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# INDEX

Topic no	Topic Covered	Page No
<b>ECONOMY</b>		
1.	CONCESSIONAL TAX REGIME	4-5
2.	DEVELOPMENT OF ENTERPRISE AND SERVICE HUBS (DESH) BILL	5-8
3.	MONETARY POLICY TRENDS	8-10
4.	START-UP INDIA SEED FUND SCHEME	10-11
5.	BANKING LICENCE	12-14
6.	DIGITAL LENDING	15-17
7.	WHAT RBI'S SURVEYS TELL ABOUT INDIA'S ECONOMY?	17-18
8.	TAX TO GDP RATIO	19-20
9.	FOOD INFLATION	21-22
<b>POLITY</b>		
10.	LOKADALATS	22-23
11.	COMPETITION COMMISSION OF INDIA (CCI)	23-24
12.	ESSENTIAL COMMODITIES ACT	24-25
13.	JUSTICE U.U. LALIT APPOINTED 49TH CHIEF JUSTICE OF INDIA	25-26
14.	THE PESA ACT AND THE REASON BEHIND PARTIES TRYING TO WOO TRIBALS IN GUJARAT	27-28
15.	HOUSE PANEL BATS FOR EQUALITY IN GUARDIANSHIP	28-29
<b>SCIENCE &amp; TECHNOLOGY</b>		
16.	INDIA AT 75: MILESTONES IN SPACE THAT MADE US A FORCE TO RECKON WITH	29-32
17.	NEW RESEARCH: GIANT METEORITE IMPACTS CREATED CONTINENTS	32-33
18.	FIGHTING IN UKRAINE ENDANGERS BIG NUCLEAR PLANT	34-35
19.	WHAT IS LANGYA, THE NEW ZONOTIC VIRUS THAT HAS INFECTED 35 PEOPLE IN CHINA?	35-37
20.	WHAT WENT WRONG WITH THE ISRO LAUNCH OF SSLV?	37-38
21.	ISRO'S FIRST FLIGHT OF SSLV ROCKET DASHES HOPES; A LOOK AT SPACE BODY'S SOME OF THE FAILED MISSIONS	39-40
<b>HISTORY</b>		
22.	DID VEER SAVARKAR 'PROPOSE' TWO-NATION THEORY? HOW ISLAMISTS AND CONGRESS HAVE LIED ABOUT THE IDEA THAT IS INHERENT IN ISLAMIC THEOLOGY	40-42
23.	IT'S ALL ABOUT MONEY -THE EVOLUTION OF BANKING SECTOR IN INDIA	43-44
24.	INDIA @75: FREEDOM SONGS THAT CATALYSED STRUGGLES AGAINST COLONIALISM	44-45
25.	WHY 1947 BOUNDARY COMMISSION AWARDS FOR PUNJAB AND BENGAL IRKED INDIA	46
26.	SHRI AUROBINDO	47-48

27.	ALL INDIA RADIO	48-50
<b>GEOGRAPHY</b>		
28.	CENTRE MAY SELL 13 BLOCK GOLD MINES IN UTTAR PRADESH AND ANDHRA THIS MONTH	50-51
29.	CLIMATE CHANGE FUELLING RISE IN EXTREME WEATHER EVENTS	51-54
30.	KRISHNA AND GODAVARI RIVER	54-55
31.	KOPPAL	56-57
<b>ENVIRONMENT</b>		
32.	HAVE COASTAL ECOSYSTEM NORMS BEEN VIOLATED?	57-60
33.	RAMSAR SITES	61-66
34.	NASA STUDIES FIND PREVIOUSLY UNKNOWN LOSS OF ANTARCTIC ICE	66-68
35.	RECORD CORAL COVER DOESN'T NECESSARILY MEAN THE GREAT BARRIER REEF IS IN GOOD HEALTH	68-73
<b>INTERNATIONAL RELATIONS</b>		
36.	THE GULF COOPERATION COUNCIL (GCC), EURASIAN ECONOMIC UNION (EAEU) AND EUROPEAN FREE TRADE ASSOCIATION (EFTA) WANT TO NEGOTIATE TRADE PACT	73-74
37.	RUSSIA SUSPENDS START INSPECTIONS OF ARMS IN PROTEST OF US TRAVEL RESTRICTIONS.	74-75
<b>GOVERNMENT SCHEMES</b>		
38.	NATIONAL INTELLECTUAL PROPERTY AWARENESS MISSION (NIPAM)	75
39.	MULYA PRAVAH	75
<b>AGRICULTURE</b>		
40.	THE EVERGREEN REVOLUTION: MAKING HUNGER HISTORY	76-77

## Topic 1. CONCESSIONAL TAX REGIME

### *Important for subject: Economy*

The government is aiming to create an unconstitutional tax system with no exemptions or deductions.

- Information in the Union Budget of 2020-21, there was a fresh tax system.
- Taxpayers were given the choice to select between the previous regime and the new regime.
- The idea behind this move was to offer significant relief to individuals who pay taxes and also to make it easier for taxpayers to comply with the income tax law.
- **Results:** individuals who have completed their student loans and mortgages are now willing to change into the tax structure because they don't have any exemptions to take advantage of.
- A similar tax system applicable to corporations was enacted in September of 2019 with a significant cutting rates and eliminating exemptions.
- The tax base for corporations: companies that are already in operation to 22 percent, from 30% for newly formed manufacturing firms that were formed on or after October 1 January, 2019 and establishing operations prior to April 31, 2024 to 15 percent from 25 percent.
- Companies that opt for the lower tax rates need to forfeit any exemptions or incentives.
- Concept Old Tax Regime It's a tax system that includes a variety of exclusions, deductions.
- The concessional (new) tax regime assesses who wish to avoid deductions or exemptions such as the ones under section 80C, 80D and house rental allowance and leave allowance can decide to pay taxes on their earnings at a lower rate.
- The taxpayer must give up certain deductions. This includes a the standard deduction of Rs. 500,000, deductions under section 80C of 1.50 lakh, and interest on property that is self-occupied of 2 lakh as deductions available by the majority of taxpayers.
- Tax rates in these systems Preliminary fact corporation tax is a tax directly applied to a business's net profits or income from its business.
- Corporation tax is due to both private and public companies that are registered within India pursuant to the Companies Act 1956.

- The tax on corporations is that is imposed on the net earnings of the company, while the income tax is one kind of tax that is imposed on the income of an individual like salary and wages.
- **Tax concession:** A decrease from the state government on the quantity of taxes an individual group of individuals or company must pay, or a change to the tax system to benefit these people.

## **Topic 2. DEVELOPMENT OF ENTERPRISE AND SERVICE HUBS (DESH) BILL**

### ***Important for subject: Economy***

The budget for the Union Budget 2022 was proposed to replace the existing legislation governing Special Economic Zones (SEZs) with a new statute that will allow states to become partners in the 'Development of Enterprise and Service Hubs' (DESH).

- Development of Enterprise and Service Hubs (DESH) Bill It suggested the creation of development hubs that focus is not just on exports, but rather to provide services to local markets, increasing economic activity, creating employment as well as integrating various industrial hubs.
- It will incorporate existing industrial estates, such as food and textile parks, making them into development hubs.
- The DESH Bill classifies two types of hubs for development: Enterprise and service hubs.
- Enterprise hubs will be built on land and have areas requirements and will be permitted for both manufacturing and service activities.
- Services hubs require built-up areas and only permitted for services-related activities.
- Presently, only specific services like IT and ITeS are permitted in specific economic zones.
- The hubs, which are expected to form under the state regional boards can be set up by the Centre states, or by states, or jointly with both or any service supplier.
- It is aimed at providing specific incentives, such as Inclusion of a zero-rating policy for IGST (integrated taxes on goods and services) on domestic purchases from a unit within an SEZ; continuation of tax benefits for indirect taxes for the developers of these zones, and permitting depreciation on the selling used capital goods that are cleared to tariff zones in the domestic market.

- The extension of corporation tax rates to 15% without exemptions for units operating with a licence in these hubs for development.
- States may also offer assistance to the zones in order to increase production and create jobs.
- The duty on customs would be paid for the inputs that are used, not on the high-priced final product.
- **Why?**
- SEZs are losing importance due to the imposition of a minimum alternate tax and the introduction of sunset clauses to prevent the removal of incentives to tax payers.
- SEZs' units used to receive a 100% income tax exemption for export earnings for the first five years. 50% over the next five years, and 50 percent of extra export earnings that were reinvested into the next five years.
- The Budget 2016-17 the government announced that tax-free income for new SEZ models would become offered only to units that begin operations before March 31st 2020.
- Exports out of the SEZs have dropped by \$102.3 billion during FY21 down from \$112.3 billion for FY20.. They make up less than 20 percent of exports in the present.
- **Not in line with the WTO rules Unconformity with WTO rules** - A WTO Panel in the year 2019 concluded that incentives provided to entities situated in SEZs were not in accordance with the agreement on subsidy.
- **Special Economic Zone** Special Economic Zone: A SEZ is a part of the country which is usually duty-free. It also has its own commercial and business laws, primarily to promote investment and create jobs.
- First in Asia, an EPZ (Export Processing Zones) was established in the year 1965 in Kandla, Gujarat.
- Although these EPZs were similar in structure as SEZs in the past, government decided to set up SEZs in the year 2001 under Foreign Trade Policy to redress the bureaucratic and infrastructural issues which were deemed to have affected the effectiveness of EPZs.
- The Special Economic Zones Act was approved in 2005.
- The Act was enacted together in conjunction with SEZ Rules in 2006.
- **Objectives of the SEZ Act:**

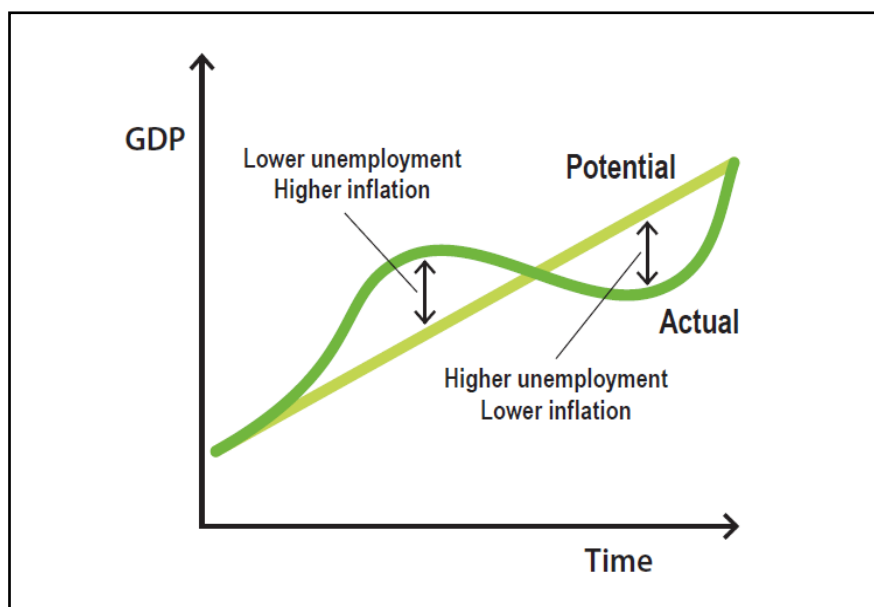
1. In order to create economic activity.
  2. To increase exports of services and goods.
  3. To generate employment.
  4. In order to increase foreign and domestic investment.
  5. To develop infrastructure facilities.
- India's SEZs were designed in a way that was similar to China's model of success.
  - Presently, 379 SEZs have been notified, of which 265 have been operational. There are eight SEZs that are operational in India in the present time, which include -the cities of Santa Cruz (Maharashtra), Cochin (Kerala), Kandla and Surat (Gujarat), Chennai (Tamil Nadu), Visakhapatnam (Andhra Pradesh), Falta (West Bengal) and Noida (Uttar Pradesh).
  - **The majority of SEZs are in five states:** Tamil Nadu, Telangana, Karnataka, Andhra Pradesh and Maharashtra.
  - The Board of Approval is the Apex body that is headed by the Secretary of the Department of Commerce (Ministry of Commerce and Industry).
  - The most important Incentives and Facilities Available to SEZ The benefits include duty-free imports or purchase of products for the purpose of developing managing and operating SEZ units.
  - 100% exemption from taxation on export earnings for SEZ units in accordance with the Income Tax Act for first 5 years, and 50 percent for the next five years following and then 50 percent of the ploughed-back export earnings for the next five year (Sunset Section for Units ) will start in 2020).
  - Units are exempt by Minimum Alternative Tax (MAT).
  - They were exempt by Central Sales Tax, Service Tax and State sales tax.
  - They are now included in GST and SEZ supplies are exempt from taxation in GST. IGST Act, 2017.
  - Single window clearance required for Central and State-level approvals.
  - There is no requirement to obtain a permit for import. In the manufacturing industry with the exception of a few sectors all FDI in the country is permissible.
  - Profits made can be returned to the country at any time without requirement for balancing dividends.
  - There is no need to have separate documentation for customs documents and export-

import policies.

- A lot of SEZs have plots with developed areas and space that is ready to use.
- Status as on June 30th, 2022 the government has issued official approvals for the 425 SEZ developers, of which 268 are operational.
- These zones have attracted an amount of 6.5 lakh crore in investments and employ around 27 lakh people.
- In the period April-June of this fiscal year the exports of these zones grew by 32 percent.

### **Topic 3. MONETARY POLICY TRENDS**

*Important for subject: Economy*



In the event that the institutional framework at the global and national levels is altered, the duties of monetary policy change too.

- Information Description: The Reserve Bank of India was established as a central authority for monetary policy in the year 1935.
- Like other central banks in emerging economies, RBI has been playing both a development and role in regulating.
- In its development role, RBI focused on creating an adequate financial infrastructure within the country.
- The change in India's monetary policy as outlined by the RBI is a reflection of the evolving concerns in the past seven years.



- The policy of the government's period. objectives and instruments . Monetary-Fiscal conflict The first three decades following Independence (1947-1970s) Application of five year plans Non-inflationary debt financing and Judicious credit creation to boost productivity and invest.
- The function that the Reserve Bank was to abide by the greater issues for the state.
- There was no conflict until inflation was at a moderate level.
- In the 1950s the average annual increase of wholesale prices was 1.8 percent.
- In the 1960s it was 6.2 percent.
- In the 1970s, double-digit and the fact that the money supply needed to be slowed down- which resulted in conflict with the ease of credit creation to fund the deficit.
- 1980s Implementation of five-year plans Chakravarty Committee- look into the operation of the monetary system presented its report in 1985 on the regulation of money supply, and in line with real growth, and an acceptable rate of inflation.
- The need for a close coordination between fiscal and monetary policy. The 1980s saw more deficits in fiscal policy and more growth in the money supply that led to the recession of 1991.
- 1990s Economy Reforms LPG Price stability and growth have been the primary goals of the monetary policy.
- RBI changed to a multi indicator strategy to meet its goals.
- Ad-hoc Treasury bills were not issued with the automated monetisation of the fiscal deficit ending the market-determined interest rate. elimination of the administered structure of interest rate allowed the interest rate to be recognized as an instrument of policy. Government securities were able to be traded, resulting in the rise of open market operations as a means of credit control.
- Interventions by RBI in the forex market as India has shifted to a market determined exchange rate. Protecting the value of exchange for the rupee with intervention both in the international and domestic market.
- The maintenance of the effective exchange rate in relation to the fluctuation of inflation rates. capital outflows and capital inflows stability was recognized as an important goal of monetary policy.
- RBI had two roles: the authority for monetary policy as a regulator for banks and other non-banking institutions.

- After 2015 NITI Ayog and Indicative Planning Flexible inflation targeting, with growth as a not less important goal
- New monetary policy guidelines will require the RBI to keep the inflation rate of 4 percent, and a variance of +2 percent or less.

#### **Topic 4. START-UP INDIA SEED FUND SCHEME**

*Important for subject: Economy*



The Scheme was launched at the "Prarambh, the StartupIndia International Summit in Mumbai' that commemorated the five-year anniversary of the Startup India initiative.

- **About the Startup India Seed Fund Scheme (SISFS):**
- **Goal:** To offer financial support to startups to help them prove their concepts design, prototyping, product trials as well as market entry and commercialization.
- The initiative was launched by the Department for Promoting Industry and Intern Trade (DPIIT) which has an investment of approximately Rs. 945 Crore.
- Some eligibility requirements An established company, as acknowledged by DPIIT and incorporated no longer than two years at the time of the application.
- Start ups are not eligible for more than the sum of Rs. 10 lakh in monetary assistance through any Central and/or State Government scheme.
- **Highlights:** It will help around 3,600 entrepreneurs with 300 incubators over the next 4 years.
- The Experts Advisory Committee (EAC) formed by DPIIT is responsible for the overall implementation and oversight and monitoring of the Scheme.

- Grants of up to Rs. five crores will be given to eligible incubators chosen from the panel.
- The incubators chosen will offer grants up to the amount of Rs. 20 lakh to validate proof of concept, prototype design, or product testing to start-ups.
- Investments of up to Rs. 50 lakh can be made available to start-ups to help them enter the market and commercialization or growing through debt-linked or convertible instruments.
- **Expected Benefit:** It can help to create a strong startup community in the areas of Tier 2, 3 and 4. This is because the towns that are smaller in India are usually not given the proper funds.
- The MAARG Portal it is by Startup India is a one place mentorship platform that facilitates the mentoring of startups across a variety of industries, functions, phases geographical locations, and backgrounds.
- Startups can meet with industry experts, academicians entrepreneurs who have been successful, seasoned investors, and others to get personalized guidance on growth strategies, get clarity, and receive practical guidance.
- Startup India Startup India was launched in 2016 as a appeal to entrepreneurs, innovators and thinkers from the country to lead the way in bringing about sustainable growth for India and creating large-scale jobs.
- The portal was home to more than 65,000 startups that had registered.
- Of these, 100 achieved the status of a unicorn recently which brings the total to 90.
- India is ranked third in global startups ecosystems.
- India's biggest online entrepreneurship platform lets startups connect and access tools for free resources and join in on contests and other programs.

## **Topic 5. BANKING LICENCE**

### ***Important for subject: Economy***

The Reserve Bank of India has removed the bank licence for Rupee Cooperative Bank and has directed that the Registrar of Societies Cooperative to liquidate the bank.

- **What caused RBI remove the license for Rupee Cooperative Bank?**
- The bank doesn't have sufficient capital and earnings potential as according to Section 11(1), Section 22 (3) (d) and Section 56 of the Banking Regulation Act, 1949.
- Section 11 addresses rules regarding the minimum amount of reserves and capital.
- Section 22 is about the licensing of banks.
- Section 56 concerns the application to the Act to cooperatives, Important for being subject to changes
- The bank is not able to comply with other requirements that are part of the Banking Regulation Act, 1949.
- The existence of the bank's operations is detrimental to the interest of its customers who are its depositors.
- It will be unable to pay its depositors in full, given its current financial state.
- Infringes on the public interests if permitted to conduct business.
- **What happens to deposits of the Rupee co-operative bank?**
- If you have a deposit of less than Rs 5 lakh in the bank would receive the entire amount via an organization called the Deposit Insurance and Credit Guarantee Corporation (DICGC).
- If a depositor has more than 5 lakh cannot receive their funds after 5 lakh.
- **What is a bank licence?**
- The RBI issues the license under the Banking Regulation Act of 1949 for banking activities including accepting deposits and lending.
- Parameters the 1949 Act concentrates on capital sufficiency and the protection of the public interest prior to the license is granted.
- Capital Adequacy Rate (CAR) is an estimate of the bank's capital to its risk-weighted credit exposure.
- Ratio of Loan Ratio (LDR): deposit Ratio (LDR) is the ratio between a bank's overall loan to deposits total in the same timeframe.
- Only a company who has been granted the banking licence is allowed to use the word

"bank" as its name when conducting business.

- The RBI examines banks each year, and may take steps if it notices the increase of bad loans or suspicious activity on their books.
- If, for instance, the bank is not able to raise enough capital to pay for its risks and also pay its depositors, the license can be terminated through the RBI.
- **Other options than cancellation:** Any banking activity, including withdrawals, are able to be stopped. Board of directors could be overruled by an administrator appointed to revive the bank, which includes the merger of it with another bank that is financially stable and filing criminal cases against employees, directors and directors who are in default and their property.
- **Cooperative Banking** A co-operative bank is a financial institution that is owned by its members, who are the bank's owners as well as the customers of their banks.
- The co-operative bank located in India can be registered in accordance with the States Cooperative Societies Act.
- The Co-operative banks are monitored through the Reserve Bank of India (RBI) and are subject to the Banking Regulations Act 1949 Banking Laws (Co-operative Societies) Act, 1955.
- The credit system for rural co-operatives in India is principally designed to guarantee the flow of credit for the agricultural sector.
- It includes both long-term and short-term co-operative credit arrangements.
- The short-term co-operative credit structure works using a three-tier structure - Primary Agricultural Credit Societies (PACS) at the village level. They aren't subject to the Banking Regulation Act, 1949 and are therefore not subject to the supervision of the Reserve Bank of India, Central Cooperative Banks (CCBs) at the district level , and State Cooperative Banks (StCBs) at the state level.
- StCBs/DCCBs have been registered under the rules of State Cooperative Societies Act of the State concerned. They are controlled through the Reserve Bank.
- The power has been delegated over to National Bank for Agricultural and Rural Development (NABARD) to oversee the inspection of State as well as Central Cooperative Banks.
- Primary Cooperative Banks (PCBs) are also called Urban Cooperative Banks (UCBs) are able to meet the financial requirements of customers living who reside in urban

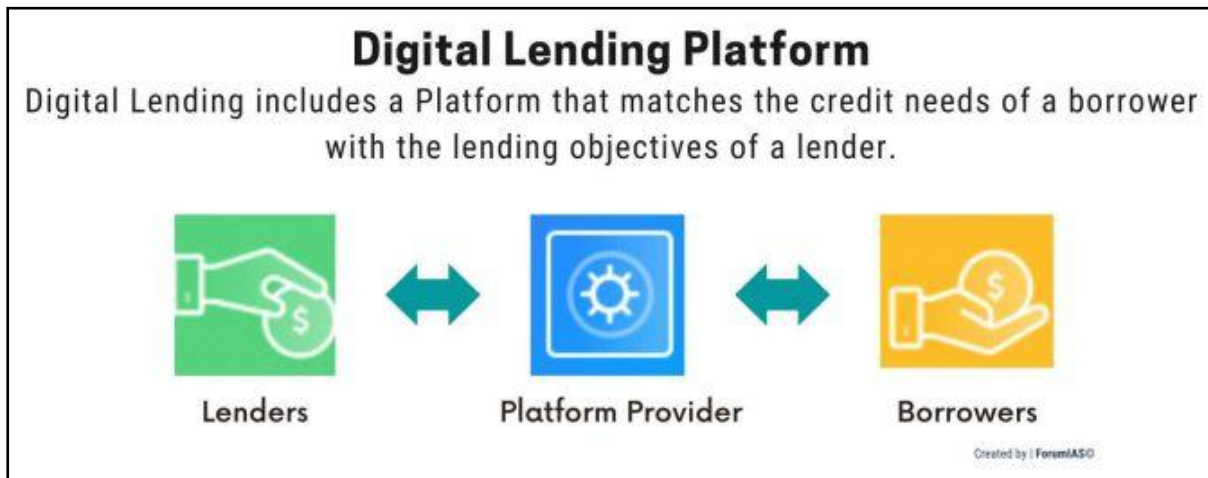
and semi-urban regions.

- They are registered as cooperative societies in accordance with the rules of either the State Cooperative Societies Act of the State concerned or the Multi State Cooperative Societies Act 2002, if the region that the bank operates in extends beyond the borders of one state.
- There is a duality of control over these banks, with the banking-related functions being controlled through the Reserve Bank of India and management-related functions being controlled by the respective State Governments or Central Government.
- Deposit Insurance of Cooperative Banks the co-operatives that are eligible banks, as defined by the section 2. (g) (g) of the Deposit Insurance Act, 1961 are protected by Deposit Insurance Scheme. Deposit Insurance Scheme.
- The State-owned, Central as well as Primary cooperative banks operating in the States and Union Territories, which have amended their Co-operative Societies Act as required under the DICGC Act, 1961, giving the RBI to require the Registrar Co-operative Societies of the respective States/Union Territories in order to shut down co-operative banks, or replace its management committee in addition to requiring that the Registrar to initiate any actions for the winding up, amalgamation, or rehabilitation of a cooperative bank that has not received prior approval by the RBI they are considered eligible banks.
- Presently, all banks that are Co-operative are covered under the Scheme.
- The Union Territories of Lakshadweep and Dadra and Nagar Haveli do not have Co-operative Banks.



## **Topic 6. DIGITAL LENDING**

*Important for subject: Economy*



Reserve Bank of India (RBI) has issued guidelines to organizations involved in lending via digital channels.

- The guidelines are applicable to the RBI's controlled entities (REs) as well as the LSPs that they have contracted to offer credit facilitation.
- In the case of the second category, digital lenders, the relevant regulator can formulate rules regarding digital lending, based upon suggestions of the group.
- For companies that fall into the third category the working group has suggested specific legislative and institutional changes to be considered by the government to limit illegal lending.
- All digital loans should be repaid and disbursed through the bank accounts of those regulated by law only, with no pass-through by the lending service provider (LSPs) as well as other third-party lenders.
- The LSPs' fees as part of the credit intermediation process will be paid directly by RE and not by the RE rather than by the creditor.
- A key fact statement that is standardised (KFS) is required to be given to the borrower prior the signing of the loan contract, which includes all-inclusive charges for digital loan in the format of an annual percentage rates (APR).
- Automated increases in credit limit without the express consent of the borrowers is banned.
- The loan contract must allow for a cooling off or look-up time for the loan to be terminated without penalties.

- All lending services that use digital technology, such as the use of short-term credit or deferred payments should be reported to credit reporting agencies by REs.
- **Digital Lending:** It is the process of lending via mobile or web-based platforms that make use of technology to authenticate and credit evaluation.
- Banks have created their own digital lending platforms to compete the market of digital lending through the use of existing capabilities in traditional lending.
- Digital lenders are divided as three distinct categories: entities that are regulated by the RBI and authorized to conduct lending transactions and entities that are authorized to conduct lending in accordance with other statutory or regulatory regulations, but not controlled by the RBI or RBI, and those lending outside of the scope of any regulatory or statutory provisions.
- **Actions taken by RBI:** Non-Banking Financial Companies (NBFCs) and banks are required to provide the names of the online platforms they work with.
- RBI has also set out that online lending platforms that serve for the benefit of Banks and NBFCs must disclose names of Bank(s) as well as the NBFC(s) in advance to customers.
- The central bank has also asked lending applications to send a sanction note to the borrower, on the letterhead of the banker NBFC involved prior to the signing of the loan agreement.
- Public lending is a legitimate activity that can be carried out by banks, NBFCs that are registered with the RBI as well as other entities that are regulated by state government pursuant to statutory regulations.
- The RBI created a Working Group on lending digitally, including loans made through online platforms and smart phones in January 2021.
- The panel was established amid concerns over consumer protection and business conduct issues that arose from the increase in lending through digital platforms.
- The most important suggestion is that digital lending applications should be important to be subject to a verification procedure by a nodal organization to be established in collaboration with the relevant other stakeholders.
- To establish to establish a Self-Regulatory Organisation (SRO) covering all the players in the lending ecosystem for digital loans.
- The sending of commercial messages for digital loans is to be governed by a specific



code of conduct that will be put into place in an proposed SRO.

- The establishment of a "negative list that includes lending services providers is proposed by an SRO is a possibility.
- Loans should be deposited directly into the bank accounts of the borrower.
- All data that is to be saved in servers in India.
- Algorithmic functions that are used in digital lending be documented must ensure transparency.

## **Topic 7. WHAT RBI'S SURVEYS TELL ABOUT INDIA'S ECONOMY?**

### ***Important for subject: Economy***

The RBI released its most recent monetarist policy review and seven surveys to help to determine the state of the economy.

- **Trade Survey:**
- Increased trade deficit - Impact of the growing trade deficit is among the primary reasons behind the depreciation of the Indian rupee.
- The current Account Deficit (CAD) is predicted to increase from 1.2 percent of the GDP in 2021-22 and reach 4 percent (of that total GDP) in 2022-23.
- Consumer Confidence Survey (CCS):
- The CCS surveys people in 19 cities about their current views and one-year-ahead expectations regarding the overall economic environment and employment outlook, the overall prices, and their own budget and income.
- In based on responses from the respondents, the RBI is able to come up with two indexes:
- The Current Situation Index (CSI) and the Future Expectations Index (FEI).
- A score below 100 signifies that the person is pessimistic, while an index higher than 100 suggests optimism.
- The CSI has seen a recovery after a record lowest in the month of July in 2021.
- However, the consumer's confidence is in the negative zone.
- The FEI is in the positive zone however, it is still below levels of pre-pandemic. Inflation Expectations Survey (IES) It tracks the expectations of people about inflation.
- It shows that the household' inflation expectations in the current time frame has

decreased, along with their one-year and three-month ahead of median inflation expectations.

- Order Books as well as inventories and Capacity Utilisation Survey -OBICUS Survey aims to present demand and supply conditions in the manufacturing industry in India on the basis of quarterly.
- A low capacity Utilization indicates that manufacturing companies are able to meet demands without having to increase production.
- This in itself could result in negative consequences for employment creation as well as private sector investment in the economy.
- According to the latest data, the CU is higher than the pre-pandemic levels, which suggests that India's demand for goods and services is growing gradually.
- Industrial Outlook Survey (IOS) It is a quantitative assessment of the current business climate of Indian manufacturing firms.
- It is clear that companies were confident (above the 100-level) in Q1, although not in the same way as they had been in the past.
- Services and Infrastructure Outlook Survey (SIOS) It's an analysis of qualitative aspects of how Indian businesses in the service and infrastructure industries consider the present conditions and the future outlook.
- It shows that businesses in the service sector are much more optimistic than companies in the infrastructure industry.
- Bank Lending Survey (BLS) It's a quantitative assessment and expectations of the major scheduled commercial banks (SCBs) on criteria for credit, including demand for loans and the terms and conditions of loans for the major economic sectors.
- It also shows that bankers' assessment of the loan demand was positive across the majority of sectors.
- of Professional Forecasters (SPF) of Professional Forecasters (SPF) It's a survey conducted by 43 professional forecasters (outside the RBI) regarding key macroeconomic indicators like the rate of growth in GDP and inflation rate in the current financial year and the coming financial year.
- The real GDP of India is projected to increase by 7.1 percent in 2022-23, and 6.3 percent in 2023-24.

## **Topic 8. TAX TO GDP RATIO**

### ***Important for subject: Economy***

India's tax-to-GDP ratio is much higher than what it claims and it's the right time to improve the quality of spending.

- Fiscal deficit, taxes and debt are all interconnected A lower tax revenue implies a greater fiscal deficit for the same amount of spending, and a greater deficit means more debt.
- All three factors are a factor in the rate of growth or inflation.
- The ratio of GDP to tax for India is between 10 and 11 percent of GDP.
- It is at or near this level over the past 20 years.
- In comparison to other countries, India's tax per GDP is less (Central Tax to GDP Ratio).
- But according to World Revenue Longitudinal Data for 1990 to 2019: G20 countries Ratio of Taxes to GDP (at every levels in the government) India 16.7 China 15.9 Mexico 14.1 Indonesia 11 Saudi Arabia 5.9
- Additionally, the tax-GDP ratio is adjusted to reflect PPP per capita income Tax gap - the gap between what is actually and the actual, adjusted for the levels of income.
- The average global taxes are -1.3 percent India has a tax gap of +1.2 per cent over the period between 2011 and 2019.
- Therefore, India's tax-GDP ratio is 2.5 percentage points higher than the average economy.
- But, there's no evidence to suggest that a higher tax/GDP ratio boosts growth.
- One theory suggests that higher tax rates will reduce the deficit in the fiscal system and improve growth.
- Triple whammy - if tax rates are reduced, revenues would decrease and the deficit in fiscal inequality would grow.
- According to a different idea (Laffer curve) higher corporate tax rates hinder investments, cause tax evasion as well as slowed growth.
- The Experience of India In September 2019, the corporate tax rate was reduced by about 10 percent.
- For the three months between April and June 2022, tax revenues for corporations on a

yearly basis were up by 30 percent.

- If we take 2019-20 as the base the tax revenues of corporations have been up by 66 percent GDP, and GDP increased by 33 percent the average tax buoyancy that is 2.0 in three consecutive years.
- The tax-to-GDP ratio in the period 2022-23 will be higher than 18 per cent in India which is similar in comparison to Japan as well as the US.
- The Indian economy needs to move away from the simplistic notions that the tax-GDP ratio is too low in comparison to expenditures and the quality of spending.
- Laffer Curve was created by the economist Arthur Laffer in 1979.
- The Laffer Curve is founded on the notion that lower tax rates can increase economic growth because it leads to increased spending, placing money in the pockets of taxpayers.
- The Laffer curve illustrates the connection between tax rates and the consequent levels of government revenue.
- The basic principle behind this Laffer curve is that tax revenues are raised when the government raises taxes.
- In contrast, at extremely high tax rates and tax evasion, when tax-evasion practices begin, and there is a lack of motivation to work, and so that if tax rates are reduced, they can increase the revenue.
- Tax-to GDP Ratio This is a measure of a country's tax revenues in relation to its economy, as measured by GDP (GDP).
- The ratio of tax-to-GDP is calculated by dividing the revenue from taxation for a particular time period with the GDP.
- This ratio is a valuable analysis of a country's tax revenues as it provides potential taxation rates in relation to economy.
- It also gives a clear view of the general direction of the tax policies of a country as well as international comparisons of tax revenue of various countries.
- Countries with higher incomes typically have higher ratios of GDP to tax than those in developing countries.
- A tax-to-GDP ratio of 15% or higher percent or more guarantees economic growth, and consequently the reduction of poverty in the long run according to the World Bank.

## **Topic 9. FOOD INFLATION**

### ***Important for subject: Economy***

The Food and Agricultural organization's Food Price Index (FPI) averaged 140.9 points in July, 8.6% down from the previous month's reading and registering the highest monthly decline since October 2008.

- In the months of March through July between March and July, the FPI has slowed by 11.8 percent.
- This is due to cereals and vegetable oils which have seen their prices fall further.
- Factors that influence the cost of food There were four main supply-side shocks that triggered the massive global food inflation especially in October, 2020: Weather Dry spells in Ukraine (2020-21) as well as South America (2021-22) impacted the availability of soybeans and sunflower.
- The heat wave of March to April 2022 destroyed India's wheat crop.
- Examples of a pandemic: the oil palm plants of Malaysia were hampered by labourers who migrated who came from Indonesia as well as Bangladesh.
- The war between Russia and Ukraine caused disruptions in supply from both countries.
- In the year 2019-20 (a non-drought, non-war year) both countries represented 28.5 percent of the world's wheat production, 18.8 percent of the corn crop, 34.4 percentage of barley as well as 78.1 percent from sunflower exports.
- Export control concerns about shortages in the home country trigger such actions.
- Example: palm oil produced by Indonesia and wheat from India in the months of March to May 2022.
- The reasons for the decline in food prices global factors: Resumption of exports out of Ukraine through in the Black Sea.
- The U.N.-backed agreement to unblock the use from this Black Sea trade route also allows for free shipping of Russian fertilisers and food items.
- Indonesia have lifted their prohibition on the export of palm oil.
- Brazil, the US, Brazil, Argentina and Paraguay are all set to harvest bumper soybean harvests.
- Domestically, above normal rainfall in all of the South Peninsula, Central and

Northwest India has boosted acreages for most crops during the season. (monsoon) time.

- The benefits of recharge to groundwater could also be transferred to the crop of rabi.
- A higher buffer stock is a benefit to the government.
- International exportable surpluses, mostly coming from Canada and Australia also are greater than last year's surplus by around 0.5 millimetric tonnes for both pulses.
- Imports are duty-free for arhar masur, urad, and arhar till March 31.
- A good monsoon will also provide more fodder as well as the availability of water to animals which would further reduce costs for livestock and pressures to inflation on eggs, milk and meat.

### **Topic 10. LOKADALATS**

#### ***Important for subject: Polity***

More than 74 lakh outstanding and pre-litigation matters, many of which are in the huge backlog that was created from the outbreak, resolved all over the country in the 3rd National Lok Adalat.

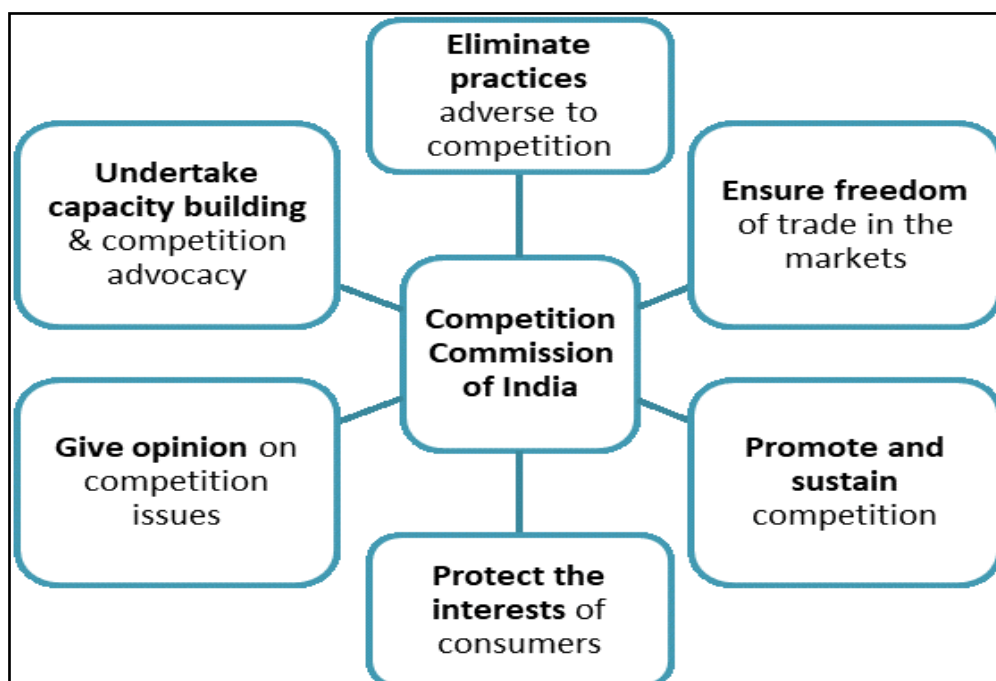
- In a departure from the norm legal officials under Chief Justice of India, Justice U.U. Lalit who is acting as the chairman-executive of National Legal Services Authority (NALSA), used technology-based platforms to conduct 'digital lokadalat' operations in Maharashtra as well as Rajasthan.
- **The concept:** Lok Adalat is one of the dispute resolution mechanism, it's an avenue where disputes or cases which are 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 basis The Constitutional basis is Article 39A.
- Constitution allows for legal assistance to the most disadvantaged and marginalized sections of society, and promotes justice on the basis of equal opportunities.
- Article 14 of the Constitution also make it mandatory for the state to ensure an equality of law.
- **Statutory requirements:** Under the Legislative Services Authorities Act of 1987,

Lok Adalats are designated a statutory entity.

- The verdict of the Lok Adalats is considered to be a decision of a civil tribunal and is binding and final for all parties.
- **A no-refusal:** It isn't a option to appeal the decision of Lok Adalat.
- But, they can choose to begin litigation by contacting the appropriate court through filing a lawsuit following the prescribed procedure to exercise their rights to litigate.
- Court fee: There's no fee for court for a case submitted to an Lok Adalat.
- **Note:** If an issue that is pending before the court of law is sent by the Lok Adalat and is settled later, the court fee paid by the court on the petition or complaint is also returned for the respective parties.
- **Type of Cases to be referred for Lok Adalat:** All matter that is pending before any court.
- Any dispute that has not been filed before any court is likely to be heard by the court.
- If the matter is related to an offence that is not applicable to compounding under the law will not be decided within Lok Adalat.

## Topic 11. COMPETITION COMMISSION OF INDIA (CCI)

*Important for subject: Polity*



The Competition Commission of India (CCI) has approved (a) the acquisition of a majority stake of Optimus Drugs Private Limited (ODPL) by Sekhmet Pharmaventures Private



Limited (Sekhmet).

- Competition Commission of India is a statutory body that is responsible for enforcement of the goals in the Competition Act, 2002.
- CCI was created through CCI was established by the Central Government with effect from 14th October 2003. However, it was fully operational on the 20th of May, 2009.
- **Composition:** A Chairperson, and 6 members who are selected by the Central Government.
- **Formation of CCI:**
  - The CCI was created under the rules of the Competition Act of 2002
  - The Competition Act, 2007, was passed following the amendment of Competition Act, 2002, which led to the creation of CCI along with the Competition Appellate Tribunal.
  - The government changed the Competition Appellate Tribunal (COMPAT) by the National Company Law Appellate Tribunal (NCLAT) in 2017.
- Function of CCI: To stop practices that negatively impact competition, encourage the development of competition and safeguard the rights of consumers and guarantee freedom of trade on India's markets.

## **Topic 12. ESSENTIAL COMMODITIES ACT**

***Important for subject: Polity***

To rein in tur dal price surge, Centre invokes Essential Commodities Act

- Essential Commodities Act the ECA was passed in 1955.
- The system has been utilized in the Government to regulate the supply as well as distribution range of goods it considers essential to provide them to the consumers at reasonable costs.
- The items listed under the Act includes fertilisers, drugs pulses, edible oils and pulses and petroleum and petroleum-related products.
- The Centre may include new products at any time the need arises. They can also eliminate them from the list when the situation is improved.
- In the Act The government is allowed to also set an amount that is the retail maximum cost (MRP) for any product packaged in a manner that it declares to be an "essential product".



- How does it work?
- If the Centre determines that a particular product is out of stock and the price is rising the Centre can inform of its stock-holding limitations for a certain time.
- The States take action on this announcement to define the limits and then take steps to ensure that they are followed.
- Anybody who is trading or dealing with commodities, be it retailers, wholesalers, or even importers are impeded from stockpiling more than the limit of.
- A state may decide, however, to not impose any limitations.
- Once it is done the traders must immediately sell to the market any stock that is not in the quantity that was mandated.

### **Topic 13. JUSTICE U.U. LALIT APPOINTED 49TH CHIEF JUSTICE OF INDIA**

***Important for subject: Polity***

Justice Uday Umesh Lalit was appointed the 49th Chief Justice of India (CJI) on Wednesday after President Droupadi Murmu signed his warrant of appointment.

- In exercise of the powers conferred by clause (2) of Article 124 of the Constitution of India, the President is pleased to appoint Shri Justice Uday Umesh Lalit, judge of the Supreme Court, to be the Chief Justice of India with effect from 27 August, 2022 While Supreme Court judges retire on attaining the age of 65, judges of the 25 High Courts superannuate at the age of 62.
- Article 124: Establishment and constitution of Supreme Court.
  - a. There shall be a Supreme Court of India consisting of a Chief Justice of India and, until Parliament by law prescribes a larger number, of not more than seven other Judges.
  - b. Every Judge of the Supreme Court shall be appointed by the President by warrant under his hand and seal after consultation with such of the Judges of the Supreme Court and of the High Courts in the States as the President may deem necessary for the

- purpose and shall hold office until he attains the age of sixty-five years.
- c. A person shall not be qualified for appointment as a Judge of the Supreme Court unless he is a citizen of India and
- i. has been for at least five years a Judge of a High Court or of two or more such Courts in succession; or
  - ii. has been for at least ten years an advocate of a High Court or of two or more such Courts in succession; or
  - iii. is, in the opinion of the President, a distinguished jurist.
- d. A Judge of the Supreme Court shall not be removed from his office except by an order of the President passed after an address by each House of Parliament supported by a majority of the total membership of that House and by a majority of not less than two – thirds of the members of that House present and voting has been presented to the President in the same session for such removal on the ground of proved misbehaviour or incapacity.
- e. Parliament may by law regulate the procedure for the presentation of an address and for the investigation and proof of the misbehaviour or incapacity of a Judge under clause (4).
- f. Every person appointed to be a Judge of the Supreme Court shall, before he enters upon his office, make and subscribe before the President, or some person appointed in that behalf by him, an oath or affirmation according to the form set out for the purpose in the Third Schedule.
- g. No person who has held office as a Judge of the Supreme Court shall plead or act in any court or before any authority within the territory of India.

## **Topic 14. THE PESA ACT AND THE REASON BEHIND PARTIES TRYING TO WOO TRIBALS IN GUJARAT**

***Important for subject: Polity***

The AAP's manifesto for the election in Gujarat

- The PESA Act was enacted in 1996 "to enable the expansion of the provisions in Part IX of the Constitution that concern the Panchayats and areas that are Scheduled Areas".
- Other than Panchayats Part IX, comprised of Articles 243-243ZT of the Constitution includes provisions related to cooperative societies and municipalities.
- According to the Act, Scheduled Areas are the ones mentioned in the Article 244(1) that states that the requirements that are contained in the Fifth Schedule shall apply to the Scheduled Areas and Scheduled Tribes in states that are not Assam, Meghalaya, Tripura and Mizoram.
- The Fifth Schedule offers a number of special rules to cover these regions.
- **What is the PESA Act?**
- The PESA Act was enacted to provide self-government via Gram Sabhas (village assemblies) for residents in areas that are Scheduled Areas.
- It acknowledges the right tribes, which reside within the Scheduled Areas in order to exercise their own authority through their own self-governing systems.
- The Act allows Gram Sabhas to play a crucial function in the approval of development plans and regulating the social sector in general.
- This is the process and the personnel who carry out policies, ensuring oversight of the minor (non-timber) forests minor water bodies, minor minerals, in addition to other things.
- Ten states - Ten states - Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan as well as Telangana The states have issued notices to the Fifth Schedule regions that cover (partially or completely) many districts in each of the states.
- Following that the PESA Act was enacted, the Union government issued a models of PESA Rules.
- Six states have been notified of these Rules.
- The Tribes from Gujarat The state has 11 main tribes in Gujarat one of which is the

most populous being Bhil which accounts for almost 48 percent of the total tribal population.

- Other important tribes include Gamit Dhodias, Bawcha, Kunbi, Rabari, Siddi, Pateliya, Naikda, Chaudhary.

### **Topic 15. HOUSE PANEL BATS FOR EQUALITY IN GUARDIANSHIP**

#### ***Important for subject: Polity***

The father and mother should be equal guardians of their children. The Hindu Minority and Guardianship Act (HMGA) 1956 should be amended to eliminate discrimination against women, a parliamentary panel has suggested in their report.

- Hindu Minority and Guardianship Act 1956. The Act in its present form does not provide for joint guardianship or it acknowledge the mother as guardian for the minor legitimate child, unless the father dies or found to be unfit.
- The Act favors fathers over mother, and goes against equality and discrimination that is protected in Articles 14 and 15 of the Constitution.
- The committee believes that there is a urgent need to modify the HMGA to provide equal rights to father and mother as natural guardians. Section 6, of HMGA stipulates the following: in instances of an Hindu minor boy as well as an Hindu minor girl who is not married dad is naturally guardian, and after him, the mother.
- Section 7 of that Act states an adoption guardianship that is natural to the adopted son who is a minor, is transferred upon adoption to the father who adopted him and , 'after' that, to the mother who adopted him.
- The Panel Recommendations has included guardianship rights for people who are disabled and suffer from cerebral palsy, autism and those suffering from mental health issues and seniors.
- In cases in which guardianship of the minors is at issue the panel suggests that the law should be considered "supported decision-making" as alternative to guardianship when an individual appoints trusted advisors like family members, friends or professional advisors to act as supporters.
- The panel also asked for a fresh look at child custody in cases of marital discord and suggested that courts should be empowered to grant the parents joint custody if it is deemed to be beneficial to the well-being of the child. They could also grant the sole custody of one parent, with access privileges to the second.

- Concerning adoption, the committee has stated that they believe that the LGBTQ community should be included in the law.
- The committee has also proposed an harmonisation of the provisions of both the JJ Act, 2015 and the Hindu Adoptions and Maintenance Act (HAMA) 1956, as adopting under the first is arduous and lengthy, while the latter is not without flaws such as the inability of tracing the origin of the child who is being adopted to be adopted or insufficient follow-ups after the adoption.
- It has raised a long-standing request to keep an adoption register of children who are adopted by the HAMA because many are concerned that it can be used as a way to get involved in trafficking.
- Juvenile Justice (Care and Protection of Children) Act, 2015 under the law, prospective adoptive parents must be mentally, physically, emotionally stable, and financially stable.
- Single men are able to adopt boys single women are able to adopt any child of any gender.
- It also states the child shouldn't be granted in an adoption arrangement to the couple until they have at the very least two years of a stable marriage.

## **Topic 16. INDIA AT 75: MILESTONES IN SPACE THAT MADE US A FORCE TO RECKON**

### ***Important for subject: Science and Technology***

Space Technology Vikram Sarabhai formed the Indian National Committee for Space Research (INCOSPAR) in 1962.

- In collaboration with the Dr. Sarabhai leading the charge, INCOSPAR set up the Thumba Equatorial Rocket Launching Station (TERLS) in Thiruvananthapuram for research on upper atmospheric conditions.
- Fun fact: the Dr. A. P. J. Abdul Kalam, who later became President of India was part of the first group of rocket engineers that formed the INCOSPAR.
- INCOSPAR was then expanded and eventually became it's current name, the Indian Space Research Organisation (ISRO) on August 15th, 1969.
- It was a ideal day, as India celebrated its own 22nd Independence Day.
- It is gradually becoming one of the top six space agencies in the world.

- India is home to among the world's largest satellite fleets of communication (INSAT) as well as remote sensing (IRS) satellites.
- In the midst of India's celebrations for its 75th Independence Day round the corner we can look back into time and look at the most important discoveries that placed India on the map for space travel.
- Aryabhata named after the famous Indian Astronomer Aryabhata. Aryabhata was the first Indian satellite launch on the 19th of April 1975, from Kapustin Yar, a Soviet rocket launch site and development facility located in the Astrakhan Oblast using a Kosmos-3M launch vehicle.
- It was constructed by the ISRO and was began operation in the Soviet Union as a part of the Soviet Interkosmos program.
- It was a significant moment throughout the historical history of India. In actual fact, to commemorate the event, the image of the satellite could be seen on the back of Indian two rupee banknotes from 1996 and 1997.
- SLV-3 is the Satellite Launch Vehicle-3 (SLV-3) was India's very first experiment in satellite launch vehicle. It was a four-stage vehicle.
- It was capable of putting 40kg class payloads into the Low Earth Orbit (LEO). Launched on the 18th of July the 18th of July, 1980.
- According to ISRO's official website SLV-3 placed Rohini in orbit which was able to make India sixth member in an elite group of space-flying nations.
- Rohini was a set of spacecrafts created by Indian Space Research organization.
- The Rohini series comprised four satellites, all of which was launched by SLV and three succeeded in orbit.
- The series consisted of mostly satellites that were used for experiments.
- The success of the SLV-3 program paved the way for more advanced launch vehicle development projects, such as that of Augmented Satellite Launch Vehicle (ASLV), Polar Satellite Launch Vehicle (PSLV) as well as the Geosynchronous satellite Launch Vehicle (GSLV).
- PSLV PSLV Polar Satellite Launch Vehicle (PSLV) is India's third generation launch vehicle and one of the very first launches vehicles manufactured by India that comes with liquid stages.
- PSLV was launched in the month of October 1994. It has since become an effective

launch vehicle, with the capability of completing 39 missions up to June 2017.

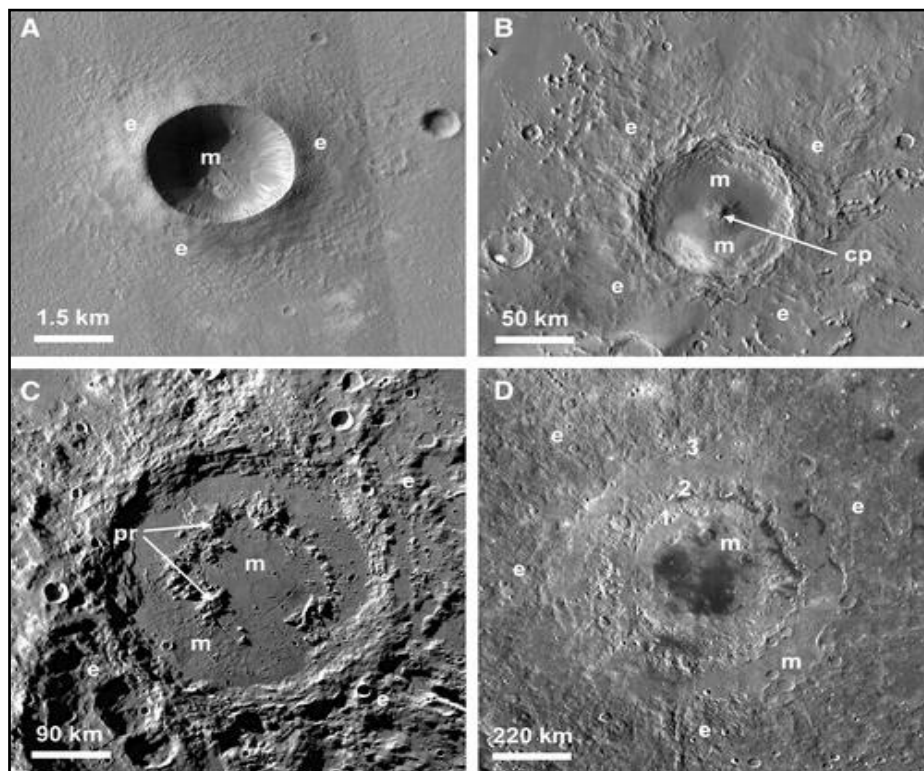
- According to the ISRO's website, the vehicle successfully launched 48 Indian satellites as well as 209 satellites for customers outside the country between 1994 and 2017.
- It is important to remember that this vehicle was able to launch two spacecrafts: Chandrayaan-1 in 2008 as well as Mars Orbiter Spacecraft in 2013.
- Chandrayaan-I Chandrayaan-1 was India's first moon mission.
- It was the first non-manned lunar probe that was part of the Chandrayaan programme , and was launched in October of 2008 by ISRO.
- The spacecraft was comprised of lunar orbiters along with an impactor.
- The collection also included instruments made in countries outside of Germany, the USA, UK, Germany, Sweden, and Bulgaria.
- The spacecraft made more than 3,400 moon orbits.
- While the mission ended following the loss of communication to the spacecraft on August 29 2009, it was able to give India's space program an enormous boost.
- Mars Orbiter Mission the Mars Orbiter Mission (MOM) was India's first interplanetary mission.
- India was the 4th space organization to be able to access Mars orbit, following Roscosmos, NASA, and the European Space Agency.
- It also helped make India the first country to be able to access the Martian orbit on its initial attempt.
- Mangalyaan, the spacecraft Mangalyaan was launched on November 5 2013, 2013 and entered Mars its orbit on September 24, 2014.
- GSLV Another innovative product developed by ISRO can be described as its Geosynchronous satellite Launch Vehicle (GSLV).
- GSLV also is an space launch vehicle that is specifically designed to launch satellites as well as other objects in space to Geosynchronous Transfer Orbits.
- A three-stage launcher that has motors that strap on GSLV is able to place a larger payload into orbit than PSLV.
- The GSLV-D5 flight was the inaugural flight that was successful for GSLV with its own cryogenic engine.
- The D5 was introduced on the 5th of January, 2014.



- Mission Shakti In a first-of-its-kind attempt in the history of space, Mission Shakti was the first time that Defence Research and Development Organisation succeeded in neutralising an orbiting satellite using the Anti-Satellite (ASAT) rocket on the 27th of March, 2019.
- It was among the most significant and complicated missions carried out through the DRDO and was named the Mission Shakti.
- Based on the title, Mission Shakti demonstrated the group's ability to defend India's assets including in the space! Rakesh Sharma's Sare Jahan Achcha Achcha In all the new developments and outstanding space tech How can we forget the name that was India's best-known name in the field of space-related achievements?
- The only Rakesh Sharma is the very first Indian to orbit the earth!
- Sharma was a former Indian Air Force pilot, was chosen to be Cosmonaut and enter the space in a joint program with both the Indian Air Force and the Soviet Interkosmos space program.
- He took off on the Soyuz T-11 on the 3rd of April 1984.

## **Topic 17. NEW RESEARCH: GIANT METEORITE IMPACTS CREATED CONTINENTS**

*Important for subject: Science and Technology*





A brand-new Curtin University study has found the strongest evidence concluding that Earth's continents were created by meteorite giant impact.

- This paper, entitled 'Giant Impacts and the evolution and origin of continents' was released in Nature on the 10th of August.
- Through the examination of tiny zircon crystals in the rocks of The Pilbara Craton in Western Australia which is Earth's most well-preserved remains of the crust's early days We found evidence of massive meteorite impacts.
- Analyzing the composition of oxygen isotopes found in zircon crystals showed a 'top-down process that begins with melting of rocks close to the surface before moving deeper, in line with the geological effects of massive meteorite impact.
- The University's research offers the first evidence-based proof that the processes that eventually created the continents started with massive meteorite impacts
- **What is the difference between the terms Meteoroid or the term "Meteor" Meteor or a Meteorite?**
- Meteoroids are cosmic objects that vary in dimensions from dust grains all the way to small asteroids.
- Many are pieces of larger body parts that were damaged or destroyed.
- These come from comets asteroids, planets, and the Moon.
- When meteoroids penetrate Earth's atmosphere (or the atmosphere of another planet like Mars) with speed of light and begin to burn up, fireworks or "shooting star formations" are known as meteors.
- If a meteoroid is able to survive its flight through the air and lands on its ground surface, it's referred to as meteorite.

## **Topic 18. FIGHTING IN UKRAINE ENDANGERS BIG NUCLEAR PLANT**

*Important for subject: Science & Technology*



It is located in the Zaporizhzhia plant is located in the southern part of Ukraine close to the city of Enerhodar located on the banks the Dnieper River.

- It is among the largest nuclear power reactors in the world.
- It was constructed in the Soviet period, it houses six reactors that have the capacity 5700 megawatts.
- Three reactors are operating.
- Russia both Ukraine have been accused of each other of attacking Europe's largest nuclear power plant, which is stoking fears around the world of a nuclear disaster across the continent.
- Prior to the war, the nuclear plant was responsible for around half the electricity produced through the nuclear energy in Ukraine.
- The country is home to 15 nuclear reactors in four operating reactors, as well as being home to the now decommissioned Chernobyl plant, which was the scene of the nuclear catastrophe of 1986.
- Rafael Mariano Grossi, director-general of the United Nations' nuclear watchdog The International Atomic Energy Agency, stated to The Associated Press last week that the situation at Zaporizhzhia's nuclear plant Zaporizhzhia plant "is totally out of

control," and he issued an urgent appeal at Russia as well as Ukraine to let experts visit the plant to stabilize issues and avoid an accident with nuclear fuel.

- He also said that the IAEA must also conduct crucial inspections to make sure that nuclear materials are protected.
- International Atomic Energy Agency Widely acknowledged by its title of the most prestigious "Atoms for Development and Peace" agency in the United Nations family, the IAEA is the world's central point for nuclear cooperation. field.
- The IAEA was established in 1957 to address the fears and hopes caused by the discovery and numerous uses of nuclear technology. Its headquarters are located situated in Vienna, Austria.
- Reports are submitted to each of the United Nations General Assembly and Security Council.
- Goal It is the Agency collaborates alongside the Agency's Member States and multiple partners all over the world to encourage peaceful, secure, and safe utilization of nuclear technologies.
- In 2005, the organization was given in 2005 the Nobel Peace Prize for their work to ensure an environment that is safe and peaceful.
- Programs:
  1. Program of Action for Cancer Therapy (PACT).
  2. Human Health Program.
  3. The Water Availability Improvement Project.
  4. International Project on Innovative Nuclear Reactors and Fuel Cycles, 2000.

### **Topic 19. WHAT IS LANGYA, THE NEW ZOONOTIC VIRUS THAT HAS INFECTED 35 PEOPLE IN CHINA?**

***Important for subject: Science and Technology***

Nearly three years after the first coronavirus was first discovered in China in 2013, an entirely new zoonotic infection was discovered in China's two provinces of the eastern region, with 35 cases identified to date.

- This Henipavirus variant is also known as Langya Henipavirus or the LayV.
- Henipaviruses have been classified as biosafety levels 4 (BSL4) agents.
- They can trigger severe illnesses for both animals and humans and at present there

aren't any licensed medicines or vaccines designed for humans.

- What exactly is Langya virus?
- The newly discovered virus is a "phylogenetically distinct Henipavirus", according to a recent study -- A Zoonotic Henipavirus in Febrile Patients in China -- published in The New England Journal of Medicine.
- The kinds of Henipaviruses that were identified prior to this time included Hendra, Nipah, Cedar, Mojiang and the Ghanaian bat virus.
- In accordance with the US CDC, the Cedar virus, Ghanaian bat virus, and Mojiang virus are not believed to cause human diseases.
- However, Hendra and Nipah are both human-infected and can cause fatal illnesses.
- Langya In addition, it is known to trigger fever as well, and fever, with NEJM research calling for further investigation into the illnesses in humans.
- The study states that the Langya genome's structure is "identical to the Henipaviruses other than" and is closely related to "Mojiang Henipavirus that was first discovered in the southern part of China".
- What are the signs and symptoms that are the signs Langya virus?
- The study examined 26 patients suffering from LayV infection to determine the symptoms that were associated with it.
- In the 26 who were sick 54% of them complained of fatigue, while 50% reported cough and 38 percent reported nausea.
- In addition 35% of the total 26 reported vomiting and headaches.
- The study showed that 35% of patients had impaired the function of their livers, while 8 percent of them affected kidney function.
- The patients were also afflicted with anomalies of "thrombocytopenia (35 percent) and leukopenia (54 percent) as well as impairment in liver (35 percent) as well as kidney (8 percent) function" The study found.
- A thrombocytopenia diagnosis is a decrease in platelet count, whereas leukopenia is a decrease in white blood cell count, which can reduce the body's ability to fight off disease.
- Where did Langya virus originated? Most likely, the new virus has made its way from an animal to human.
- The LayV virusRNA is mainly discovered in shrews, which could be their natural

hosts.

- The study focused on shrews, after conducting serosurveys of domestic as well as wild animals.
- In domestic pets, seropositivity has been observed in dogs and goats.
- What is the human-to-human transmission?
- There aren't definitive answers at this time.
- The researchers behind the study have stated that the amount of their research is not sufficient to establish the human-to-human transmission.
- They also note that, among the 35 people who were infected with LayV There was "no near contact nor frequent exposure experience" suggesting that the "infection among the population of humans might be intermittent"

## **Topic 20. WHAT WENT WRONG WITH THE ISRO LAUNCH OF SSLV?**

*Important for subject: Science and Technology*



On the 7th of August, ISRO got ready for the first test flight of the mission SSLVD1/EOS-2.

- Launch took place at the Satish Dhawan Space Centre located in Sriharikota.
- It was the Small Satellite Launch Vehicle (SSLV) D1/EOS-2 mission carried two satellites that of the Earth Observation Satellite-2 (EOS-2) that weighed around 135 kg and AzadiSAT which weighed eight kilograms.



- The mission was designed to put the EOS2 in an orbit that was circular in low-Earth orbit that was at an altitude of around 350 kilometers higher than the Equator and tilted to 37 degrees.
- The beginning of the story was successful with the launch vehicle running smoothly.
- But, the mission was not able to position these satellites in their orbits as required, as well as the satellites because they were already separated from launch vehicles were destroyed.
- **Why should we create an SSLV when we have already used PSLV as well as GSLV?**
- The PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle) are extremely powerful and are able to carry massive loads.
- In order to place the Earth Orbiting Satellite in a low Earth orbit, it does not require such powerful engines.
- The SSLV is able to carry medium-sized to small weights ranging from 10 up to 500 kg.
- It's also less expensive.
- The fact that the three stages are powered with solid fuel also has a benefit.
- Solid fuel is much easier to handle, while dealing with liquid propellants in both the PSLV and the GSLV is more complicated.
- **The difference in circular orbits is what makes them different from an elliptical orbit?**
- The majority of objects like spacecrafts and satellites are put in circular orbits for only a few minutes.
- They then are either moved into circular orbits of greater height or their acceleration is raised until the trajectory changes from an ellipse into a hyperbola.
- The spacecraft then escapes the gravity of Earth in an effort to go further into space, for instance towards space to the Moon or Mars or farther away.
- Satellites orbiting the Earth are usually put in circles.
- The reason for this is that when a satellite is being used to photograph the Earth it is simpler to work with an established distance from Earth.
- If the distance changes in a circular orbit, or in an elliptical orbit keeping the cameras focused could be difficult.

## **Topic 21. ISRO'S FIRST FLIGHT OF SSLV ROCKET DASHES HOPES; A LOOK AT SPACE BODY'S SOME OF THE FAILED MISSIONS**

*Important for subject: Science and Technology*

In the initial SSLV mission it carried Earth Observation Satellite EOS-2, as well as Azaadi SAT, a student satellite that was co-passenger with In a further setback to the space agency of India on its launches as well, they Indian Space Research Organisation (ISRO) announced on Sunday that the satellites aboard its first Small Satellite Launch Vehicle "are not in use anymore" following the SSLVD1's placement of the satellites in an elliptical orbit, instead of a circular orbit in the low orbits of Earth.

- Another failed mission of the ISRO First major failure of a satellite to the ISRO was on the 10th of August in 1979, when the first test flight of SLV-3 with Rohini Technology Payload could not put the satellite in its desired orbit. The SROSS-1, a 150kg satellite with science instruments was launched by the very first ASLV (Augmented Satellite Launch Vehicle) test flight on March 24, 1987.
- It was unable to make it to Earth's orbit Dubbed as one of the ISRO's most reliable workhorses, the PSLV failed to achieve success in its initial flight.
- After its successful launch in the year following it became an efficient and flexible launch vehicle for ISRO's space agency.
- Launch vehicle GSLV F02, that was the first attempt at launching a large communication satellite however, also failed.
- The PSLV-C39 was intended to launch IRNSS-1H was unsuccessful in the 41st attempt.
- Even though it had normal lift-off the satellites were split within their heat shields, which resulted in failure to complete the mission.
- The second mission of ISRO's on the moon Chandrayaan-2 orbiter, launched in the year 2019.
- The mission, however, was unsuccessful when the lander smashed onto the moon's surface instead of landing.
- The rover and the lander were both destroyed. The launch of the earth observations satellite aboard GSLV Mk 2 rocket GISAT-1 was unsuccessful just 350 seconds after the launch at India's Spaceport.
- The initial analysis by ISRO identified "a technical issue in the cryogenic phase" as

the cause of the failure.

- Small Satellite Launch Vehicle The SSLV (Small Satellite Launch Vehicle) will cater to the market for small satellites to launch into low orbits of Earth that has been developed in recent times to meet the needs of developing nations as well as universities with small satellites, as well as private companies.
- The SSLV is the lightest satellite launch vehicle with a weight of just 110-tonne. It will take just 72 hours to be integrated as opposed to the typical 70 days needed to build a launch vehicle.
- It can transport satellites of up to 500kg in a low Earth orbit, while the proven and true Polar Satellite Launch Vehicle (PSLV) can launch satellites with a weight in the 1000-kilogram range.
- SSLV is able to launch up to 500kg of satellites into 500 km of Low Earth Orbit (LEO) and 300 kg into Sun Synchronous Orbit (SSO).
- It is a three-stage launch Vehicle equipped with three solid Propulsion Stages and a liquid propulsion-based Velocity Trimming Module (VTM) to serve as a final stage.
- It is ideal for launches of multiple microsatellites simultaneously at a time, and can accommodate numerous orbital drops.
- The main advantages of SSLV are its low price and a quick turn-around and the flexibility in accepting multiple satellites at once, launch-on-demand capability, minimum requirements for launch infrastructure etc.
- One of the main responsibilities of the newly created ISRO commercial division, New Space India Limited (NSIL) is to manufacture and mass-produce the SSLV and larger and more powerful PSLV in collaboration together with private companies in India through technology transfer.

## **Topic 22. DID VEER SAVARKAR 'PROPOSE' TWO-NATION THEORY? HOW ISLAMISTS AND CONGRESS HAVE LIED ABOUT THE IDEA THAT IS INHERENT IN ISLAMIC THEOLOGY**

### ***Important for subject: History***

Modern History The theory of two nations was first formulated in the year 1876, in the work of Syed Ahmad Khan, the creator of the Aligarh Muslim University, and not by Savarkar in 1937.

- Syed Ahmad Khan said in 1876 "I am convinced now that Hindus and Muslims could



never become one nation as their religion and way of life was quite distinct from each other."

- 14 August 2020, it is the 2nd Partition Horrors Remembrance day, that was announced by the premier Narendra Modi last year to pay tribute to the sufferings and the victims of the people who were victims of the Partition of India.
- In the course of partitioning India that split British India into three parts into two nations that comprised India and Pakistan millions of Indians were forced to relocate and suffered in the process, and estimates of deaths caused by the partition can range from 20,000 to 20,00,000.
- Annie Besant spoke of the massacre in her book , 'The India's Future'.
- The timeline of the Partition of India The partition of Bengal was the first action of the British to break Hindu Muslim unity.
- In 1909, the introduction of Morley Minto reforms in 1909 proved to be a crucial moment in the fight against the colonial dominance in India.
- Reforms were introduced that created a process under that separate electoral districts were constituted in which the only Muslims were able to vote Muslim candidates in the constituencies that were that were specifically designated for them.
- The Montagu Chelmsford reforms, also known as The Montagu Chelmsford reforms or Government of India Act 1919 along with reservations of seats to Muslims included clauses for reservation of positions in Provincial and Imperial parliaments to Sikhs, Anglo-Indians, Indian Christians and the domicile Europeans.
- Following World War 1, the Muslims in India were shocked by the reality they were told that Caliph of Turkey was no longer able to retain his authority over Muslim sacred sites.
- The Caliph was seen by Muslims as the spiritual leader and was entrusted with the responsibility to protect the sacred places.
- When Gandhi Ji along with the other Congress leaders were working on their Non-Cooperation protest in the year 1920 In 1920, the Muslims joined them to voice their displeasure over the mentioned issue.
- During the time that the movement continued it was a time of remarkable Hindu Muslim unity in terms of their involvement in it.
- In the wake of the Chauri Chaura incident in which a group of British police officers

were killed as a result of an initiative by the participants from the Non-Cooperation movement, the protest was ended through Gandhiji the Muslim officials felt vindicated as their protest against the demise of the Caliphate went in limbo due to the call off of the movement.

- Following the year 1930, the demands for a distinct Muslim Nation following the declaration of independence was first articulated.
- Sir Muhammad Iqbal became the leader of the Muslim League in 1930 . In that year, the Muslim League at first, he articulated the need for a separate Muslim state.
- The strategy that was followed by the British to rule and divide was illustrated in the Communal Award of 1932.
- This policy also made it easier to separate electorates.
- In 1940, Jinnah made it clear during an Muslim League conference held at Lahore, "Hindus and the Muslims are two distinct religious philosophies, religions, social practices and literature.
- The Cripps Mission in 1942 suggested that India be granted Dominion status in the British empire.
- The Mission refused to accept the request for Pakistan but did allow the provinces to separate of the Indian Union.
- The Cabinet Mission plan of 1946 started by advocating for the transfer of power to a single India with some autonomy granted to Muslims in areas of Muslim dominance.
- A temporary government was established in September 1946, but it had only members from the Congress since it was the Muslim League was not willing to accept any less than an autonomous Pakistan The 16th of August 1946 Jinnah declared Direct Action Day and the Muslim League raised the demand for an independent Pakistan.
- The idea to divide British India into two states was announced on June 3rd, 1947.

## **Topic 23. IT'S ALL ABOUT MONEY -THE EVOLUTION OF BANKING SECTOR IN INDIA**

### ***Important for subject: History***

Contemporary India Robert Clive could have not achieved his goals, were it not for the bank belonging to Jagat Seths. Jagat Seths.

- One of the major reasons Delhi ultimately fell in 1858, one year before that First War of Independence, was the support that the British received from Hindu financiers from Chandni Chowk
- In Chennai In Chennai, the Nagarathars as well as the Arya Vysyas and the Gujaratis and the Marwaris are remembered forever in the region known as Sowcarpet.
- This is where Sahukars also known as loan lenders helped the trade of the Company.
- The Chola economy prospered through trade and conquer and the profits from one were used for financing another. In the 12th century starting from Periya Puranam, we find that banking and money lending were well established.
- The tale of Thirugnanasambandar in this epic work refers to merchants from Vaippar who was able to lend money
- In the 16th century's book Amuktamalyada the tale of Andal The King Krishnadeva Raya describes the business community of Madurai
- The Indian Overseas Bank was promoted by the Sir MCtMuthiahChettiar family in 1937.
- However, this didn't suggest it meant that British banks were in decline.
- They served their only British clients who were British.
- The three Presidency were each banking independently. The three Presidency they fought over the matter until 1921, when it was the time that the Imperial Bank of India was created by their amalgamation.
- In 1935, India was given its own financial regulator called The Reserve Bank of India.
- Independence brought numerous changes, among them the nationalization of the Imperial Bank in 1952, and the change of the name of its bank to State Bank of India.
- It was also required to alter its methods - to fit an entirely new system of government with fresh objectives.
- However, the basic principles of banking have remained the same throughout the

years.

## **Topic 24. INDIA @75: FREEDOM SONGS THAT CATALYSED STRUGGLES AGAINST COLONIALISM**

### ***Important for subject: History***

Poets such as Rabindranath Tagore Aurobindo Ghosh Subramania Bharati Vallathol Narayana Menon, Sarojini Naidu, Mahadevi Verma and others in India have rejected the notion of territorial racialisation of nationalists during the war for freedom and tied it to the bigger causes of humanity and the cosmopolitan patriotism.

- Aurobindo demanded independence for India in the larger interest of the world.
- Therefore, while Westerners considered homogeneity the key for the development of a state-like nation, Indian poets saw nationalism as the source for moral energy and spiritual enthusiasm towards the nation.
- He wrote poetry such as "Bride Of The Fire Life", "The Golden Light", "The Dreamboat". "Life and Death", "Who", "O Coil, Coil".
- Rabindranath Tagore famously stated, "I will never allow patriotism (read nationalism) to triumph over humanity as long as I live", also composed India's national anthem Jana Gana Mana, which is our obligation as a sacred duty to celebrate freedom.
- If Tagore declared the freedom of provincials in his poetry, like Banglar Maati Banglar Jol (Earth of Bengal, Water of Bengal)
- He also broadened the concept of nationalism by crossing the boundaries of small boundaries of ethnic and geographical preconceptions, such as "Where the mind is without fear and the head is held high."
- Bankim Chandra Chatterjee's Vande Mataram (I Praise Thee Mother!) was written originally in Bengali at first, portrayed India as a goddess of motherhood and love for one's nation was believed to be the most sacred action.
- It was also given the status of a national song within the context of India's struggle for independence.
- It was performed in the political context at first through Rabindra Nath Tagore in the session in 1896 of the Indian National Congress.
- Sarojini Naidu, better known for her work as Bharatiya Kokila (The Nightingale of

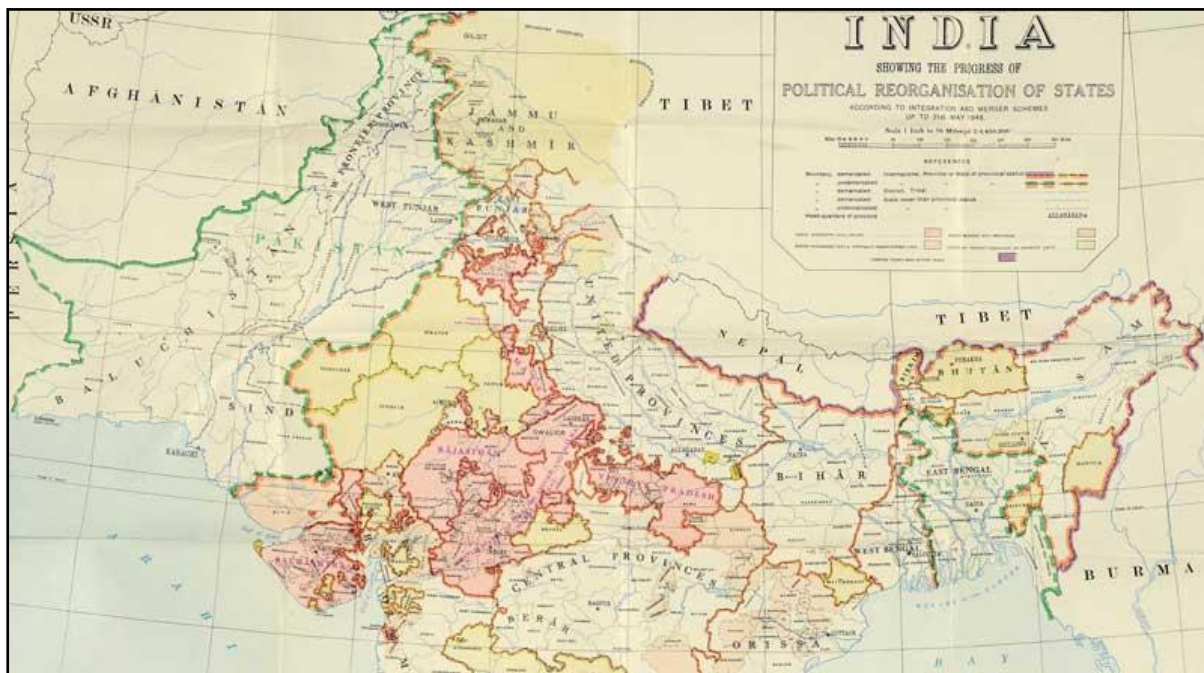
India) was a poet who offered a more nationalist view of nationalism in her poetry such as "To India".

- However, Subramania Bharati, the Tamil poet referred to as Mahakavi Bharathi expressed the plight of oppressed and inspired them to stand up against the British yoke. He also spoke of his belief in pantheistic philosophy in crystal clear detail.
- Three of his most acclaimed works , namely KuyilPattu, PanchaliSapatham and Kannan Pattu were written in 1912.
- Savitribai Phule is regarded as the first radical, modern Marathi poet, addressed issues of gender and caste in her writing and speaking, as well as by direct interventions.
- In her poetry collection "Kavya Phule", she wrote about breaking the chains of caste and called for an urgent appeal to the caste with lower rungs.
- We are in the midst of celebrating the campaign 'Har GharTiranga as one of the 75th Independence Day celebrations (Azadi ka Amrit Mahotsav)
- It's a good time to remember that the song of the flag (ZandaGeet) was composed by the poet Shyamlal Gupta.
- The song was declared the national song during Haripur Congress in 1934. Haripur Congress of 1934.
- Subhadra Kumari Chauhan, a well-known writer from India's Hindi heartland, further widened the nationalism sphere by paying a dazzling tribute to the bravery of Rani of Jhansi with her timeless lines:"Khoob marudaani ladi Jhansi"waliRanithi." Poetry in the hands of poets such as Ramdhari Singh Dinkar, who is hailed by the media as being an Rashtrakavi (national poet) the patriotic poetry discovered an influx of enthusiasm for Veer rasa, as well as poetry of resistance.
- There are chilling lines from the poem Singhasan Khaali Karo Ke Janata Oaati Hai ('Vacate the seat of power because there are people going to come').
- Similarly, Ram Prasad Bismil, one of the founding members of Hindustan Republican Association,galvanised millions of youths with his revolutionary poem "Sarfroshi ki tamanna" during the freedom struggle.
- The poem of Faiz Ahmad Faiz's Subh-e Azad will bring back painful memories of the struggle for freedom and partition.



## **Topic 25. WHY 1947 BOUNDARY COMMISSION AWARDS FOR PUNJAB AND BENGAL IRKED INDIA**

*Important for subject: History*



On the 17th of August 1947, two days post Independence the awarding to the Boundary Commissions for the partition of Punjab and Bengal was announced.

- **What was the purpose of those two Boundary Commissions?**
- In June 1947 Sir Cyril John Radcliffe, a British lawyer, was appointed the chairman of the two border commissions from Punjab as well as Bengal and was given the responsibility to define the boundaries of India along with Pakistan.
- He was granted a period of five weeks in which to complete this job and was in India in July 1947.
- The boundary commissions for Punjab and Bengal included two nominees from both the Indian National Congress and Muslim League respectively.
- The Boundary Commissions award was announced on the 17th of August 1947. which was later referred to by The Radcliffe Line.
- The Radcliffe line split India as well as Pakistan into two separate countries.
- Radcliffe broke up India into three sections the India, West Pakistan and East Pakistan(present the day Bangladesh) as well as India

**Topic 26. SHRI AUROBINDO*****Important for subject: History***

In celebration of the 150th anniversary of Maharshi Aurobindo and the 75th year of Independence The Ministry of Culture is commemorating the life and work of Shri Aurobindo through the implementation of Spiritual Programs within 75 of the prisons throughout the country between the 12th through 15th August, 2022.

- It was an Indian spiritual and political philosopher, yoga guru maharishi writer, leader of the revolution, and Indian nationalist ideologist.
- The journalist was also his name, writing newspapers like Bande Mataram.
- Aurobindo was a student in his studies for Indian Civil Service at King's College, Cambridge, England.
- After his return to India he was able to perform various civil service positions with the Maharajas of the princely State of Baroda and began to become more involved in nationalist politics within the Indian National Congress and the developing revolution in Bengal along with an organization called the Anushilan Samiti.
- The year was 1892. He was in various posts as an administrator within Baroda (Vadodara) as well as Calcutta (Kolkata).
- He was arrested in aftereffects of a series of attacks linked to his group in a public trial , where the defendant was charged with being a traitor for the Alipore Conspiracy.
- While in jail He experienced spiritual and mystical experiences following which he relocated to Pondicherry and left politics to pursue religious work.
- At Pondicherry, Sri Aurobindo developed a spiritual practice he called Integral Yoga.
- His belief was in spiritual realization that not only freed but also changed the human condition, opening up an enlightened life on earth.
- In 1926, with the assistance of his spiritual partner, Mirra Alfassa (referred in the book as "The Mother"), Sri Aurobindo Ashram was established.
- His major literary works include The Life Divine, which is a philosophical study that is Integral Yoga; Synthesis of Yoga and Synthesis of Yoga, which focuses on the basic principles and techniques for Integral Yoga; Savitri: A Legend and A Symbol, a epic poem. Bhagavad Gita and its message



- It is the Future Evolution of Man Rebirth and Karma Hour of God

## **Topic 27. ALL INDIA RADIO**

*Important for subject: History*



Memories and magical moments with All India Radio since Independence All India Radio to broadcast every day starting on August 15th in its prime-time News Bulletins

- All India Radio All India Radio is among the biggest broadcasting organizations worldwide, with broadcasts across 179 languages in 23 different dialects on 479 stations spread across the country.
- It covers close to 92 percent of the total population. 99.19 percent of the population.
- The motto of the organization is 'Bahujan Hitaya: Bahujan Sukhaya', meaning 'for the happiness of many, and for the well-being for many'.
- All India Radio (AIR) was established in 1957 and is now officially known under the name Akashvani (literary that means "Voice from the Sky") is the nation's public radio station of India and is an affiliate of Prasar Bharati.
- It was first established in 1936. The home service of AIR comprises more than 420 stations all over the United States, covering more than ninety-two percent of nation's region and 99.19 percent of the total number of people.
- Broadcasting was first broadcast in June 1923 under the British Raj with programs by the Bombay Presidency Radio Club and other radio clubs.
- The company was liquidated on March 1, 1930.
- The government took over broadcasting services and started with the Indian State Broadcasting Service (ISBS) 1 April 1930, on an experimental basis for two years. It was then extended officially in May 1932, it was later transformed into All India

Radio on 8 June 1936.

- Clone Congress Radio Congress Radio, that was established on August 22, 1942. It was put to combat the in august 1942., Mahatma Gandhi launches the Quit India Movement during the Bombay session of the All-India Congress Committee.
- In response to the call Responding to his call, a student aged 22 from Wilson College, Usha Mehta creates an undercover radio station in order to fight the propagandists who are broadcast through All India Radio, the British government's official mouthpiece.
- On the 14th of August 1942 Usha together with some closest associates launched an operation called the Secret Congress Radio, a secret radio station.
- It aired on 27 August.
- Secret Congress Radio also kept those in charge of the movement for freedom in contact with the people.
- The undercover Congress Radio brings messages from Gandhi and other leaders to the masses. It and reports on the 'unofficial' side of events, and combats propaganda for three months, until the detention and arrest for its members during November that same year.
- Congress Radio, which began operations in August 1942 was created to fight the British-controlled AIR and is often referred to as "anti-India Radio.".
- Usha Mehta Usha Mehta (25 March 1920 11 August, 2000) was one of the Gandhian activist and freedom fighter from India.
- She was brave and compassionate Prof. Usha Mehta (Ushaben), one of the few women in the group. She is a major figure.
- Born on March 25, 1920 in Saras Village in Surat district in Gujarat and grew up to be a bright and enlightened student in Bombay.
- In 1928, eight year old Usha took part in a demonstration marches to protest Simon Commission. Simon Commission She used to mobilise her friends and create Prabhatpheris together with them, all dressed in the national tricolour.
- They also were able to picket the liquor stores.
- She was introduced to Mahatma Gandhi when she was young girls and made vows to wear khadi for the rest of her life. She also started studying law. She ceased the course in 1942 in order to join in the Quit India Movement.

- The Chittagong Bomb Raid, Jamshedpur strike, and the running of government in parallel states like Bihar as well as Maharashtra were just some of the major events that were the result of the underground Radio transmitted to public.
- The police stumbled upon them on November 12, 1942, and detained the organizers, which included Usha Mehta.
- All were later imprisoned in Yeravda Jail in Pune. In March 1946 she was released. She was the first political prisoner released in Bombay under the direction from Morarji Desai, who was at the time the home minister of the government in interim.
- She continued to promote the Gandhian ideals and was honored by the prestigious Padma Vibhushan in 1998.

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### **Topic 28. CENTRE MAY SELL 13 BLOCK GOLD MINES IN UTTAR PRADESH AND ANDHRA THIS MONTH**

#### ***Important for subject: Geography***

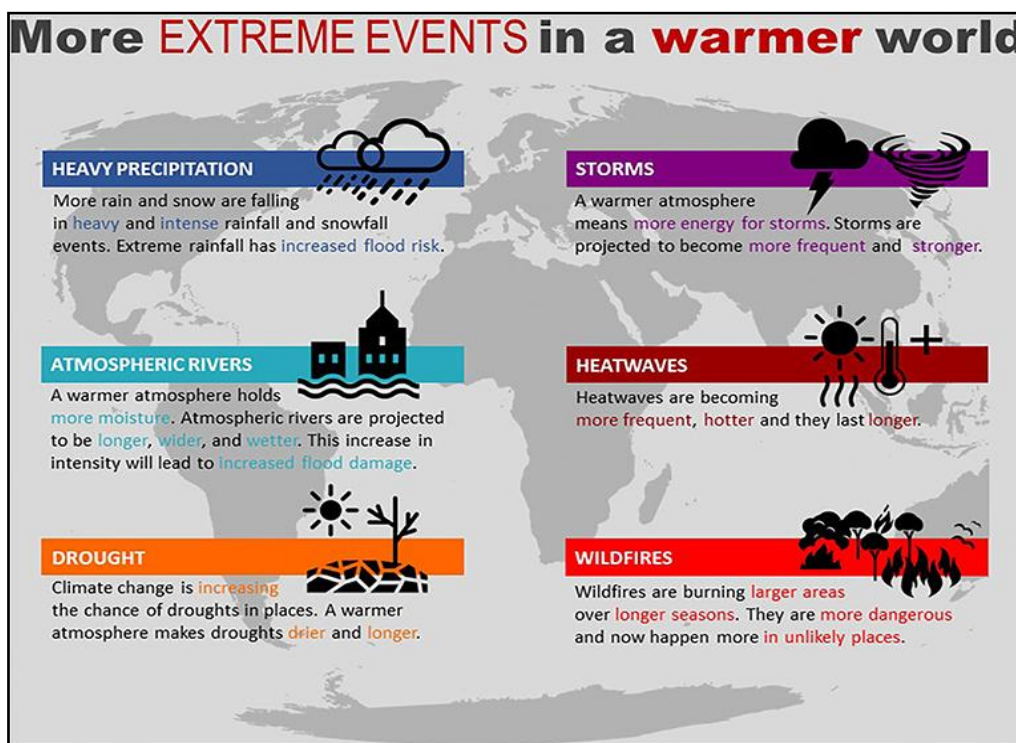
The government plans to place on block 13 mines of gold located in states Andhra Pradesh and Uttar Pradesh in the upcoming month, as part of efforts to provide an increase to the mining industry's contribution to the gross domestic product of the country.

- The gold mines located in Andhra Pradesh include Ramagiri North Block, Boksampalli North Block, Boksampalli South Block, Javakula-A Block Block, Javakula C Block, Javakula D Block, Javakula Block Javakula-F Block.
- Three mines are located in Uttarpradesh Two gold mines - Sonapahari Block and Dhurva-Biadand Block are located situated in Sonbhadra.
- India is home to the gold mines of 500 million tonnes reserves.
- The biggest gold reserves are found in Bihar (44 percent) and is then Rajasthan (25 percent), Karnataka (21 per cent), West Bengal (3 percent), Andhra Pradesh (3 percent), Jharkhand (2 per percent).
- The remaining 2 percent reserves are located in Chhattisgarh, Madhya Pradesh, Kerala, Maharashtra and Tamil Nadu.
- The Government of India recently amended the Minerals Evidence of Mineral Contents Rules to permit auction of a composite licence at the G4 level to auction deep-seated minerals, which includes gold.
- Countries with the largest Reserves of Gold across the World US, Germany, Italy,

France, Russia.

## Topic 29. CLIMATE CHANGE FUELLING RISE IN EXTREME WEATHER EVENTS

*Important for subject: Geography*



According to IMD the impact of climate change has hindered the capability of forecasting agencies forecast with precision.

- The study's analysis and study of the day-to-day rainfall data for the year 1970 indicates that the amount of extremely heavy rain days was increasing, while the number of moderate or light rain days had diminished.
- If it's not raining, then it's not raining.
- If it's raining, it's heavy rain. The rain intensity is higher when there is low pressure in the system.
- This is among the major trends that can be found in this region, which includes India.
- Studies have proven that this rise in heavy rainfall and reduction in light rainfall is caused by climate change.
- The IMD has explained that climate change has boosted the temperature of the air on the surface and this in its turn increased rate of evaporation.
- Since warmer air stores more moisture, it causes heavy rain.

- Climate change's impact on weather forecasts Climate change has affected the capacity of forecasting agencies to accurately predict extreme weather.
- The India Meteorological Department is installing more radars and is upgrading their high-performance computer system in order to take on the challenge.
- While the monsoon rains did not show any notable pattern in India, however, the frequency of heavy rain events had increased while that of lighter rainfall events diminished due to changes in the climate.
- The impact-based forecast is expected to improve to be "more specific, granular and precise" by 2025 . IMD can be expected to offer forecasts that go beyond panchayat-level clusters as well as specific areas in urban areas in the next few years the IMD stated.
- Extreme cyclones - Climate changes have increased unstable conditions in the atmospheric environment, which has led to an rise in convective activity, thunderstorms lightning, heavy rain and thunderstorms.
- The intensity of the intensity of cyclones in the Arabian Sea is also increasing.
- This rise in extremity weather phenomena has created challenges to forecasters.
- Studies have shown that the ability to predict heavy rain is affected by changes in the climate.
- Improvement in prediction model The accuracy of forecasts by the IMD has increased by around 30% - 40 percent for severe weather conditions like cyclones, heavy rainfall thunderstorms hot waves cold waves, fog and heat waves in the last five years as a result of improvements in monitoring networks as well as modeling as well as computing technology.
- The death toll from heat waves and cyclones had been reduced in recent years due to an improvement in the timing of early warnings and the ability to plan, prepare, and mitigation strategies.
- The IMD is expanding its observational network through the expansion of radars, automated rain gauges and weather stations and satellites in order to increase predictability.
- IMD has installed seven radars in the northwest Himalayas , and four more are scheduled to be put up this year.
- The process for purchasing is underway to purchase the purchase of eight radars in the

northeast Himalayan region.

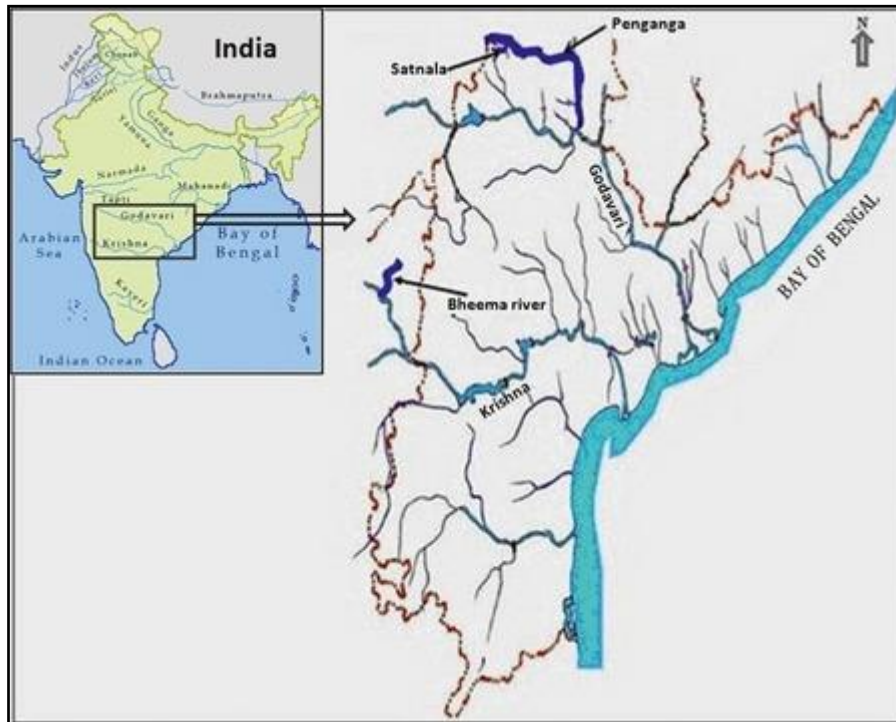
- There are gaps in the remainder of the nation that will be filled by 11 radars.
- Radars is expected to rise from 34 currently up to 67 in 2025, according to the IMD has stated.
- Radars are most popular because they offer a greater resolution and are able to provide observations each 10 min.
- Climate change and the Himalayas the subject of climate change and the fragility of the Himalayas IMD stated, "Climate change is a fact, and we must plan our entire activities in line with this.
- A study conducted by MoES, the Indian Institute of Tropical Meteorology, MoES says the frequency of mini-cloud storms (five centimeters or more of rainfall in one hour) is growing in the Himalayas and can cause damages. Insufficient rainfall in the north, east and the north-east - On the impact of the changing climate on monsoons, the digital information of rainfall from 1901 to now indicates that areas of the north, east and northeast India have seen a decline in rain, whereas some regions in western India including west Rajasthan are showing an increase.
- So, there is no notable trend for the United States in general.
- The monsoon is unpredictable and can show large-scale fluctuations.
- The government has made it clear that currently, the IMD-MoES system for weather modeling has the resolution of 12 kilometers.
- The goal is to complete it in six kilometers.
- The Ministry of Earth Sciences (MoES) is also planning to upgrade its high-performance computing system - from a size of 10 petaflops and up to thirty petaflops in the next two years. This will allow more data to be incorporated into the model which will then be used with higher resolutions.
- The less range an weather model the greater its resolution, as well as the accuracy.
- In the same way, the accuracy of the region-wide modeling system will also be increased from three kilometres to mile.
- State-wise analysis: The government in front of in the Parliament the following: Uttar Pradesh, Bihar, West Bengal, Meghalaya and Nagaland have shown significant decrease patterns in the southwest monsoon rain over the last 30 years (1989-2018 which included both years).



- The annual rainfall patterns across the five States together with Arunachal Pradesh as well as Himachal Pradesh, had also seen significant decreases.

### **Topic 30. KRISHNA AND GODAVARI RIVER**

*Important for subject Geography*



Krishna, Godavari levels on the rising Krishna the Krishna Basin covers Andhra Pradesh, Maharashtra and Karnataka with a total area of 2,58,948 Sq.km that is around 8percent of the territory of the nation.

- It is bordered by Balaghat range to the north and with and the Eastern Ghats on the south and east, as well as through The Western Ghats on the west.
- It is bounded by the Western Ghats on its west.
- Krishna River rises from the Western Ghats near Jor village of the Satara district in Maharashtra at an altitude of 1,337 meters just north of the length of the river from its source until its discharge to the Bay of Bengal is 1,400 kilometers.
- The principal tributaries joining it from the right side are the Ghatprabha along with the Malprabha and the Tungabhadra and those joining from the left Bhima and The Musi as well as the Munneruare connecting the river from left.
- The majority of the basin is occupied by agriculture, accounting for 75.86 percent of

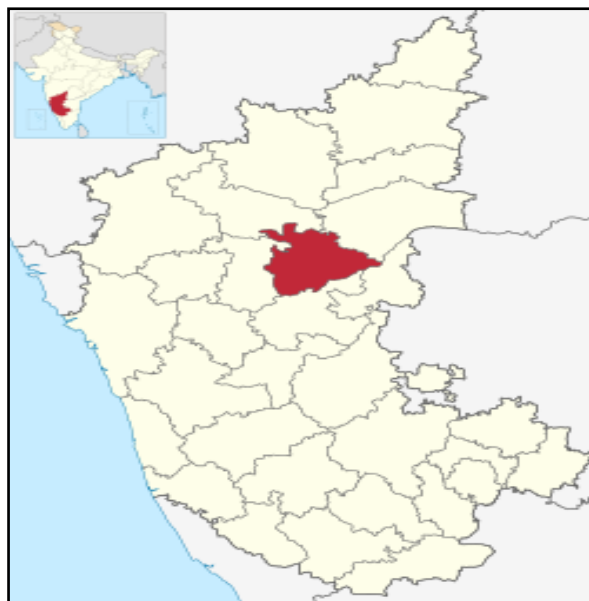


the total area.

- 4.07 percent part of it is covered with water bodies.
- Krishna River rises in the Western Ghats at an elevation of approximately 1337m.
- Just north of Mahabaleswar approximately 64 kilometers away from the Arabian Sea and flows for approximately 1400 km before flowing to the Bay of Bengal.
- The major tributaries joining Krishna comprise the Ghataprabha as well as the Malaprabha and the Bhima and as well as the Tungabhadra as well as the Musi.
- Godavari basin stretches across the states like Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha in addition to smaller areas in Madhya Pradesh, Karnataka and the Union territories of Puducherry with a total area in the range of 31281 Sq.km with the maximum width and length of approximately 995km and 583 km.
- The basin is bordered by the Satmala hills as well as the Ajanta range, and the Mahadeo hills to the north, and by the Eastern Ghats on the south and east, and through the Western Ghats on the west.
- The Godavari River flows at Trimbakeshwar in Nashik district.
- Nashik district in Maharashtra around 80km away from the Arabian Sea at an elevation of 1,067 meters.
- The duration of Godavari from its beginning to its outfall in it's outfall in the Bay of Bengal is 1,465 kilometers.
- Godavari River flows close to Nasik in Maharashtra in Maharashtra at an elevation of 1067 m.
- It flows for approximately 1465 km before flowing in into the Bay of Bengal.
- The main tributaries of the river include that of Pravara as well as the Purna the Manjra and the Penganga the Wardha, the Wainganga as well as the Pranhita(combined flows of Wainganga, Penganga, Wardha) The Indravati and the Maner along with the Sabri.

**Topic 31. KOPPAL**

*Important for subject: Geography*



The Prime Minister Narendra Modi on Sunday praised Karnataka's efforts in the toy manufacturing cluster in Koppal.

- It is the Koppal Toy Cluster (KTC) is the first of its kind in the country that went into operational in April 2022.
- Kinnal is a renowned place with a vast artistic heritage.
- The city was once bustling center for arts and crafts, among them, exquisite sculptures in wood.
- The famous murals in the Pampapateshwara Temple, and the intricate designs on the chariot made of wood in Hampi is believed as the creations of the ancestral ancestors who were the Kinnhal craftsmen the present.
- Chitragara is the name given to the artisans.
- Wood that is lightweight is used to make toys.
- The paste that is used to join the various pieces is composed of pebbles and tamarind seeds.
- Jute rags, which are soaked and cut into pieces and then dried, powdered and then mixed together with saw dust, tamarind seeds and sawdust are transformed into kitta.
- A mixture of pebble paste and liquid gum can be used to embossing ornaments and jewellery over the entire body model.

- After the parts of the figure have been assembled Kitta is sprayed by hand over the entire figure small bits of fabric are glued to it using the paste made of tamarind.
- On top of this, is the pebble paste that forms the foundation for the painting.

### **Topic 32. HAVE COASTAL ECOSYSTEM NORMS BEEN VIOLATED?**

#### ***Important for subject: Environment***

This week this week, this week, the Comptroller and Auditor General (CAG) of India submitted a report to the Parliament about whether the steps that the Union Environment Ministry to conserve India's ecosystems along the coast have proved effective.

- The CAG often conducts "performance audits" of government programs and departments.
- The most recent report includes conclusions of an audit on Conservation of Coastal Ecosystems from 2015 to.
- **What are the responsibilities of the Centre regarding the protection of the coast?**
- It has also issued notices pursuant to the Environment Protection Act, 1986 which regulates actions along the Indian coast, specifically with regard to construction.
- The Coastal Regulation Zone Notification (CRZ) 2019 issued by the Ministry Classifies the coastline into distinct zones for the management of infrastructure and to regulate them.
- The three bodies responsible in the implementation process of the CRZ include the National Coastal Zone Management Authority (NCZMA) located at the Centre and the State and Union Territory Coastal Zone Management Authorities (SCZMAs/UTCZMAs) across each coast State as well as Union Territory and the District Level Committees (DLCs) in each district with a coastline and in which the CRZ notification applies.
- The bodies check if CRZ approvals given by the government have been granted as in accordance with the rules, and whether project developers who have received approval are in compliance with guidelines, and if objectives of the development plan in the Integrated Coastal Zone Management Programme (ICZMP) are achieved.
- They also assess the actions that the government has taken to achieve the goals in the Sustainable Development Goals, a set of United Nations prescribed targets for nations to eliminate poverty and developing sustainable societies.

- **What was the reason why the CAG do this audit?**
- The CAG is mandated by the Constitution to conduct investigations and make reports on publicly funded programs.
- The CAG conducted "pre-audit studies" and found that there were significant violations of the CRZ within the coastal stretches.
- The incidences of illegal construction (reducing the area of coastal land) and discharges of effluent by local entities, industry, and aquaculture farms were in the news media and the agency was compelled to conduct an extensive investigation.
- **What was the result of the audit?**
- The audit identified several categories of violations.
- One reason was that for one, the Environment Ministry hadn't notified NCZMA as a permanent entity and it was reconstituted every couple of years.
- In the absence a formal definition of membership, the body was operating as an ad hoc body.
- There have been instances of Expert Appraisal committees -- which is a body composed of scientists and senior bureaucrats who assess the viability of an infrastructure project as well as its environmental impact and were not present at the time of project discussions.
- There were instances of participants of the EAC not being more than half strength at the discussions.
- The SCZMA was not reinstated in Karnataka and it was delayed restart in States like Goa, Odisha and West Bengal.
- It was apparent that the DLCs from Tamil Nadu lacked participation from the traditional communities of the region.
- Within Andhra Pradesh, DLCs were not even in existence.
- There have been instances where projects were approved despite deficiencies within their Environment Impact Assessment (EIA) reports.
- This included consultants who were not accredited in preparing the EIA and using outdated data, not considering the environmental effects from the construction, and not assessing the risks that the project site was susceptible to, and so on.
- **What issues did the CAG discover within the States?**
- Tamil Nadu didn't have a strategy to preserve its Gulf of Mannar Islands.

- In Goa there was no monitoring system to monitor coral reefs or plans for management to protect nesting turtles.
- In Gujarat the instruments that were purchased to analyze the physiochemical characteristics of the soil and water in the inertial zone within the Gulf of Kutch weren't used.
- Sea patrolling in Gahirmatha Sanctuary, in Kendrapara, Odisha did not happen.
- A research lab in Dangmal, Kendrapara District, Odisha which was constructed in the year 2016 hasn't been functional to date.
- There was no site to communicate information about the NCZMA that the CAG discovered that was a clear infraction of the mandated rules from the Authority.
- **What's next?**
- The reports are presented to Parliament's Standing Committees of Parliament, they select the conclusions and recommendations they believe are the most crucial to the public's attention and hold hearings on them.
- In this instance in this case, the Environment Ministry is expected to be able to explain the mistakes made from the CAG and rectify the situation.
- **Integrated Coastal Zone Management (ICZM):** ICZM aims to improve the livelihoods of coastal communities as well as protect the ecosystem of the coast.
- The ICZM plan focuses on identifying the need for infrastructure and ways to improve livelihoods within coastal regions.
- Mangrove conservation is one of the elements.
- The national portion of the project involves mapping the coastline of the country and delineation of the danger line.
- It is a World Bank assisted project.
- It is managed through the Department of Forests and Environment with the assistance of the Union Ministry of Environment, Forests and Climate Change (MoEFCC).
- The National Centre for Sustainable Coastal Management (NCSCM), Chennai will provide technological and scientific inputs.
- Society of Integrated Coastal Management (SICOM) SICOM has been created under the auspices under the Ministry of Environment, Forests and Climate change.
- Government of India with a goal of a healthy, vibrant and resilient Coastal and Marine Environment for continual and increased output of benefits for the Country as

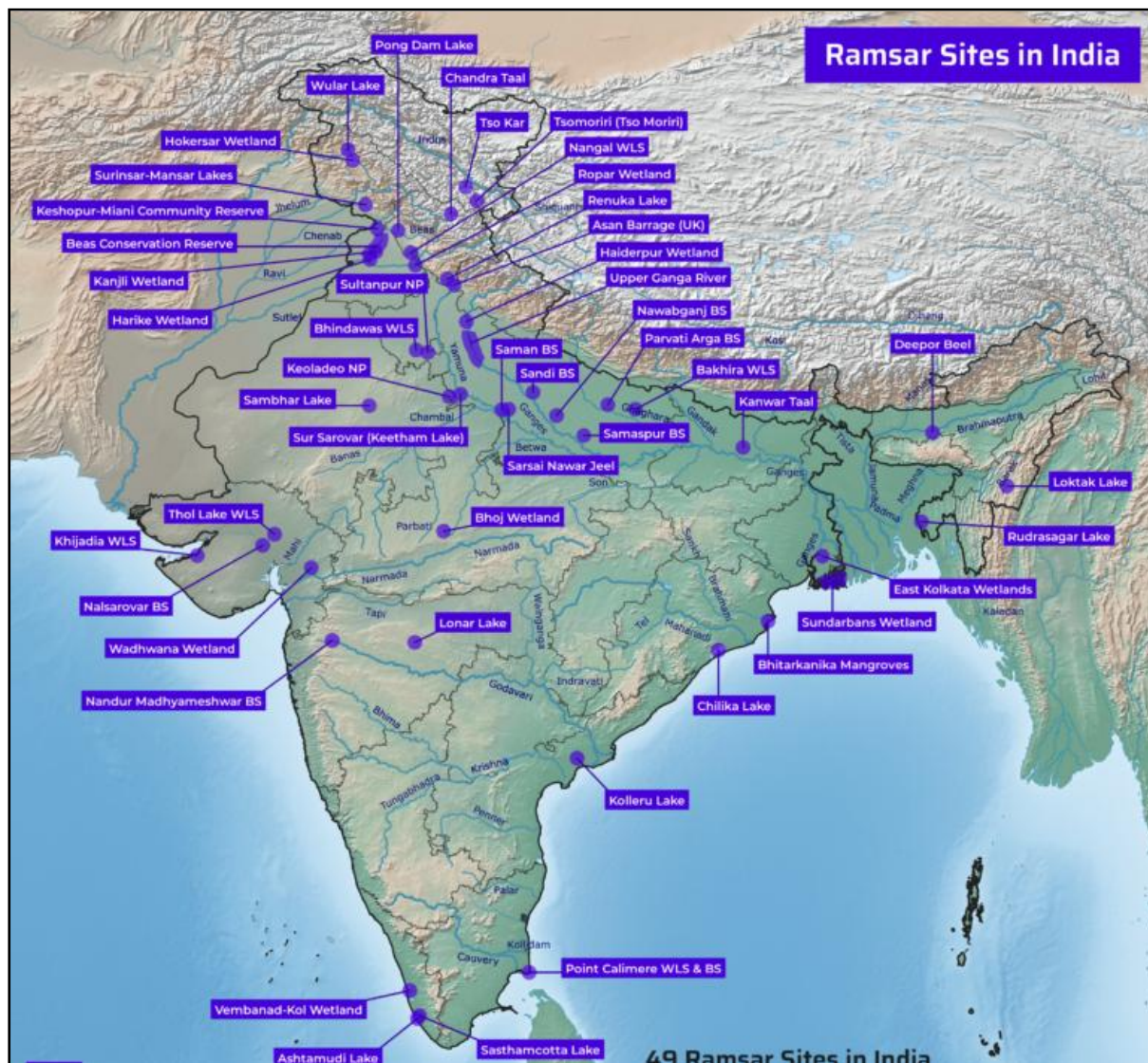
well as its Coastal Community.

- Primary Roles, Responsibilities and Goals The Nodal Agency is responsible for strategic planning and management, as well as monitoring, execution and the successful the implementation Integrated Coastal Zone Management (ICZM) practices all across the nation and National Project Management Unit (NPMU) for the ICZM Project and the ENCORE project in all of the thirteen Coastal States/UTs.
- To act as an expert Secretariat of the National Coastal Zone Management Authority (NCZMA) with respect to the regulations and CRZ classifications of areas of coastal land.
- Coordinating agency as well as an interface between the different departments of Govt. Of India and the Govts and departmental lines of thirteen Coastal State/UTs.
- The Financial Institutions (World Bank) to Enhance Coastal and Ocean Resource Efficiency Project (ENCORE)
- Support to prevent violations of CRZ through enhanced technology-enabled enforcement, strengthened institutions, and legislative and regulatory reforms.
- SICOM has also commenced an initiative called the Pilot Blue Flag Programme, the first of its kind program in India as part of Beach Environment & Aesthetic Management Services (BEAMS) to ensure the development of world-class Beaches in India Building capacity in Coastal State Units in planning the implementation, management and maintenance of an Integrated Coastal Zone
- Management programs as well as other state and national organization or agencies related to the projects
- As an intermediary between local communities and experts and the government, and disseminating and distributing instances of best practices as well as guidelines for marine and coastal ecological security as well as livelihood security of island and coastal communities
- To perform any additional task or task as given by MOEF&CC from time to time, in the field of coastal management as well as other related tasks.



### Topic 33. RAMSAR SITES

*Important for Important for subject: Environment*



India has added 11 more wetland sites to its number of Ramsar sites, making a total of 75 Ramsar sites that cover an area of 13,26,677 hectares within the 75th year of independence.

- India is among the Contracting Parties to Ramsar Convention that was that was signed at Ramsar, Iran, in 1971.
- India signed the agreement on February 1, 1982.
- Between 1982 and 2013, 26 locations were included in the listing of Ramsar sites. However between 2014 and 2022, the nation has included 49 additional wetlands this number of Ramsar sites.
- Tamil Nadu has maximum no. of Ramsar sites (14 sites) and is which is followed by UP which has 10 no. of Ramsar sites.



- Wetland Geographical location and Species significant ecological and economic value  
Tampara Lake the most prominent freshwater lakes in the State of Odisha situated in Ganjam district.
- The ground depression was gradually filled with water from the catchment flows and was referred to as "Tamp" according to the British and was later called "Tampara" among the people of that area.
- The wetland is home to at sixty species of birds as well as 46 species of fish as well as more than 48 varieties of phytoplanktons plus the more than 7 species of terrestrial plant as well as macrophytes.
- The wetland provides a vital habitat for species that are at risk like *Cyprinus carpio* Common pockethard (*Aythya ferina*) and the River tern (*Sterna aurantia*).
- Averaging a yield of about 12 tonnes annually The wetland is major source of income for local communities.
- In addition to fish, it also offers provisioning services, such as water for agricultural and domestic use. It is a well-known tourist and recreation spot.
- Hirakud Reservoir The largest earthen dam in Odisha was inaugurated in the year 1957.
- The reservoir is home to 54 species of fish. the reservoir. One is classified as endangered, six species are threatened species and 21 fish species.
- More than 130 species of birds have been observed at the site, among which, 20 species have high conservation importance.
- The reservoir provides an important source of water for producing about 300MW hydropower as well as irrigation of 436,000 ha of the cultural command zone.
- It also provides vital hydrological benefits by regulating floods within the Mahanadi delta, which is the social and ecological hub of the eastern coastal region of India.
- Hirakud reservoir is a tourist attraction of high quality with more than 30,000 visitors annually who visit the site.
- Ansupa Lake the largest freshwater lake in Odisha located in Banki subdivision of the Cuttack district.
- It is an oxbow-shaped lake that was created by the River Mahanadi and is spread across a total surface of 231 ha. The the wetland houses 194 birds species as well as at least 61 species of fish as well as 26 mammals, in plus 244 different species of

macrophytes.

- The wetland provides a safe habitat to at least three threatened bird species *Rynchops albigollis* (EN), *Sterna acuticauda* (EN) and *Sterna aurantia* (VU) and three threatened fish species *Clarias magur* (Clariidae) (EN), *Cyprinus carpio* (Cyprinidae) (VU) and *Wallago attu* (VU).
- Ansupa lake provides freshwater needs of the surrounding regions and helps to ensure the livelihood of the local community through agriculture and fishing.
- The wetland is a huge potential for tourism and recreational activities since it is a key wintering site for birds. It is also well-known for its beauty and scenic appeal.
- Yashwant Sagar an Important Bird Areas (IBA) located in the Indore region and one of the major birding areas in the Malwa Region in Madhya Pradesh.
- Yashwant Sagar reservoir comes under the authority of the Indore City Municipal Corporation a protector of the endangered Sarus Crane in central India.
- The backwaters of lakes contain plenty of shallow areas that are ideal to waders as well as other waterfowl
- As the level of water recedes numerous islands are used as nesting grounds for waterfowl.
- Due to its huge low reed beds Wetland habitat is considered paradise to many of winter migrants.
- The water is used to supply water in the city of Indore.
- Chitrangudi Bird Sanctuary, locally called "Chitrangudi Kanmoli" It is situated in the Ramanathapuram district of Tamil Nadu.
- The wetland has been a designated protected zone since the year 1989, and was declared a Bird Sanctuary, coming under the control of Tamil Nadu Forest Department, Ramanathapuram division.
- About 50 birds belonging to thirty families were identified on the location. The most notable waterbirds seen in the site are spot-billed pelicans Little egret and large egret, grey heron open-billed stork purple and pond herons.
- Chitrangudi is situated in the midst of fields for agriculture which are where various crops are grown all through the entire year.
- The wetland also hosts numerous fishes including amphibians, molluscs, aquatic insects and their larvae, which are excellent food sources for the waterbirds arriving.

- Chitrangudi Bird Sanctuary is an ideal place to stay for winter migration birds. The complex of Wetlands such as the SuchindrumTheroor
- Its part of the SuchindrumTheroorManakudi Conservation Reserve, Tamilnadu It was formed for birds' nesting purposes and it attracts thousands of birds every year.
- About 250 bird species have been identified within the area Of which 53 are migratory species, 12 are endemic and 4 endangered. It is a constructed, underground tank and it is perennial.
- Copper plate inscriptions dating back to the 9th century refer to Pasumkulam, Venchikulam, Nedumarthukulam, Perumkulam, Elemchikulam and Konadunkulam.
- It has been declared as an Important Bird Area. It is located in the southern part of the Central Asian flyway of migratory birds.
- Vaduvur bird sanctuary, which is spread across the area of 112.638 ha. It is a huge human-made irrigation tank as well as a shelter for birds migrating in Tamil the state of Tamilnadu. Indian Pond Heron *Ardeolagrayii* was found in the majority of the tanks that were surveyed.
- A large number of wintering waterfowl species like Eurasian Wigeon *Anas penelope*, Northern Pintail *Anas acuta*, Garganey *Anas querquedula* were observed in tanks
- Vaduvur Bird Sanctuary has a varied habitat that includes a variety of inlets as well as fields that are irrigated, which provide an ideal nesting area and foraging grounds for birds.
- This site offers assistance to the species mentioned above in the critical phases of their life cycle.
- Kanjirankulam Bird Sanctuary It is a Protected area near MudukulathurRamanathapuram District, Tamil Nadu.
- India is a country that was declared in 1989. as the home of the breeding population of waterbirds that migrate in the months of October to February. They include painted storks white ibis, little egret, black ibis Great egret, little egret.
- The site qualifies as an IBA as the threatened Spot-billed Pelican *Pelecanus philippensis* breeds here.
- The wetland is home to a diverse biodiversity including a wide range of threatened species like the Spot-billed pelican Oriental Darter, Oriental white Ibis and Painted Stork and also commonly found in water and shore birds such as greenshanks,

plovers, stilts and forest bird species like bee-eaters and bulbuls, barbets, cuckoos, starlings and many more.

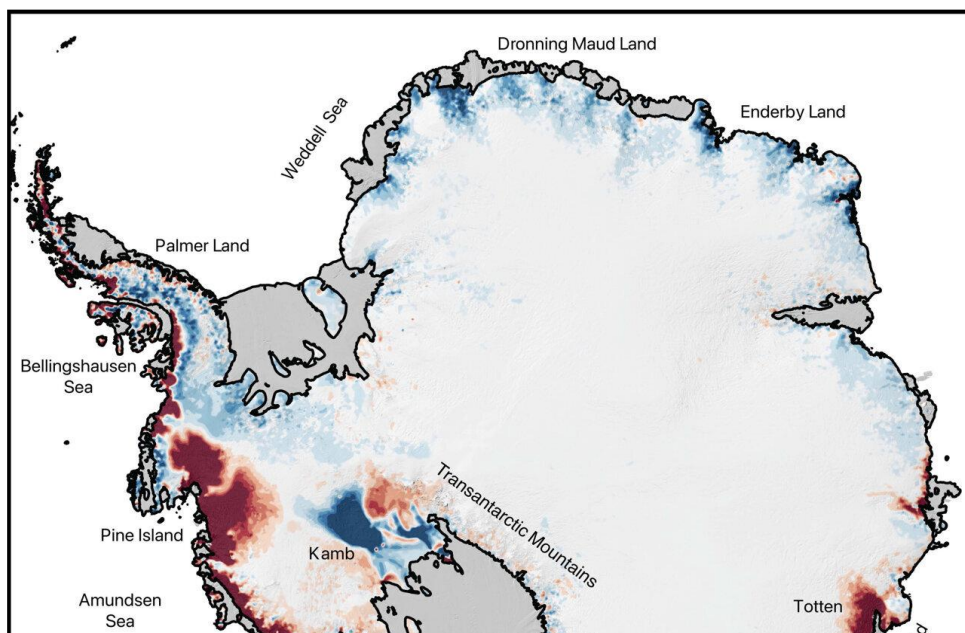
- They serve as nesting, breeding and roosting sites, as well as foraging and stopover spots for birds.
- The wetland hosts IUCN RedList vulnerable avian species such as *Sterna aurantia* (River Tern).
- It is noted as a nesting spot for several species of migratory herons that nest in the magnificent growth of babul trees.
- The site is a qualified IBA.
- Thane Creek It is located in Maharashtra, India. There are a variety of sources of freshwater to the stream, of which Ulhas The River has the most significant and is followed by numerous drainage channels that originate from different suburban areas in Mumbai, Navi Mumbai & Thane.
- More than 202 species of avifaunal life The creek also hosts an array of 18 fish species, crustaceans, and Molluscs, 59 species butterflies and 67 species of insects and 37 species of phytoplankton along with 24 species of Zooplankton and 23 different species of Benthos.
- It is now designated as Thane Creek Flamingo Sanctuary.
- Thane creek is surrounded by mangroves along both banks and accounts for about 20 percent in the entire Indian mangrove plant species.
- This area is an important element of the wetland system in the Central Asian Flyway of the birds. It has been classified by the IBA as one of the Important Bird Area (IBA).
- Hygam Wetland is located in the River Jhelum basin and plays an important role in the role of a basin to absorb floods and biodiversity conservation site. It also serves as an eco-tourism sites, as well as a source of living security for local communities.
- The wetland is located within the Baramulla district. It is classified by the government as being one of the Important Bird Area (IBA).
- In the wake of the high rate of siltation Hygam Wetland has lost its characteristics of a wetland to an extent, and in many locations, has transformed its shape into a large landmass.
- Hygam Wetland provides a plethora of ecosystem services. These include fiber and

fish as well as the supply of drinking water and water treatment flooding regulation, climate control as well as recreational opportunities. Shallabug Wetland Conservation Reserve It is located in the District of Srinagar, UT of J&K.

- Wetlands in large areas get dry between September and March.
- The region has vast Reedbeds of *Phragmites communis* as well as *Typha angustata*. It also has a the lush growth of *Nymphaea candida* and *N. Stellata* in open water.
- It is home for more than four lakh birds, including migratory and resident birds of at minimum 21 species.
- It is also essential to maintain water levels during the winter months in the wetlands and other areas of conservation significance downstream.
- The wetland is essential to recharge aquifers.
- A significant natural floodplain system.
- The wetland is the main breeding grounds for a variety of species of waterbirds.

### **Topic 34. NASA STUDIES FIND PREVIOUSLY UNKNOWN LOSS OF ANTARCTIC ICE**

***Important for subject: Environment***



New research has been conducted on Antarctica includes the first map of an iceberg calving which doubles previous estimates of the loss due to glaciers and outlines how Antarctica is changing.

- One study released in Nature shows the way that iceberg calving, which is the break-

up of ice that has formed from a front of glaciers - altered the Antarctic coastline in the past 25 years.

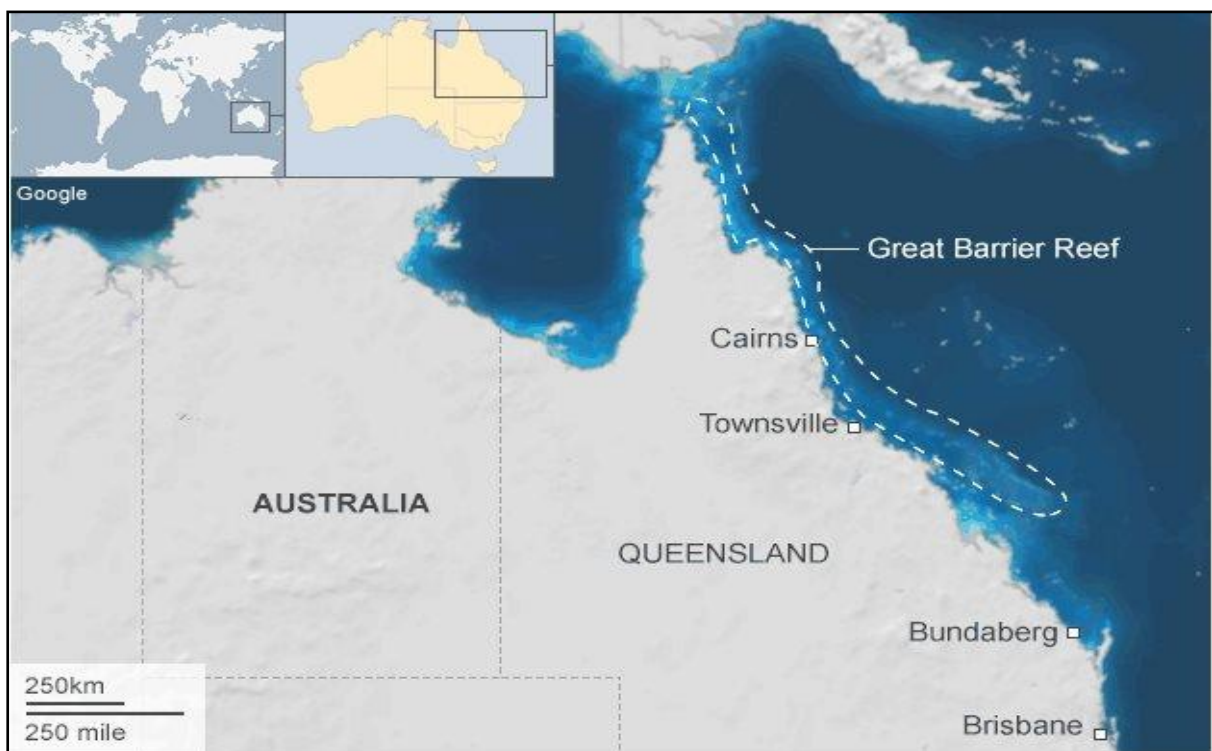
- The researchers discovered that the edges of the sheet had been losing icebergs quicker than the ice could be replaced.
- This surprising finding is double the previously reported estimates of loss of ice from Antarctic's floating shelves of ice since 1997, ranging from six trillion to twelve trillion tonnes.
- The loss of ice due to calving is causing a weakening of the glacier shelves and enabled Antarctic glaciers to move quickly to the ocean, increasing the rate of sea level increase.
- Iceberg Calving "Antarctica is deteriorating around its edge," says JPL scientist Chad Greene, lead author of the study on calving.
- "And as ice shelves diminish and decrease in size, the continent's enormous glaciers are likely to accelerate and accelerate the speed of global sea level rise."
- Ice shelves are like barriers to glaciers, stopping the ice from sliding down into the ocean.
- If the ice shelves are stable they follow a natural pattern of replenishment and calving which ensures their size remains fairly constant for the duration of time.
- In recent years the ocean's warming has been causing instability to Antarctica's glacier shelves by melting them from beneath, making them weaker and thinner.
- Satellite altimeters monitor the process of thinning, by recording the height change of the ice. However, up until now it was not possible to make a thorough assessment of how the changing climate could affect the calving process around the continent.
- Data gathered is from Satellite Missions ICESat1 (2003), ICESat2- (short for Ice, Cloud and land Elevation Satellite) which was launched in September.
- 15th of April, 2018, a part of the NASA's Earth Observing System, is an orbiting satellite mission to measure the elevation of ice sheets and the thickness of sea ice, along with topography of the land vegetation characteristics, cloud formation Cryosat-2 -- European Space Agency Earth Explorer Mission that was launched on April 8, 2010.
- EnvisatEnvisat Envisat is a huge earth-observing satellite that is currently orbiting and currently considered to be as space debris.



- The satellite was managed through the European Space Agency, it was the largest satellite used for Earth observation by civilians. ERS which stands for European Remote Sensing satellite (ERS) was the European Space Agency's very first Earth-observing satellite that was launched in an orbit that was polar.
- The ERS program was comprised of two missions: ERS-1 and ERS-2 that was launched in the exact same orbit the year 1991 and 1995 respectively.
- The spacecraft were created as identical twins, but with an crucial difference - ERS-2 contained an additional instrument (GOME) that was designed to measure the levels of ozone in the atmosphere.
- Changes in the elevation of the Antarctic glacier from 1985 to 2021 is depicted.
- The height of ice decreases (red) when the ice sheet melts through contact with ocean waters; it increases (blue) in areas where the accumulation surpasses melting.
- Ice shelves are displayed in gray.
- The missions that provided the data are listed below.

### **Topic 35. RECORD CORAL COVER DOESN'T NECESSARILY MEAN THE GREAT BARRIER REEF IS IN GOOD HEALTH**

*Important for subject: Environment*



The most extensive levels of coral cover in the last 36 years, have been documented in the

central and northern regions in Australia's Great Barrier Reef (GBR).

- Recent Results Coral coverage in regions of Great Barrier Reef is at an all-time high according to data released by the Australian Institute of Marine Science.
- In the northern part area of the reef the coral cover typically fluctuates between 20 percent to 30 percent.
- Presently, the number is at 36 percent.
- This is the highest recorded since monitoring began over three decades years ago.
- However, this doesn't necessarily indicate it's in good shape.
- A high level of coral cover may be misleading because they could result from a handful of dominant species that expand rapidly following disturbance (such as massive bleaching).
- However, these corals are extremely vulnerable to disturbance and are expected to end up dying within a couple of years.
- Without further details on the specific species, it's difficult to determine exactly how much of Great Barrier Reef has been destroyed or rediscovered following the most recent massive bleaching event.
- The rate of recovery for corals is staggering following a depressing decade in which the reef had to suffer six massive bleaching events of coral as well as four devastating tropical cyclones, active eruptions of crown-of-thorns starfish and the effects of flooding on water quality and storms, begs the question:
- what's happening? What exactly is a coral reef?
- Corals are invertebrate creatures comprising a huge collection of fascinating and colourful creatures called Cnidaria.
- They are the biggest living structure on the planet.
- Each coral is known as polyp, and thousands of these polyps reside together in colonies, which expand as polyps multiply, forming duplicates of themselves.
- The polyps contain tiny algae known as zooxanthellae that live in their tissues.
- The algae and corals have an interdependent relationship.
- The coral supplies the zooxanthellae the substances required to produce photosynthesis.
- In exchange, the zooxanthellae provide to corals with organic components of photosynthesis, such as sugars, used by coral polyps to aid in the production of

calcium carbonate skeletons.

- Apart from giving corals essential nutrients, zooxanthellae also are responsible for the distinctive and stunning colours of corals.
- Coral reefs are made up of hundreds of micro-sized polyps that form massive carbonate structures.
- Coral reefs are the biggest living thing on earth and the only living thing to see from space.
- Corals come in two varieties: hard corals as well as soft corals.
- Hard corals take calcium carbonate in seawater and create exoskeletons that are white and hard.
- Hard corals function in an approach that is the engineer of reef ecosystems, and measuring the amount the hard coral population is widely accepted as a method to assess the health of reefs.
- Soft corals are attached to these skeletons as well as the older skeletons constructed by their predecessors.
- Soft corals can also join their own skeletons into the structure as they grow older.
- The growing, multiplying structures slowly create coral reefs.
- Great Barrier Reefs- These reefs are known as the Great Barrier Reef spans 2,300 kilometers across the eastern coast of Australia and comprises more than 3,000 reefs.
- It is a remarkably diverse ecosystem with more than 12,000 species of animals and a multitude of species of marine flora and plankton.
- The significance of coral reefs: Reefs of coral are responsible for more than 25% of the marine biodiversity even though they take less than one percent of the seafloor.
- The marine life that is supported by reefs also fuels the worldwide fishing industries.
- In addition the reefs themselves, coral reef systems create \$2.7 trillion in annually in economic value from trade in services and goods as well as tourism.
- In Australia Barrier Reef, in pre-COVID times Barrier Reef in before COVID, produced \$4.6 billion in annual revenue from tourism and employed more than sixty thousand people, including guides and divers.
- Coral bleaching:
  - Corals have an symbiotic bond with single-celled algae known as Zooxanthellae.
  - The algae provides food for corals via photosynthesis.

- It also provides them with vibrant colours.
- When they are exposed to conditions such as pollution, heat stress, or excessive levels of acidity in the ocean Zooxanthellae begin to produce reactive oxygen species that are not beneficial for corals.
- The corals then kick out the color-giving algae from their polyps, which exposes their white exoskeleton, result in coral starvation since corals are unable to make their own food sources.
- Corals that have bleached can live on the level of bleaching and the return of temperatures back to their normal levels.
- Stress and bleaching that is prolonged in the external environment could cause coral death mass Bleaching The issue is that in the last decade mass bleaching events have been more evenly spaced in time.
- Mass bleaching year details the first Mass bleaching of 1998 El Nino Second Mass bleaching 2002.
- Most damaging and longest lasting Third Mass bleaching 2020 Fourth Mass bleaching 2022 according to Australian government's scientists 91% of the reefs it studied in the month of March had been affected by bleaching threats to Great Barrier Reef
- The reef is at the point of being eligible for an "in-danger" designation with the World Heritage Committee.
- The reef was also described in the State of the Environment Report as being in an unhealthy and declining condition.
- To ensure the protection of our Great Barrier Reef, we have to regularly keep track of and report on the condition of the reef.
- The Institute of Marine Science's longer-term surveillance program has been collecting and releasing this information since 1985.
- The most recent report gives an extensive and useful summary of how coral cover changed on 87 reefs in three areas (north central, north and south) over the last 36 years.
- The report's findings overall, the long-term monitoring team discovered that the amount of coral has increased on a majority of reefs.
- The amount of coral cover in reefs close to Cape Grenville and Princess Charlotte Bay

in the northern region was restored from bleaching with two reefs sporting more than 75 percent coverage.

- in the central region, where coral cover was historically less than in the south and north and south, the cover of coral is at an all-regional high of 33 percent.
- The southern sector has a lively record for coral cover. In the latter half of the 1980s, coral coverage topped 40 percent then fell to a regional low of just 12 percent in 2011 following Cyclone Hamish.
- The area is currently experiencing an outbreak of crown-of-thorns starfish.
- Yet, the coral cover in this region remains fairly high at 34 percent.
- Findings and reality- According to Australia's Institute for Marine Sciences' report the recovery of reefs is solely due to the increase in coral cover. Let's take a look at the concept.
- The coral cover index is an extensive proxy measurement that reveals the state of the habitat.
- It's a relatively simple data to gather and report on as well as the commonly utilized monitoring metric for coral reefs.
- The observation of an abundance of coral could indicate an underwater reef in good health, and an growth in coral cover following disturbances could signal the recovery of a reef.
- However, in this case it is more likely that the reef is controlled by a small number of species, since the report indicates that the branching and plating *Acropora* species have triggered the growth in coral coverage.
- *Acropora* coral is known because of its "boom as well as boom and bust" time-frame.
- Following disturbances, such as the cyclone, *Acropora* species act as pioneers.
- They are quick to recruit and establish colonies empty spaces, while the more advanced plate-like species are able to rapidly cover vast areas.
- They are fast-growing. *Acropora* corals dominate in the initial phase of recovery following disturbances like the recent string of massive bleaching events.
- But these corals are also vulnerable to damage from waves and disease as well as coral bleaching and can disappear within a couple of years.
- The holes in the studySimply stating that a reef was recuperated by a person pulled behind a boat in order to get a quick visual estimation of the coral's cover is similar to

flying in the helicopter and saying that the forest that was destroyed by bushfires has grown because the canopy is growing back.

- The study does not provide any information on diversity, or about the number and health of the other species and animals living in and around the trees, or the coral.
- There isn't any data to support or refute it however, it is likely that local declines or extinctions of marine life that is coral-affiliated like the coral-eating fishes and crustaceans and molluscs, have also taken place.
- Without additional details at the level of specific species, it's difficult to know exactly how much of Great Barrier Reef has been destroyed or reconstructed since the most recent massive bleaching event.
- The report's prospects study, which was published in the year, looked at the distribution of coral over 44 years data from Jiigurru, Lizard Island, near the northern end of the Great Barrier Reef.
- It found that 28 of the 368 types of coral that were recorded at the site haven't been observed for more than 10 years and are in danger of local disappearance.
- Lizard Island is one location in which the amount of coral has increased rapidly after the catastrophic bleaching event.
- However, there's an increased risk that local coral species extinctions have been observed.
- Based on data about coral cover it's tempting to believe that the reef is confident.
- But if more frequent and intense storms and heatwaves are expected in the near future it's best to be wary of the reef's health or its resilience.

### **Topic 36. THE GULF COOPERATION COUNCIL (GCC), EURASIAN ECONOMIC UNION (EAEU) AND EUROPEAN FREE TRADE ASSOCIATION (EFTA) WANT TO NEGOTIATE TRADE PACT**

***Important for subject: International relations***

GCC Gulf Cooperation Council (GCC) is a economic and political alliance made up of six nations in the Arabian Peninsula: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

- The GCC was established in 1981, the GCC encourages security, economic and cultural co-operation between the six countries and annually holds a summit to



discuss regional and cooperation issues.

- Eurasian Economic Union (EAEU) The Eurasian Economic Union is an international organisation for regional economic integration.
- It is a legal entity with international recognition and was established under the Treaty on the Eurasian Economic Union.
- The EAEU allows for the an open transportation of services, goods, capital , and labor. is committed to a coordinated, uniform and a single policy in the areas governed in the Treaty and international agreements within the Union.
- The Member-States of the Eurasian Economic Union are the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation.
- The Union is being established to upgrade and improve the efficiency of and collaboration between national economies as well as to encourage stable growth in order to improve the standard of living for the people of those Member States.
- European Free Trade Association (EFTA) The European Free Trade Association (EFTA) is the intergovernmental association comprising Iceland, Liechtenstein, Norway and Switzerland.
- It was founded in 1960 by the at the time seven Member States for the promotion of economic integration and free trade among its members.

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### **Topic 37. RUSSIA SUSPENDS START INSPECTIONS OF ARMS IN PROTEST OF US TRAVEL RESTRICTIONS.**

***Important for subject: International Relations***

START TREATY, an international body this is a deal with the United States of America and the Russian Federation on measures for the further reduction and restriction of the use of strategic offensive weapons.

- The treaty came into force on February 5th 2011.
- New START has replaced the 1991 START I treaty that expires in December 2009, and has superseded that of 2002.
- Strategic Offensive Reductions Treaty (SORT) that came to an end when New START entered into force.
- It's a follow-up to the START framework that was signed in 1991 (at the close of

Cold War) that limited each side in the range of 1,600 delivery systems for strategic purposes as well as the 6,000 warheads.

- It will continue the bipartisan effort to reduce the USA and Russian nuclear arsenals with strategic significance by restricting each side by 700 launchers for strategic purposes as well as 1 550 warheads that are operational.
- The agreement will expire in February 2021 unless it is extended for five years.

### **Topic 38. NATIONAL INTELLECTUAL PROPERTY AWARENESS MISSION (NIPAM)**

***Important for subject: Government schemes***

National Intellectual Property Awareness Mission (NIPAM) has reached its goal of providing Intellectual Property (IP) awareness and basic education to 1 million students.

- NIPAM is a renowned program designed to teach IP awareness and training in the basics it was officially launched on the 8th of December 2021 as part of the "Azadi Ka Amrit Mahotsav" celebrations.
- The program is implemented in the Intellectual Property Office, the Office of Controller General of Patents, Designs and Trade Marks (CGPDTM), Ministry of Commerce and Industry.
- The pan-India ambitious initiative is to raise awareness about intellectual property rights and their legal rights for 1 million schoolchildren.
- Its goal is to teach the spirit of innovation and creativity to students attending higher education (classes 8-12) and to inspire and excite the students of universities and colleges to invent and safeguard their work.

### **Topic 39. MULYA PRAVAH**

***Important for subject: Government Schemes***

The University Grant Commission has approved the updated guidelines for "Mulya Pravah"

- Mulya Pravah: University Grants Commission (UGC) has unveiled a policy framework
- Mulya Pravah Guidelines for the inculcation of human values and Ethics in Professional Practice in higher Educational Institutions

**Topic 40. THE EVERGREEN REVOLUTION: MAKING HUNGER HISTORY*****Important for subject: Agriculture***

The green revolution of the 1970s and 1960s were founded on the spread of genetically modified varieties of rice, wheat, maize, and other crops which were distinguished by their capacity to use sunlight, water as well as plant nutrients effectively, and transform them into grains.

- Based on the most recent estimates the farming industry is no longer lucrative and more than 40 percent of farmers would leave if they had an alternative
- The need to prepare for Evergreen Revolution: Evergreen revolution refers to the improvement of productivity throughout the years without environmental and social harm.
- The evergreen revolution is the integration of ecological principles into the development of technology and its diffusion.
- Dr. M. S. Swaminathan coined "The Evergreen Revolution" to emphasize the path that will increase productivity and production so that the short- and long-term objectives of food production aren't incompatible.
- The concept is to make more with more land and pesticides, which means less water, and it should be an evergreen process to achieve sustainable agriculture.
- Traditional crops such as jowar, bajra and pulses as well as fodder must get a boost and be promoted as part of the Prime Minister's program to replace seeds.
- Millets are often referred to as Super food and their production can be considered as a strategy to sustainably farming and a healthy planet.
- **Millets in India:**
  - The three main millet crops that are currently being growing in India are the jowar (sorghum) as well as bajra (pearl millet) and Ragi (finger millet).
  - Additionally, India grows a rich variety of bio-genetically diverse native varieties of "small millets" like kodo Kutki, kutki and Sanwa.
  - Major producers include Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.
  - Need for Reviving Millet Cultivation:
- **Health and Nutritional Safety:** Millets are not as cost-effective and nutritionally superior than rice and wheat due to their high levels of protein fiber, vitamins, and

fibre minerals, such as iron.

- Millets are also high in magnesium and calcium.
- For instance, Ragi is known to contain the highest amount of calcium of all food grains.
- The high iron content in the diet helps fight the levels of anaemia among Indian women who are reproductive and infants.
- **Climate resilient:** These are also more robust and drought-resistant, which is due to their short growing seasons (70-100 days, compared with 120-150 days in the case of wheat/paddy) and a lower requirement for water (350-500 mm, versus 600-1,200 mm).
- **Economic Security:** Because a low investment is required for the production of millets, they could be an enduring source of income for farmers.
- They can tackle health issues.
- Millets are a great way to combat health issues and lifestyle issues like diabetes and obesity because they're gluten-free, and contain a low glycemic index (a ratio of the amount of the carbohydrates in food by their effect on your blood glucose level).
- Millets are high in antioxidants.
- The Union Agriculture Ministry, in April of 2018, declared millets "Nutri-Cereals", considering their "high nutritive value" and additionally "anti-diabetic properties".
- The year 2018 was also declared as the "National Year of the Millets".
- The government has increased the minimum support price (MSP) in Millets to provide an enormous price incentive for farmers.
- It was the United Nation General Assembly adopted an Indian-sponsored resolution to commemorate 2023 as International Year of Millets.

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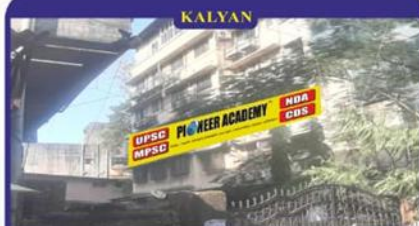
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