The corridor for managing liquidity from RBI:

1. Marginal Standing Facility (MSF) rate is its upper limit (ceiling)
2. Rate of the standing deposit facility as its lower limit (floor)
3. Rate of repo policy and reverse repo rate at central areas of corridor.

Topic 9. G-SEC

Important for Subject: Economy



Private banks have purchased bonds for a net value amount of 216.20 million in rupees (\$2.61 billion) in the month of March, which is the most since March 2020.

Cause:

- The growth in deposits-As banks' balance sheets increase the more they will remain on the investment books.
- A higher yield on bonds-with anticipation for (interest) rate reductions next year. Also, it will increase the value of the period of holding.
- Demand for increased supplies to meet statutory requirements for liquidity ratio (SLR) requirements.
- SLR is the minimum amount of deposits commercial banks must invest in liquid assets like government bonds and state debt.
- The current ratio is 18 percent.
- If the economy is experiencing an growth the pace of activity in the economy and growth, the velocity of money moving around increases , and the necessity to ensure that the liquidity of frictional (short-term cash) at banks is also increased.

Government Security (G-Sec):

- It is an instrument that can be used as a trading instrument issued by the Central Government or the State Governments.
- It recognizes the Government's credit obligation.
- These are short-term, usually called Treasury bills with initial maturities less than one year, or longer term (usually referred to as government bonds or dated securities with initial maturities for one to three years or longer).
- In India In India, the Central Government issues both bonds and treasury bills or date-dated Securities while there are the State Governments issue just bonds or securities that are dated and are known as "the State Development Loans (SDLs).
- G-Secs are virtually risk-free of default and, therefore they are known as the risk-free giltedged instruments.
- The Public Debt Office (PDO) of the Reserve Bank of India acts as the registry/depository of G-Secs. It also deals with the issue of the payment of interest and the principal repayment at the time of maturity.

- In addition to banks, insurance companies as well as other big investors smaller investors such as Co-operative bank, Regional Rural Banks, Provident Funds are also required to hold G-Secs in a legal manner.

Types:

- Treasury Bills (T-bills)
- Treasury bills, or T-bills that are also known as money market instruments and are short-term credit instruments that are issued by the Government of India and are currently issued in three tenors, which are three tenors: 182 day, 91 day as well as 364 days.
- Treasury bills are securities with zero coupon and do not pay interest. They are sold at a discount and then redeemed at face value at the time of maturity.
- For instance an 91-day Treasury bill for Rs100/+ (face value) can be issued at a rate of say, Rs 98.20 or with a discounted rate of, say, Rs1.80 and would be redeemable at the amount of its face value, which would be Rs100.

Cash Management Bills (CMBs)

- In the year 2010, Government of India, in collaboration with RBI launched a new short-term instrument, dubbed Cash Management Bills (CMBs) to address the short-term gaps in the flow of cash of India's Government of India.
- CMBs are a generic version of T-bills, but they have maturities of less than 91-days.

Dated G-Secs

- Dated G-Secs are bonds that come with either a floating or fixed rate (interest rate) that is paid according to the face value on a semi-annual basis.
- The tenor generally of date-stamp securities can range from 5 years to 40 years.
- The majority of the dated securities have fixed coupons.

Types:

- Fixed-Rate Bonds They are bonds where coupons are fixed for the whole time (i.e. until the expiration) that the bonds. The majority of Government bonds issued in India can be purchased as fixed rates bonds.

- FRBs (Floating Rate Bonds) (FRB)- FRBs are bonds that don't have an annual fixed rate of coupon. Instead, they have an adjustable coupon rate that is set at intervals that are pre-announced (say each six months or a year). FRBs were first introduced on September 15, 1995, in India.
- It is also known as a Floating Rate Bond. floating rate bond can be accompanied by a coupon, which will be the base rate as well as a fixed spread to be determined via auction. The spread will remain fixed throughout the duration that the bond.
- Zero Coupon Bonds Zero Coupon Bonds have no coupon payment. But, as with T-Bills, they are sold at a discount and can be redeemed at their face value. They were issued by the Government of India had issued the securities in the year 1996. They have never issued bonds with zero coupons following this.
- Capital Indexed Bonds These is a type of bond, where the primary amount of which is tied to an approved index of inflation, with an intention of protecting the principal amount of investors from the effects of inflation.
- The Inflation Indexed Bonds (IIBs) (IIBs) IIBs can be described as bonds in which both principal and coupon amounts are secured against inflation. The inflation index that is used in IIBs could comprise Wholesale Price Index (WPI) or Consumer Price Index (CPI). IIBs first came out in 1981 by the UK.
- Bonds with Put or Call Options Bonds may additionally be issued using options which allows the issuer the option to buy back (call option) or the buyer may choose of selling the bond (put option) to the issuer in the period of the bond's currency. It is worth noting that bonds with these features may come with calls only, put only and both choices.
- Special Securities Under Market borrowing which is administered by government of India Government of India also issues periodically special securities to organizations such as Oil Marketing Companies, Fertilizer Companies as well as Food Corporation of India, Food Corporation of India, and so on. (popularly known as fertiliser bonds, oil bonds and food bonds) as a form of compensation to these firms instead of cash subsidy These are typically longer-dated and have slightly higher yields than the yield of dated securities with similar maturity.
- They are, however not eligible to be SLR security, but they can be used as collaterals to market repo transactions.

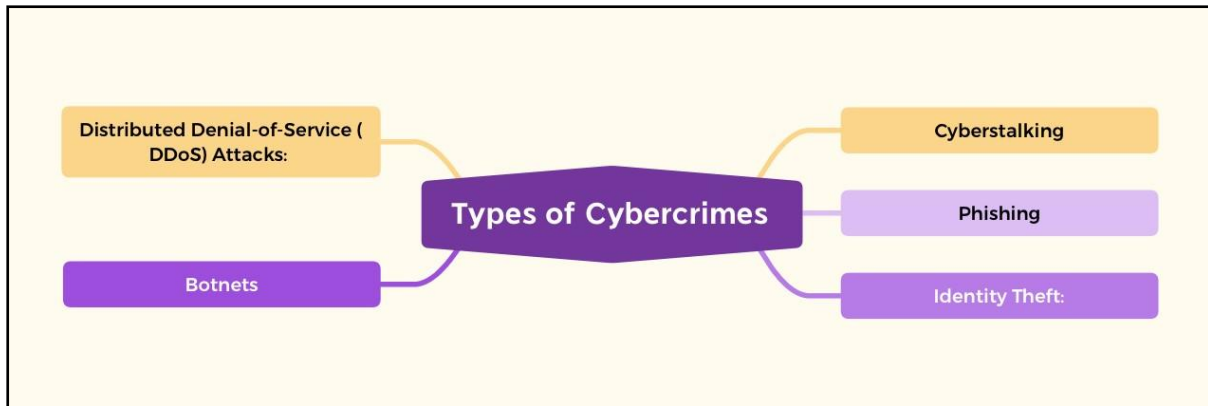
- The beneficiaries may sell these securities on an auction to insurance companies, banks, or primary dealers, etc. in order to raise funds.
- Banking Recapitalization Bonds-These security are known as Special GoI security . They are non-transferable, and therefore not investment eligible in the context of any statute or guidelines that apply to investment banks.
- These securities are available in the HTM portfolio with no limits.
- STRIPS - Separate Trading of Registered Interest and Principal of Securities. The STRIPS are securities created through disaggregating the cash flows with a G-Sec regular i.e. every semi-annual coupon payment, and the principal payment that is due from the issuer into distinct securities.
- They are in essence zero coupon bonds (ZCBs). They are however, created from existing securities and unlike other bonds they cannot be issued through auctions.
- Sovereign Gold Bond (SGB): SGBs are distinct instruments, their prices which are tied to commodity price, namely Gold.
- Savings (Taxable) Bonds-These Bonds are exempt from the tax on wealth pursuant to the Wealth Tax Act, 1957. The Bonds are issued on par value for an amount not exceeding 1 lakh (face price) or in multiples of it.

State Development Loans (SDLs)

- State governments also borrow money through the market. These are known as SDLs.
- SDLs are securities with a date that are which are issued by auctions that are similar to auctions held for securities that are dated that are issued from Central Government. Central Government.
- Similar to Securities that are dated issued through government agencies like the Central Government, SDLs issued by State Governments too can be considered SLR.
- They can also be used as collaterals to borrow through market repo, as in the borrowing of eligible entities from the RBI under the Liquidity Adjustment Facility (LAF) and special repo that is conducted in market repo by CCIL.
- State governments has also released special security under the "Ujjwal Discom Assurance Yojna (UDAY) Scheme to turn around the financial and operational aspects of Power Distribution Companies (DISCOMs)

Topic 10. LEVERAGING VOICE TECHNOLOGY TO COMBAT CYBER-FRAUD

Important for subject: Science and Technology



Cyber-fraud:

- It's a scenario in that someone makes use of the internet to obtain money or goods and other items from individuals illegally, by swindling them. Not only does cyber fraud cause losses to the cardholders but also the merchants, the banks that are owned by merchants and card issuers.

Cyber-crimes on India:

- According to the data of the Reserve Bank of India, frauds have cost the country 100 crore per day in the past seven years.
- The number of frauds recorded for 2021-22 were 23.69 percent higher than the prior year (9,103 cases) as compared to 7,359 cases reported in 2020-21) However, there was a drop in the amount of money involved.
- The principal motives behind the increase in fraud include the increasing usage of digital payment systems as well as telephone banking and internet-based banking.
- A growing amount of fraud means increasing loss for banks as well as more instances that law enforcement agencies have to resolve.

A new technology that is being developed to fight cybercrime:

- This is also known in the field of Adopting Voice Technology (VT).
- It encompasses voice biometrics and technology for speech/speech recognition.
- It makes use of the distinctive features of a person's voice for the basis for identification.

- This technology creates an electronic voiceprint and analyzes it against the voice of the caller.
- Vocal authentication can dramatically increase security over the use of knowledge-based authentication methods which fraudsters have exploited to defraud individuals.

The benefits that this technique offers:

- In comparison with the other biometrics, the use of voice can be considered the lowest-cost technology and doesn't need a scanner or specialized equipment.
- It's also non-invasive and mobile, and provides remote identification.
- While banks have historically relied on passwords, passwords are by far the weakest security link (81 percent of security breaches are caused by insecure passwords).
- Like passwords one can't use the user's voice will be virtually impossible to copy or spoof, and is far more difficult to hack.
- VT checks a caller quickly in a matter of minutes by analyzing the tone of the caller's voice, and flags suspicious calls. VT provides privacy as it doesn't need users to divulge private information.
- Biometrics for voice can assist financial institutions ensure more security for employees and customers.

Perspectives for the biometrics industry for voice:

- The month of Feb the year 2019, HSBC became the first institution to take the huge leap of offering the use of voice recognition to customers who use mobile banking phone fraud cases involving banking decreased by more than 50 percent.
- The business of voice biometrics is expanding exponentially right now.
- Analysts predict that the market will grow to \$3.9 billion in 2026. This will be accompanied by an annual compound growth rate of 22.8 percent.

Application development:

- An indispensable instrument for law enforcement.
- Security at airports can be improved by using voice biometrics since it has lower errors as compared to face recognition.
- It also has the capability to deter playback attacks.

- It's sensitive enough to tell whether someone is acting as the user or recording an audio recording.
- It is possible to determine when the patient has an infection or cold throat.
- The disbursement of funds for different schemes
- Check the identity proof of pensioners who live in their home.

The VT format has one following advantages:

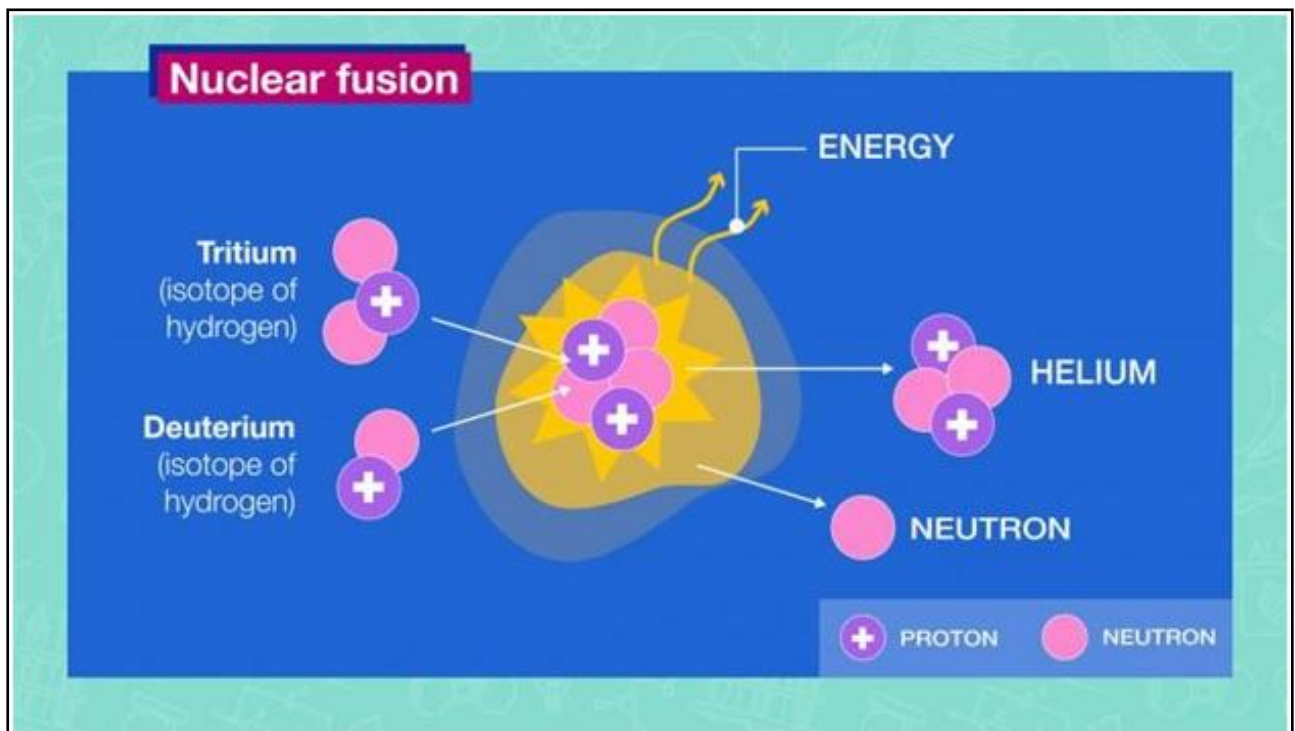
- Enhancing the user experience
- Reduced time spent on call handling
- Costs for call centers

Disadvantages:

- There is no guarantee that it will be sure, but it can provide false positives, and is accurate between 95% and 99%..
- Some recent systems, which include voice analytics for gender and age offer 100% verifiability accuracy.

Topic 11. FUSION ENERGY MAY NOT BE TOO FAR AWAY

Important for subject: Science and Technology



The breakthrough made by US National Ignition Facility has put the spotlight on nuclear Fusion. NIF has reported the net gain in energy (more output than input) that is believed to have resulted from two hydrogen atoms joining to form a helium nuclear.

- Commonwealth Fusion Systems (CFS) is building the first fusion device in the world that creates plasmas that produce greater energy and power than what they use, making it the first fusion device that is net-energy. The machine, named SPARC is being used for demonstration purposes, but the commercialization of the plant is expected to be built in the near future.
- Headquartered in Cambridge, Massachusetts, USA, Commonwealth Fusion Systems (CFS) was set up in 2018.
- CFS intends to build the prototype plant, SPARC, by 2025 and the commercial plant in 2030.

Different types of nuclear-fusion

- In nuclear fusion there are two parts -hot and cold. In contrast, NIF, ITER and CFS focus on hot nuclear fusion, ITER and CFS work on cold.
- Hot fusion occurs when the temperature must be six times more hot than the sun's core.

Nuclear reaction with low energy (cold Fusion):

- The theory of cold fusion suggests a type of nuclear reaction which occurs at or close to, room temperature.
- There is no current accepted theoretical model that allows cold nuclear fusion to take place.
- The year 1989 saw two electrochemists Martin Fleischmann and Stanley Pons discovered that their device had generated unusual temperatures ("excess energy") in a quantity they claimed was incomprehensible beyond nuclear processes.
- They also mentioned that they could measure the small amount of nuclear reaction with the help of products, which includes neutrons and
- The tiny tabletop experiment involved the electrolysis of water that was heavy across the face of an electrode made of palladium (Pd) electrode.

Comparison of Cold and Hot Fusion:

- Cold Fusion
- Hot Fusion
- Only occurs in specific solids.
- Reacts to moderate energy, but isn't needed.
- Uses protium (H) or Deuterium (D).
- It is a major source of Helium (He) whenever D is employed.
- Produces a small amount of radiation.
- It is possible to initiate the process in basic devices that have high O/I levels.
- It is a theoretical concept.
- It occurs in plasma, or when sufficient energy is utilized.
- It requires a lot of energy.
- Tritium and deuterium are used in conjunction
- It creates neutron and helium
- Produces significant radiation
- It requires a massive machine to create the highest O/I.
- Recently, net positive electricity has been generated through hot nuclear fusion technology.

Topic 12. GOVERNMENT CHARTS TO BOOST GAMING, ANIMATION AND VFX SECTOR

Important for subject: Science and Technology

The government is exploring ways to increase the popularity of the animation, visual Effects, Gaming and Comics (AVCG) sector in the country.

- In a gazette published by the government, MeitY currently serves as the official agency that regulates online gaming.
- The Ministry of Electronics and IT (MeitY) will soon issue rules on online gaming platforms and begin public consultations on the rules.
- This decision is in accordance with the government's plan to encourage the expansion of the animation video effects video games, as well as comics (AVGC) sector and help make India an international hub to play online.

- The committee on AVCG sector expansion: An inter-ministerial task team led by Information and Broadcasting Secretary Apurva Chandrahas made the suggestions.
- The committee was created in the Information & Broadcasting ministry.
- Video games based on Ramayan and Mahabharat and an exclusive Doordarshan channel specifically for kids that encourage indigenous animation, at minimum two teachers at each school that provide relevant training and special degree courses recognized by the UGC are included in the recommendations of the committee.
- The committee has also suggested an 'Create in India' and 'Brand India' campaign.

The four principal suggestions of the committee are:

- Domestic Industry Development for Global Access
- Building a Talent ecosystem that can realize Demographic Dividends
- Enhancing Technology & Financial Viability for Indian AVGC Industry
- Infusing India's soft power through an inclusive growth
- Animation Gaming, Visual effects and Comics Extended Reality (AVCG- XR) sector:
- At present, India contributes between \$2.5 to 3 billion dollars to an estimated \$260-\$275 billion globally AVGC industry.
- The AVGC sector has grown by 16% per year.
- In the AVGC industry within India has 1.85 lakh employees, and an additional 30,000 are employed in indirect ways.
- The AVGC industry currently represents almost 1% of global market.
- India's share of the market could increase to 6%, and the sector is poised for creating 2 million new jobs over the next 10 years.
- AVGC was a dawn sector following the advent of information technology.
- India's share of new players (NPU) in the field of gaming has grown the fastest worldwide for the past two years, at 40 % for 2020. It will be 50% in 2021.

Topic 13. KEEPING UP WITH VIRUSES: DISCOVERIES IN 2022 TO KEEP AN EYE ON

Important for subject: Science and Technology

COVID-19, a complication of CoV-2, the cause of SARS create havoc throughout the world, scientists have discovered new viruses that show how diverse the microcosm is.

- A brand new, possibly risky cousin to SARS-CoV-2 Khosta-2 coronavirus that was found among Russian bats has potentially harmful characteristics.
- The virus is closely linked to SARS-CoV-2. Khosta-2 was first discovered at the end of the year 2020 and can also infect human cells.
- The virus can use its spike protein to latch on to a receptor protein called angiotensin-converting enzyme 2 (ACE2), found throughout human cells and make its entry.

The virus in Swiss ticks

- A tick-borne disease that was first discovered by a tick in China in 2017 was discovered in Switzerland.
- It is Alongshan virus is an flavivirus which is one of the class of viruses known as RNA which are transmitted by ticks and mosquitoes.
- Dengue, West Nile Virus and Zika virus are all part of this genus. It is responsible for the infection of as many as 400 million individuals each year.
- The virus that is at issue causes the tick-borne disease Encephalitis. The symptoms include headaches and fever.
- Scientists are warning they are concerned that it could cause an issue for public health within Switzerland. In the year 2019, Alongshan disease also was discovered in the south-eastern region of Finland.

Spillover threat from new viruses:

- Researchers have identified that the Kiwira virus (circulating through bats) in Tanzania and the Democratic Republic of Congo.
- The virus that is being introduced is a kind of Hantavirus which is spread by bats and rodents.
- It is believed to cause kidney and respiratory diseases in humans.

Virus in China:

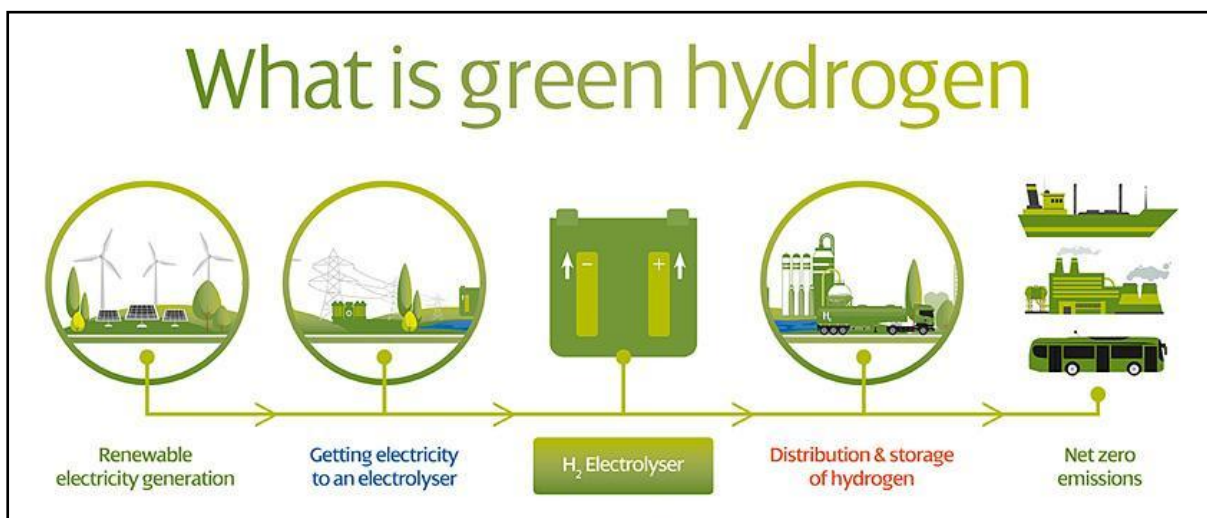
- Chinese researchers have announced a brand new henipavirus called Langya Henipavirus (LayV).
- Henipaviruses are a species with members include closely-related Hendra virus as well as Nipah virus.
- The group has become a potential threat in the Asia-Pacific region.
- The latest virus takes its name from the town of Langya located in Shandong, an eastern Chinese province in China.
- LayV does not pose any significant risk since they aren't dangerous nor deadly.

A new virus may be able to control pests that affect agriculture:

- The study was conducted in China, two new insect-specific virus were identified on the green leafhoppers that are a significant agricultural pest in 2022.
- CicadellaViridisiflavirus 1 andCicadellaViridisNido-like virus 1 could potentially be used to control the pest population

Topic 14. INDIA IS ALL SET TO GO FOR ITS FIRST WASTE-TO-HYDROGEN PROJECT

Important for subject: Environment



Pune Municipal Corporation (PMC) has joined forces with business venture The Green Billions (TGBL) to handle its waste and convert it into green hydrogen that can be used.

- The TGBL's specially designed vehicle, or its subsidiary Variate Pune Waste to

Energy Private Ltd, will carry out the work.

- The first project in India to convert waste into hydrogen:

The facility that will be used to create hydrogen from waste materials will address two of the biggest issues:

- Carbon emissions and inefficient management of waste.
- Variate Pune Waste to Energy Private Ltd will manage and utilizing daily municipal garbage of around 350 tons (TPD) to generate hydrogen for the next 30 years.
- The waste is biodegradable, non biodegradable and household hazardous waste.
- The hydrogen that is produced at the facility will be used locally to assist the city reduce its carbon emissions.
- By this project, Pune city can cut down on up to 2.5 million tonnes of carbon dioxide equivalent. more than 3.8 million tons of trash will get diverted away from landfill or dumping site and over 180,000 households are expected to be directly served.

The technology employed within the facility:

- Optical sensors will be used for this purposes.
- The Refuse-Derived Energy (RDF) made from leftovers could later be utilized to create hydrogen through plasma gasification.
- The technology was developed in close collaboration closely with Bhabha Atomic Research Institute (BARC) as well as BARC, the Indian Institute of Science, Bengaluru.
- It is thought that 150TPD of RDF as well as nine tonnes of H₂ could be produced from 350 TPD of waste.

Benefits of the waste-to hydrogen plant:

1. Green energy sources for production
2. Sustainable and efficient waste management
3. Carbon footprint reduction
4. Steps to meet India's climate targets
5. Methane emissions are reduced due to the reduction of landfill use

Utilization of Waste-to-hydrogen Plants:

- Waste-to-Energy facilities are not viable in the event that the plant is able to process at minimum 300 tonnes per day.
- WTE plants must be constructed in cities that have a population of more than 2 million.
- The project will handle 350TPD of waste in Pune, which has an estimated population of seven million.
- Mahatma Phule Renewable Energy & Infrastructure Technology (MAHAPREIT) is an Maharashtra government-owned enterprise has proposed to make use of the hydrogen produced by this facility and to develop logistics infrastructure for transporting hydrogen to industry to facilitate this.

Topic 15. INDIA'S FIRST PROJECT TO CONSERVE NILGIRI TAHR TAKES SHAPE

Important for subject: Environment

The initial Nilgiri Tahr project to conserve the State animal from Tamil Nadu will be undertaken with a price of Rs25.14 crores.

The project's background:

- Announced at the Tamilnadu state budget for 2022-23.
- This project is planned to be carried out over five years, 2022-27.
- The project will consist of nine parts, which include bi-annually scheduled surveys that are synchronised across the division as well as diagnosis and treatment for people affected, as well as The Shola the grassland restore pilot project in Upper Bhavan.
- The Project Nilgiri Tahr of Tamil Nadu Forest is designed in restoring the degraded habitat, particularly Shola grasslands, where it thrives. It also aims to reintroduce Tahr population back to its original habitat, and ensure that proper rehabilitation facilities are in place.

About Nilgiri Tahr:

- The Nilgiri Tahr (*Nilgiritragus Hylocrius*) is an ungulate which is native within the Nilgiri Hills and the southern part of Western as well as Eastern Ghats in the states of

Tamil Nadu and Kerala in the southern region of India.

- It is the official animal for Tamil Nadu.
- Despite its name in the local language It is closely connected to those sheep of the Genus *Ovis*, the Ibex as well as wild goats in the Genus *Capra*. This is also it is the only species belonging to the species genus *Nilgiritragus*.
- The estimated population of the species is to be 3122 living in wild according to the census of WWF-India in 2015.
- Eravikulam National Park is home to the biggest human population.

Habitat and distribution:

- The Nilgiri Tahrcan be only found in India.
- It's part of it's wide open pastures of the South Western Ghats montane rain forests ecoregion.
- In elevations ranging from 1,200 - 2,600 m (3,900 to 8,500 feet) The forests break are a vast grassland, and are surrounded by areas of stunted forest, locally referred to as sholas.
- The prairie habitats are protected by dense forest at lower levels.

Threats comprise:

- Most of the time, threatened by habitat destruction and disturbances due to invasive species and in some areas by poaching, livestock grazing, and the fragmentation of landscapes.

Topic 16. RED SEAWEED PROMISES A GREEN ALTERNATIVE TO PLASTIC

Important for subject: Environment

National Institute of Ocean Technology (NIOT), Chennai, holds out hope that biopolymers from red seaweed (*Kappaphycus alvarezii*) incorporated with nanoparticles could substitute plastic in certain applications.

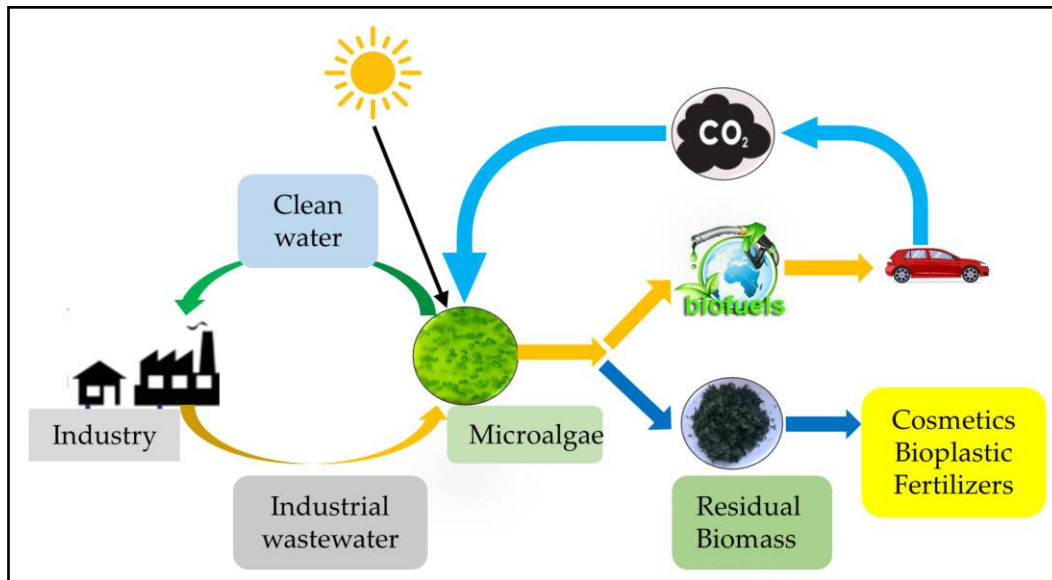
- The whole seaweed *Kappaphycus alvarezii* (containing carrageenan) was used in preparing the bio-nanocomposite film by blending with metal oxide nanoparticles such as zinc oxide, cupric oxide and silicon dioxide. Then its properties were compared with standard refined commercial-grade carrageenan.

- Red seaweed or Kappaphycusalvarezii:
- Kappaphycusalvarezii, the elkhorn sea moss, is a species of red algae.
- The elkhorn sea-moss is different in weight, size, and the time of its.
- It's it is a dark brownish green and may also be deep violet.
- Carrageenans:
- Carrageenins, also known as carrageenins, are an organic family of linear sulfated polysaccharides taken from red seaweeds.
- Carrageenans are extensively used by the food and beverage industry due to their ability to gel, thicken and stabilizing capabilities.
- Their principal use is in meat and dairy products due to their high binding to proteins in food products.
- Carrageenans have been identified as a promising option for the field of tissue engineering and regenerative medical applications due to their resemblance to the glycosaminoglycans native to our bodies (GAGs).
- They are used mainly for covering wounds and for drug delivery.
- What are Biopolymers?
- Biopolymers are polymers that are produced naturally by living organisms.
- As with the other types of polymers, biopolymers are made up of monomeric units connected by covalent bonds to make larger molecules.
- Biopolymers that are derived from biomass plant are sustainable as well as biodegradable and environmentally-friendly.
- Types of Biopolymers:
- Biopolymers are classified in a variety of ways. These classifications are based upon their origins, their composition, and the amount of monomeric units and the basis of their degradability and heat response, among others. The classifications include:
- On the Basis of Type:
- Sugar-based polymers Sucrose or starch is used as an input to manufacture. Lactic acid polymers are made by utilizing lactose extracted from potatoes, maize,
- Polymers made from starch: Starch acts as natural polymer composed of glucose. It is present in the plant tissues.
- Biopolymers based on cellulose: Used for packaging This polymer is made of glucose derived from natural sources, such as cotton. Eg. cellophane.

- synthetic materials The degradable polymers are created from synthetic materials that are derived from petroleum.
- On the Basis of Origin:
- Natural biopolymers They are biopolymers that naturally occur in produced by living organisms.
- Synthetic biopolymers These are made up of renewable substances like polylactic acid, which is degradable.
- Microbiology: The biopolymers created by microorganisms.
- On the Basis of Monomeric Units:
- Polysaccharides: These are carbohydrate chains that are branched or linear. Examples include. starch, cellulose, etc.
- Proteins The polymers are made comprised of amino acids. collagen, fibrin etc.
- Polynucleotides Nucleic acid are lengthy polymer chains made up from 13 monomeric or greater units. Eg. DNA, RNA
- Examples of Biopolymers:
- They are the naturally-derived rubbers (polymers of isoprene) suberin, lignin and suberin (complex polyphenolic polymers), cutin and cutan (complex polymers made of long-chain fatty acid) as well as melanin.
- Usage of Biopolymers:
- Biopolymers are used in a variety of sectors, such as manufacturing in the food industry packaging, biomedical engineering.
- These include bioplastic film to make packaging as well as biomedical scaffolds and grafts 3D printing inks as well as controlled drug delivery biosensors and microbial fuel cells for electric vehicles.
- Polysaccharide extracts from seaweed-- biopolymers derived from carrageenan -- are currently utilized in companies in the industry of food. However, this extraction requires chemical solvents and solvents that can also produce waste.

Topic 17. WATER-BIODIESEL COCKTAIL CUTS GREENHOUSE GAS EMISSIONS

Important for subject: Environment



The use of biodiesel to power trucks can aid in reduce greenhouse gas emissions from automobiles.

- Pollution, but the problem is that biodiesel emits more nitrogen oxides than fossil diesel.
- It further has the smaller calorific amount that means that you will need to use more to fill up your tanks.

'Micro-explosion' phenomenon:

- Researchers say mixing biodiesel and water addresses these issues.
- The early vaporisation of water within the fuel droplet raises its temperature, creating a phenomenon known as micro-explosion, which results in tiny fuel fragments, thereby increasing the air-fuel mix and decreasing soot production.
- One can expect improved engine performance, lower emissions, and less soot.

Concerns with mixing biodiesel with water:

- Water and Biodiesel are not compatible.
- However, the issue can be addressed with the help an emulsifier. It is typically one of

the chemical compounds that are referred to as surfactants.

- A mixture of surfactants referred to as "Span80" as well as Tween80 is utilized to accomplish this.
- However, the Span80-Tween80 is used for diesel and requires a different mix to make biodiesel.
- The durability of the emulsifier's stability is crucial because you can't afford to separate the water with the oil as this would cause problems like corrosion.

Solution:

- A mix of the Span80-Tween80 and two surfactants that are novel, polyglycerol poly ricinoleate (PGPR) and raw Karanja oil (RKO).
- PGPR is an affordable and commercially accessible food ingredient. RKO can be described as an example of a tree-based product. The new surfactant is consequently, a viable option.
- The problem is to determine the optimal combination of biodiesel and water, with the surfactant added.
- More water equals less tailpipe emissions. However, it also means a lower energy content in the fuel.
- Researchers have found that the ideal concentration of water is 18 percent, which reduces the amount of nitrogen oxide to 40 percent, smoke by 52 per cent, and carbon monoxide by 69 per cent.

Karanja tree (Pongamia pinnata):

- Pongamia pinnata is more commonly known in the subcontinent under names such as Indian beech, Mullikulam tree, karum tree, pongam, and pongam oil tree. The species has caught the attention of investors from around the world and companies who have pledged to zero net emissions.
- Pongamia pinnata is a versatile plant with a variety of uses from land remediation to carbon sequestration, to socioeconomic benefits like forest afforestation.
- The seeds are a great food source for (non-edible) oil. Pongamia seeds give out an oil that is yellowish-orange to brown and can be used to produce biodiesel through transesterification.

Topic 18. WRIT PETITION

Important for subject: Polity

The Delhi high court rejected the request of members of the Indian Airlines Officers Association seeking payment and allowance arrears.

More information about this News:

- The petitioner in their plea demanded the payment of arrears and allowances from 1 January 1997 through July 31, 2006.
- Attorney on behalf of Air India said the airline was privatised and the complete stake from that of the Government of India has been transferred to a wholly-owned company that is part of Tata Sons Pvt. Ltd and, consequently, the request cannot be based on article 226 in the Constitution since Air India was no longer an entity that was public in nature.
- Delhi High Court has refused to entertain a plea against Air India by the Indian Airlines Officers Association seeking pay and allowance arrears, saying the airline has ceased to be a government-controlled company and is no longer amenable to its writ jurisdiction.
- The court, when it disposed of the case, made clear it was clear that the petitioner is entitled to seek recourse to the legal remedies that are available under law before a suitable court or Air India shall be responsible to pay the debt if the claim is successful.

About Writ Petition:

- A writ petition can be made when the rights of a person are violated or are the victims of unfairness.
- A Writ is a written document that is issued by the court.
- The Indian laws, it is possible to may make or draft an writ petition at the High Court under Article 226 and in the Supreme Court under Article 32 of the Indian Constitution.

Article 32

- Article 32 is among the rights fundamentally guaranteed by the Constitution that

every citizen is entitled to.

- Article 32 addresses the right to constitutional Remedies The article also declares that it is possible to appeal to through the Supreme Court by appropriate proceedings to enforce the rights guaranteed by Section III of the Constitution.
- Only when fundamental rights are infringed, a person is able to make an appeal to for assistance from the Supreme Court directly under Article 32.

The High Courts and the Supreme Court are able to be contacted to inquire about the violation or enactment of fundamental rights by submitting five types of writs:

1. Habeas Corpus- relating to personal liberty when it comes to unlawful detentions and unjustified arrests
 2. Mandamus-- instructing public officials, government agencies or courts to carry out the statutory obligation;
 3. "Quo warrantoin order to prove the warrants of the person who holds public office.
 4. Prohibition-- directs authorities judicial or quasi-judicial to stop the proceedings that they have no authority to and
 5. Certiorari-- re-examination an order made by quasi-judicial, judicial or other administrative bodies.
- If there is a the violation of fundamental rights one can appeal to an individual to the High Court under Article 226 or the Supreme Court directly under Article 32. Article 226, however doesn't confer the same fundamental rights as Article 32.

Article 226

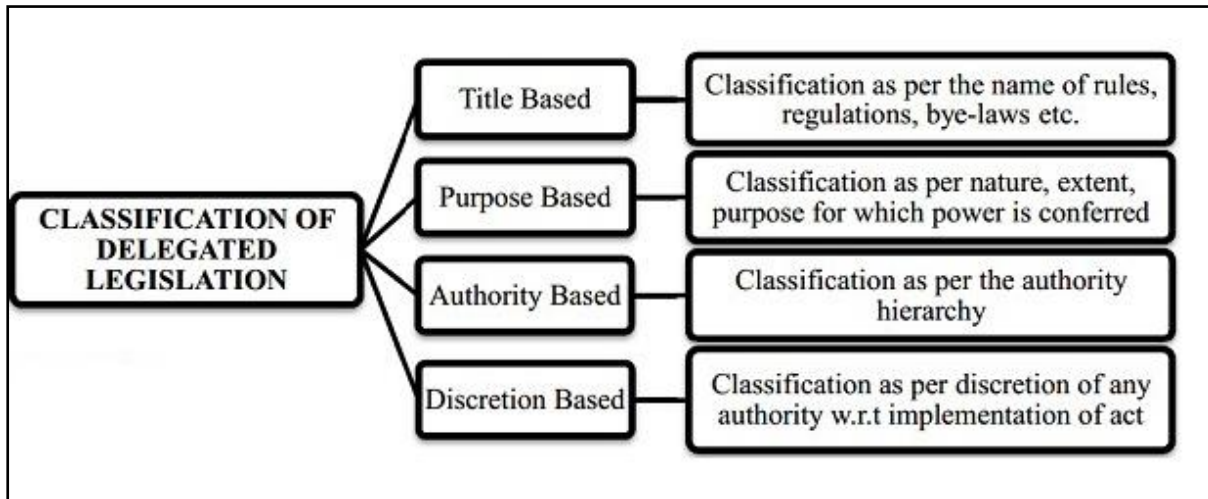
- Section 226 of the Constitution gives a high court the power to issue writs, including mandamus, habeas corpus certiorari, prohibition, and quo warranto to ensure the protection of the rights fundamental to citizens as well as for any other reason.
- The expression 'for any other reason' refers to the enforcement of a standard legal right.
- This suggests that the jurisdiction of writ for the highest court of appeal is more extensive than the one of the SC.
- This is due to the fact that the SC may issue writs to enforce fundamental rights, not for any other reason
- This means that they are not applicable to cases where the violation of a common

legal right is claimed.

- The High Court is able to issue writs to anyone or authority, not just within its territorial jurisdiction, but as well outside of its territorial jurisdiction when an action is within the territorial jurisdiction of the court.

Topic 19. DELEGATED LEGISLATION

Important for subject: Polity



Rules set by the Centre State are not able to override powers conferred by SC

More information about this News:

- SC decided on an appeal by the Kerala appeal by the electricity board. The court ruled that delegated laws including the rules and regulations need to not replace, surpass or violate the law that they draw their authority from.
- Delegated legislation must not extend beyond the jurisdiction of the parent Act. In the event that it is, it is ultra vires and is not able to be granted any legal effect.
- Ultra vires (acting over the limits of one's legal rights) can arise as a result of simple power excess or incompatibility with, or simply inability to comply with the legal requirements of the law that governs them.

About the legislation delegated to you:

- If an entity or an individual other than parliament makes the law, it's considered to be "delegated law," meaning that parliament has approved the law's development.
- The authority is enshrined by a primary legislation of the parliament, referred to as an

"enabling act" which sets the guidelines of the law and later confers authority on other bodies to develop more comprehensive legislation on the subject.

- A Act of Parliament sets the basis for a specific law and often contains a brief synopsis of the law's reasoning.
- When the Parliament delegates its legislative power in the direction of an Executive or another subordinate entity that is, the subordinate person or group within it are empowered to amend the law that is enacted.
- In this manner Parliament grants authority to others to draft rules and regulations through delegated legislation, which is enacted by necessity (such for example, An Act of Parliament).
- Any law approved by an authorized person must be based on one of the reasons that are listed within the Act of Parliament as its base.
- It may be necessary for legislators to delegate power in one or all of these reasons.
- to reduce pressure on to save time in the parliamentary session
- The legislation is either too complex or technical to be appropriate for consideration by the parliamentary committee
- to handle quickly changing or uncertain circumstances
- to ensure rapid action in the event in an emergency.

Topic 20. A RETELLING OF THE INDIAN MIGRANT WORKER'S PLIGHT

Important for subject: Polity

According to the World Migration Report 2022 of the International Organization of Migration (IOM), there were about 281 million foreign immigrants in the year 2020 and around two-thirds of them being labour migrants.

- There were 169 million people who migrated to the UK in the year 2019 and the number was 164 million in 2020.
- The percentage in South Asia is 40%. In addition, the South Asian-Gulf Migratory Corridor is considered to be the world's biggest migrant corridor.
- Long-term analysis of data has proven that migration is not consistent across the globe.
- It is influenced by economic geographical, demographic, and geographic factorsthat create distinct patterns of migration.

- The report stated that as a result of the "post-pandemic job hunt" about 300 Indian engineers from Tamil Nadu were trafficked to Myanmar to be employed by a scam using cryptography and around twenty Indian nurses were smuggled into India's United Arab Emirates for fake job solicitations.
- Kerala government statistics showed that 1.7 million individuals returned from abroad during the time of the pandemic (between June 2020 between June 2020 and the end of June in 2021) and 1.5 million were laid off from jobs.
- According to a document that was presented in the winter session Parliament, around 9 million Indian migrants work for the Cooperation Council for the Arab States of the Gulf (GCC) countries.

Associated Concerns:

- There is a contention that even though India is the biggest source of migrants and the largest remittance countries, the welfare of Indian migrants in other countries isn't prioritised by policy makers.
- It is also of grave worry that India does not have a concrete and comprehensive policy on migration to assure the safe movement of migrants as well as decent living conditions.
- India still regulates international migration with the help of the four-decade-old Emigration Act of 1983.
- The situation in several GCC countries is alarming. For instance, the system of exploitativeness that is Kafala has led to the exploitation of workers. Kafala system has led to massive reductions in the workforce.
- Kafala methodis defined as a system of sponsorship that regulates the relationships between employers and workers.
- COVID-19 has exacerbated the instances of under-employment, unemployment as well as a decrease in salary and even not paying salaries, compensation and even residual dues.
- Other common issues for workers who are migrant are the irregular payment as well as poor working conditions. the obliteration of rights to labour and the lack of grievance redress systems and inaccessibility to an effective judicial system.
- "Justice for wage theft Campaign

- Many South Asian countries along with their civil society organisations researchers, activists, and scholars are launching a 'justice for wage theft campaign to ensure the payment of the salary benefits that are pending and the other labor dues.
- Countries such as the Philippines have documented the theft of wages of migrants from their country and are investigating the issue.

Women Migrants:

- It is worth noting it is important to note that Indian nursing staff and their caregivers have worked in some of the most unstable and remote areas such as Iraq, Syria, Libya, Yemen, Israel, and Papua New Guinea.
- Furthermore it is true that the female workforce that is migrant-friendly is predominantly restricted only to GCC countries and as well to Organisation for Economic Co-operation and Development (OECD) countries.
- Indian Government must therefore thoroughly examine the condition of women who are migrant workers and develop policy that is based on women's rights.
- The Government needs to revisit its policies within the context of the post-pandemic environment by getting all stakeholders involved and approving the Emigration Bill 2021.
- Global Compact for Safe, Orderly Migration and Regular Migration
- Then, in the New York Declaration for Refugees and Migrants which was which was adopted in September of 2016 in the General Assembly, the General Assembly decided to develop an international compact to ensure secure, organized and regular migration.
- The Global Compact for Safe, Orderly and Regular Migration (GCM) is a comprehensive global approach to international migration.
- The GCM is an informal, non-binding agreement which does not create any obligations to the states. This is a worldwide accord that establishes a common structure, common principles and the best practices for international migration.
- It is aimed at fostering the cooperation between states, and also promotes actions to enhance regular migration routes and to combat irregular migration and ensure the protection of human rights of migrants, among other goals.
- The agreement includes 23 goals and a list of possible steps for each one that

governments could make decisions in response to the problem.

- Notably it is important to note that the Global Compact establishes a United Nations mechanism that allows governments and businesses to provide both financial and technical resources for the implementation of it.
- The global compact has been framed in accordance with the goal seven of the 2030 Agenda.
- Sustainability Development in which the member states have pledged to work together internationally to promote secure, regular and safe migration.

About World Migration Report

- It is developed through IOM's IOM's Migration Research Division (MRD) of IOM working in partnership together with various most renowned applied and academic researchers as well as other experts in migration from around the globe.
- The report has been produced every year since the year 2000..
- It was designed in order to help improve knowledge of the concept of mobility and migration around the globe.
- The edition for 2020 was awarded gold at the 2021 International Annual Report Design Awards.

International Organization for Migration

- This can be described as an intergovernmental organisation that is in close contact with non-governmental, governmental, and other intergovernmental organizations in the area of migration.
- Headquartered in Geneva, Switzerland.
- The goal is to allow an organized transfer for people who are displaced, refugees, displaced people and other people who have been forced to leave their home countries and meet the requirements of both immigration and emigration countries, and also provide immigrants with resettlement assistance.
- India was granted observer's right to IOM in the year 1991 . It became an IOM member in the year the year 2008.
- IOM has assisted India in airlifting Indian nationals from Kuwait in the aftermath of the Iraqi invasion, and also the repatriation of more than thirty thousand Indians stuck

abroad over the last 15 years.

Topic 21. WHAT IS THE CAG AUDIT REPORT ON ASSAM'S NRC?

Important for subject: Polity

The Comptroller and Auditor General of India (CAG) in its report on compliance of "logistical arrangements for the NRC Update Project in Assam" has identified a variety of irregularities in the updating of National Register of Citizens (NRC) in Assam.

Concerns identified by CAG

- Cost overrun:
- When the process of updating the NRC was first initiated by the NRC in December of 2014 and had scheduled to finish by the end of February of 2015 The cost of the project was estimated at Rs288.18 crores.
- However in the CAG report has revealed that the cost will increase fivefold cost of the project by March 2022 as a result of the longer time required to finish the process.
- According to the report the final draft was announced in August 2019 , and the cost of the project had grown up to Rs1,602.66 crores.
- The audit of the documents has also revealed some irregularities in the utilization of funds like excessive and unadmissible payments made to vendors.

Wage payment:

- The CAG in its report stated that the wages that were paid to employees who were outsourced ranged from 45% to 64% lower than the amounts that was approved from the NRC coordination committee.
- Furthermore, this disparity in wages was used to provide an unjust advantage that was Rs155.83 million to the systems integrator above the reasonable 10% profit margin.
- Unexpected issues in The system
- The CAG in its report stated that safe and reliable software was required to support the NRC exercise. However, more than 215 utilities for software were added to the base software.
- Additionally, this was accomplished in a way that did not follow the legal process of software development or the selection of vendors through the process of tendering.

- Wipro Limited was one of the top companies to install software for NRC.

NRC exercise

- The National Register of Citizens (NRC) was first created in Assam in the year 1957..
- NRC was founded with the goal of identifying individuals born in India as well as migrants to Bangladesh(former East Pakistan).
- In 2013 2013, 2013 the Supreme Court directed the Union as well as the State Governments carry out an exercise to modernize the register of 1951 in Assam.
- The main goal of the campaign was to find the illegal migrants who made the journey to Assam in 1971, during the Bangladesh Liberation War.
- It is believed that the NRC is only been published one time in 1951, and has not been updated since then..
- A draft of the list was announced in the year 2018 and a final list was made public in the year 2019.
- The register also included people who were able to be able to prove their Indian citizenship through being residents or the descendants of those who lived in Assam prior to March 25, 1971 that was the date of the cut-off for deportation for foreigners, according the provisions of the Assam Accord of August 1985.
- More than 19.06 lakh applicants out of 3.3 crore applicants weren't registered due to insufficient evidence to establish their citizenship.
- The matter has been a source of controversy since various political parties have rejected the list as flawed and the process has been suspended due to the fact that it is believed that the Registrar General of India (RGI) has not yet published the list of candidates.

Topic 22. NATIONAL GANGA COUNCIL MEET

Important for subject: Government schemes

The National Ganga Council, will be held under the leadership of the Prime Narendra Modi, the Minister of State. Narendra Modi at Kolkata

What is National Ganga Council?

- The National Ganga Council is an authority established in October of 2016 pursuant to the River Ganga (Rejuvenation, Protection and Management) Authorities Order

(dated October 16, 2016) which dissolved the National Ganga River Basin Authority.

Compositions:

- The National Ganga Council is chaired by the Prime Minister.
- Union Minister for Water Resources, River Development and Ganga
- Rejuvenation will serve as the Vice-Chairperson ex-officio.
- The other members ex-officio of the council are different departments along with CMs of the respective states in addition to other participants.
- The National Ganga Council was formed in the context of the Environment (Protection) Act (EPA), 1986.
- It is given the entire responsibility for the oversight of the prevention of pollution and the rejuvenation of River Ganga Basin, including Ganga and its tributaries.
- The National Mission for Clean Ganga (NMCG) serves as the execution part within the National Ganga Council.
- It was created in 2011, as an officially registered society.
- It is a two-tier management structure, which includes Governing Council as well as an Executive Committee.

Topic 23. ELECTION COMMISSION SAYS READY TO ROLL OUT PILOT FOR MIGRANTS TO VOTE

Important for subject: Governance

Recently, the Election Commission of India said that it had created an idea for the development of a Multi-Constituency Remote Electronic Voting Machine which will allow remote voting by migrants.

More information about the latest news:

- EC has designed an idea for the development of a Multi-Constituency Remote electronic Voting Machine (RVM).
- The RVM can serve multiple constituents with a single remote voting booth.
- EC invites all of the recognized eight state political parties to test how they operate within the RVM.
- If the pilot proves successful then, in the 2024 general election, voter portability will

be fully in place.

What is Remote Electronic Voting Machine (RVM)?

- To enable remote voting for immigrants from the country A technological solution was developed as a the Remote Electronic Voting Machine (RVM).
- RVM is based on the development of a solid electoral roll as well as identification systems to prevent duplicate voting and permit voters to cast their votes remote, in a secure and controlled setting.
- It was designed with the help from Bharat Electronics Limited (BEL) and the Electronics Corporation of India Limited (ECIL).
- It is based upon the currently being used EVM system.

What is the process behind RVM how does it work?

- These RVMs function as standalone, un-networked system, effectively providing the voters with the same experience as the current EVMs.
- They will be installed in remote areas outside of the state in similar conditions to the currently operating polling booths.
- The distinctive feature in RVMs is they are a single remote Ballot Unit (RBU) can be able to serve several constituents (as as many as 72) by using a interactive election display panel in lieu of traditional printed paper ballot paper using EVMs.
- It is the Ballot Unit Overlay Display (BUOD) will show the candidates that are required according to the number of constituency found on the voter's constituent card.
- A barcode scanner will be utilized to read these cards.

What is the voting process in RVM?

- The voting procedure will be according to:
- After verifying the identity of a voter the card they have been issued with will be scrutinized with an open display that displays the information about the constituency and candidate details.
- The program will also be shown by private means, including on the BUOD in the RVM's RBU.

- The voter will then cast a vote and every vote is recorded constituency-wise inside the control unit of the machine.
- It is expected that the VVPAT software is expected to operate similarly to the latest technology.

Topic 24. ITALY APPROVES RULE TO FINE CHARITIES FOR MIGRANT RESCUE

Important for subject: International Relations

Italy's right-wing government has approved measures to penalize charities that help migrants in distress and to detain their vessels when they violate the new, stricter set of regulations.

- Italy's rightist government has ratified measures to penalize charities who assist migrants on the sea, and to detain their vessels in the event of a violation of rules set by the law.
- A decree from the cabinet that was approved in late in the year stated that vessels should ask for the port and sail for the port "without any delay" after a rescue, rather than remain in the water looking for other boats in trouble.
- Presently, the missions of charities, also known as Non-Governmental Organizations (NGOs), in the central Mediterranean generally last for several days, with the charity boats carrying out various rescue operations and frequently transporting hundreds of people.
- The ships of the NGOs have to also inform the passengers of the fact that they may request international protection anywhere within the European Union.
- Furthermore, Captains who break these rules can face penalties that can reach 50 000 euros (\$53,175) or more. Repeated violations can lead to confiscation and detention of the ship.

A few information regarding Italy:

- Italy is a country located in Southern Europe
- It's situated within its location in the middle of Mediterranean Sea, and its landmass is mostly in the geographical region named for it.
- Italy has borderlands to France, Switzerland, Austria, Slovenia and the microstates enclaved in Vatican City and San Marino. It also has an exclave territorial located in

Switzerland, Campione.

- The country is third-highest populated member state in the European Union, the sixth-highest-populous nation in Europe and the 10th largest country on the continent by land area.
 - The capital city of Italy and the largest is Rome.
-

PIONEER ACADEMY



PUNE

PUNE Address :
204/5, 304/5, 2nd & 3rd Flr., Pinnacle Prestige (Near Durvankar Hotel), Above
Cosmos Bank, Tiltak Road, Sadashiv Path, Pune - 411 030
Mob : 91453 39324 / 25



THANE

THANE Address :
201/202/203/204, 2nd Flr., Lalzer Arcade, Raghoba Shankar Road,
Chendani, Thane (W) - 400 601
Mob : 75060 10635



DADAR

DADAR Address :
306/7/8, 3rd Flr., Blue Pearl Society, Senapati Bapat Road, Plot No. 14, Near
Janata Cloth Market, Near Dadar Railway Station, Dadar (W), Mumbai - 400 028
Mob : 93241 69627 / 91375 41508



ANDHERI

ANDHERI Address :
3rd Flr., Syndicate Chamber, Above Vaibhav Restaurant, Next to
Better Home Hotel, Opp. Andheri (E) - 400 601
Mob : 84518 55673 / 70302 92316



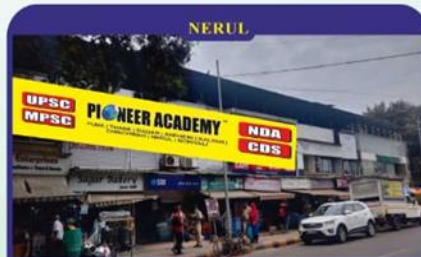
KALYAN

KALYAN Address:
2nd Flr., 2, Suyash Plaza, Opp. Railway Station, Near Deepak Hotel,
Kalyan (W) - 421 301
Mob.: 81691 40960



PIMPRI-CHINCHWAD

PIMPRI CHINCHWAD Address:
3rd Flr., Kunal Plaza, Mumbai Pune Road, Chinchwad Station,
Chinchwad, Pune - 411019
Mob.: 9975459324 / 9503459325



NERUL

NERUL ACADEMY
16, 20 & 21, 1st Flr., Om Surya complex, Opp. Nerul Railway station,
Beside Abhudaya Bank, Sector 15, Nerul (E), Navi Mumbai - 400707
Mob.: 93212 87241 / 93212 89027



BORIVALI

BORIVALI ACADEMY
313/314, 3rd Flr., V Star Plaza, Chandavarkar Rd., Near Saraswat Bank,
Sundar Nagar, Borivali (W), Mumbai - 400092
Mob.: 93212 49713 / 96533 04874

Email : pioneeracademypace@gmail.com
Website : www.pioneeracademypace.com / .in
Contact : + 91 75060 10635

Success is born of action...