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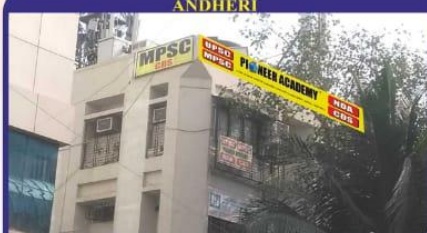
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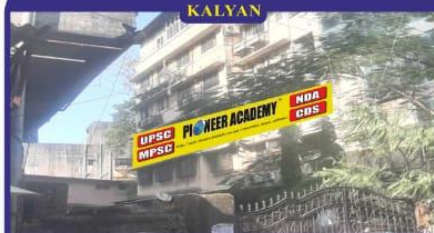
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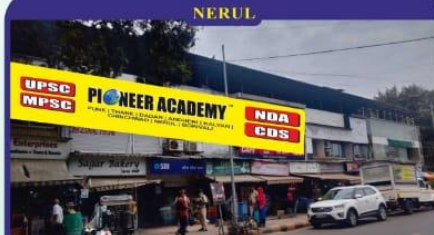
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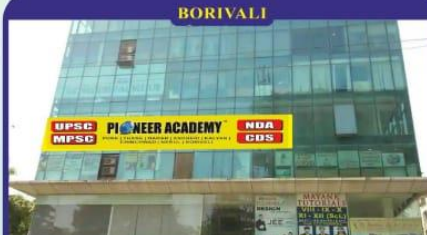
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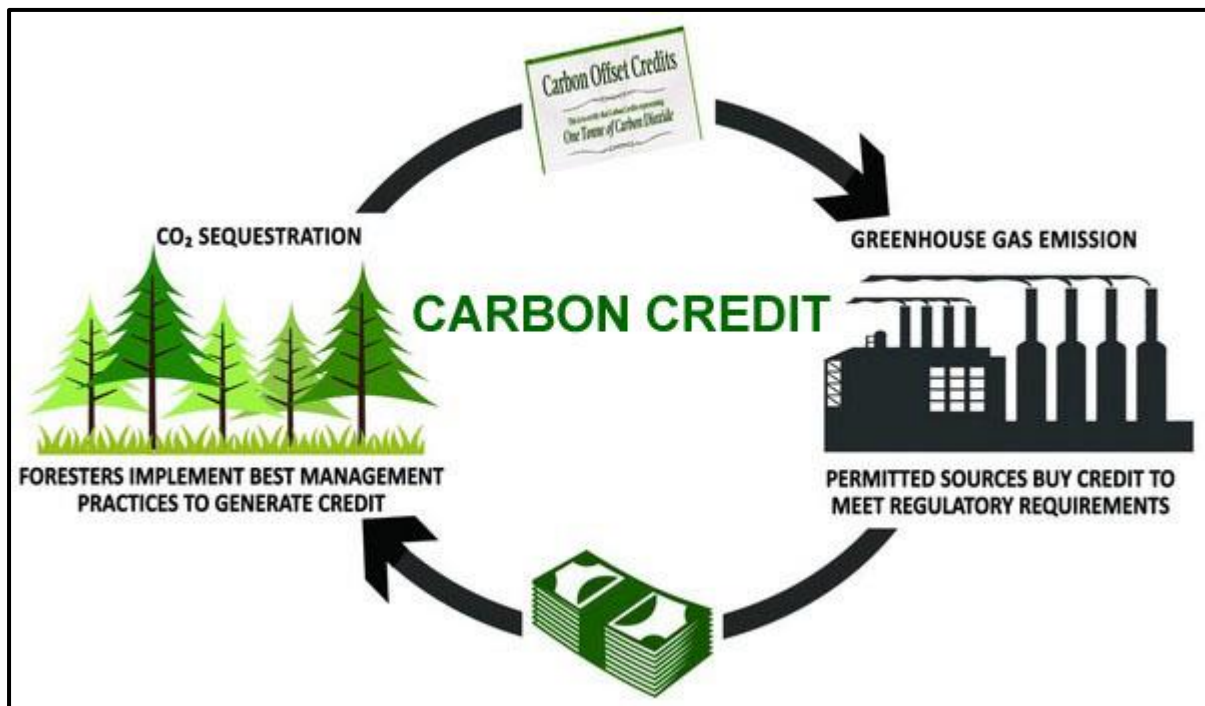
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Success is born of action...

Topic 1. CARBON CREDIT

Importance for Prelims: Environment



Nurture. farm's rice project generates twenty,000 carbon credits

What Is a Carbon Credit?

- A carbon credit could be a allow that permits the owner to emit a definite quantity of dioxide or different greenhouse gases.
- One credit permits the emission of 1 ton of dioxide or the equivalent in different greenhouse gases.
- Countries that grime area unit awarded credits that permit them to still grime up to a definite limit.
- That limit is reduced sporadically.
- Meanwhile, the countries might sell any uncalled-for credits to a different company that desires them. Significance of Carbon Credit Carbon credits were devised as a mechanism to cut back gas emissions.
- Companies get a group range of credits, that decline over time.
- They will sell any excess to a different company.
- Carbon credits produce a financial incentive for corporations to cut back

their carbon emissions.

- Those {that willnot|that can't} simply cut back emissions can still operate, at the next monetary value.
- Carbon credits area unit supported the “cap-and-trade” model that was accustomed cut back sulfur pollution within the Nineteen Nineties.
- Background The United Nations’ Intergovernmental Panel on global climate change (IPCC) developed a carbon credit proposal to cut back worldwide carbon emissions in a very 1997 agreement called the metropolis Protocol.
- The agreement set binding emission reduction targets for the countries that signed it.
- Another agreement, called the Marrakesh Accords, spelled out the principles for the way the system would work.
- Kyoto protocol was revised in 2012 in AN agreement called the port modification, that was sanctioned as of October 2020, with 147 member nations having “deposited their instrument of acceptance”.
- Negotiators at the urban center COP26 global climate change summit in Nov 2021 in agreement to make a worldwide carbon credit offset commerce market.

What will the metropolis protocol say on emission reduction?

- The metropolis Protocol aims to limit or cut back the gas emissions by 3 market-based mechanisms – emissions commerce, clean development mechanism and joint implementation.
- 1. Emissions trading– a complicated country “A” will acquire emission units from a complicated country “B” for meeting a section of their emission reduction target.
- 2. Clean development mechanism– a complicated country will implement emission reduction comes in a very developing country to earn certified

emission reduction (CER) credits which may be listed to realize their reduction targets.

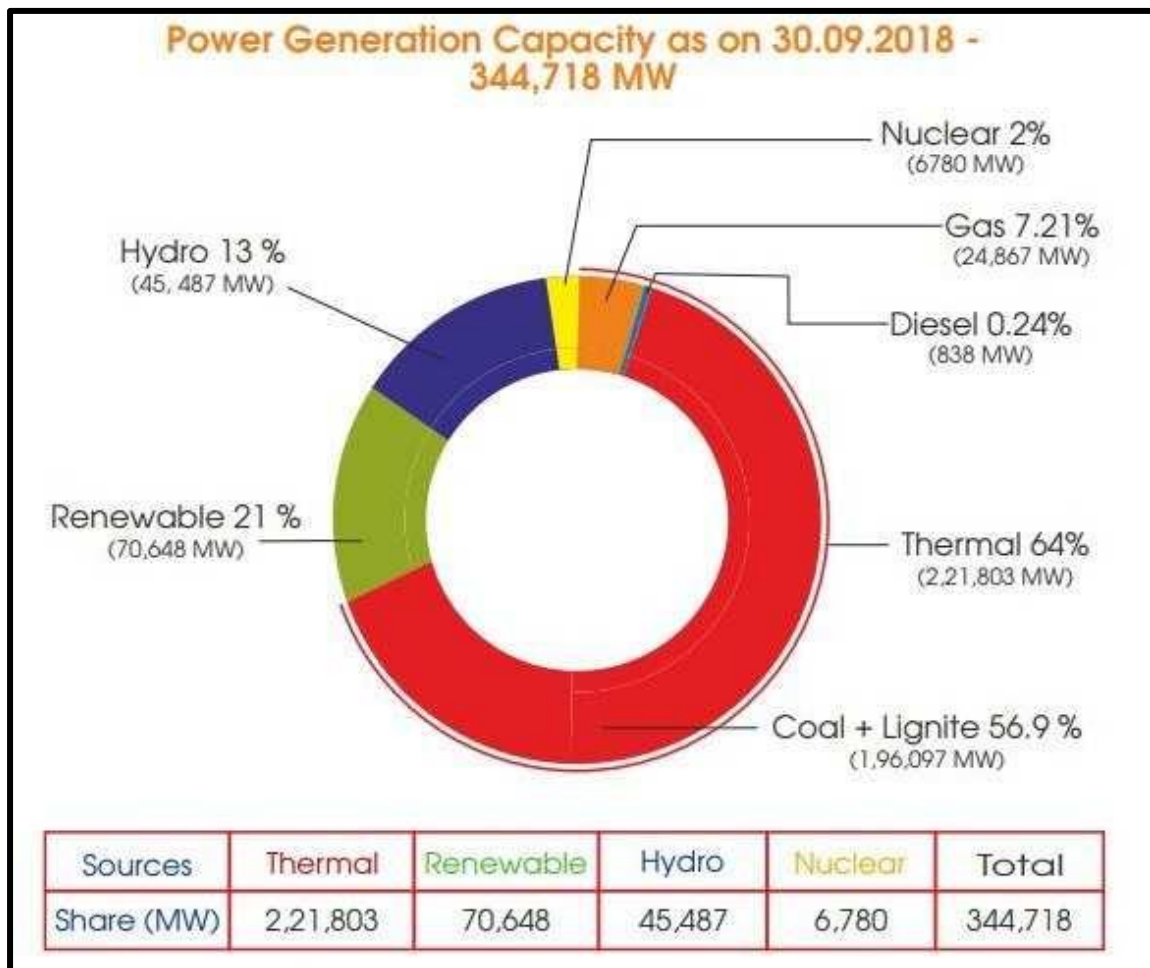
- 3. Joint implementation– a complicated country “A” AND a complicated country “B” might participate in an emission-reduction project and count the ensuing emission units towards meeting its metropolis target.

What is Article six of Paris agreement?

- Article six of the Paris Agreement introduces provisions for victimisation international carbon markets to facilitate fulfilment of across the nation Determined Contributions (NDCs) by countries.
- Article six.2 provides AN accounting framework for international cooperation and permits for the international transfer of carbon credits between countries.
- Article six.4 establishes a central world organization mechanism to trade credits from emissions reductions generated through specific comes.
- Article six.8 establishes a piece program for non-market approaches, like applying taxes to discourage emissions.

Topic 2. POWER GENERATION IN INDIA

Importance for Prelims: Economy



Govt to cut coal-based power share to 32% from 52% by 2030 Status of Power generation in India Need for such move:

- The move is in line with the government's COP26 pledge of achieving 500 gigawatts (GW) of installed capacity based on nonfossil fuel by 2030.
- This is in addition to its aim of increasing the share of renewable energy (RE) sources in power generation to 50 per cent during the same period.
- Costs of renewable power have reduced considerably and the lowest discovered tariff for solar power has been ₹1.99 per unit.
- Highly dependent on import for high grade coal Low productivity due to use of unscientific method

Topic 3. UN BIODIVERSITY NEGOTIATIONS IN GENEVA

Importance for Prelims: Environment

A chair of the U.N. diversity negotiations afoot in Svizzera expects agreement on a key target on raising protected areas, adding he saw support from the talks' presidency, China, for the primary time.

- **Background:** many negotiators arrived within the Swiss town of Geneva for final U.N. talks on associate formidable written agreement that aims to halt and reverse the loss of habitats for species previous a summit in China (Kunming) later this year.
- At the centre of the talks may be a decision by the world organization for countries to guard and conserve half-hour of their territory by 2030 – a target referred to as “30 by 30”.
- Negotiators square measure attending to increase funding for protected areas additionally as reforms to agriculture subsidies that are seen as a serious reason for diversity loss. in an exceedingly previous agreement, Strategic set up for diversity 2011-2020, signed in Aichi, Japan, in 2010, governments united on twenty targets to do to slow diversity loss and defend habitats by 2020.
- Strategic set up for diversity 2011-2020 “Strategic set up for diversity 2011-2020”, give a group of twenty formidable nevertheless doable targets (divided into five sections: A to E), jointly referred to as the Aichi Targets for diversity.
- The Aichi diversity Targets are: one.
 1. **Strategic Goal A:** Address the underlying causes of diversity loss by mainstreaming diversity across government and society
 2. **Strategic Goal B:** scale back the direct pressures on diversity and promote property use.
 3. **Strategic Goal C:** to boost the standing of diversity by safeguarding

ecosystems, species and genetic diversity

4. **Strategic Goal D:** Enhance the advantages to any or all from diversity and system services
5. **Strategic Goal E:** Enhance implementation through democratic coming up with, information management and capability building.

What is biodiversity?

- Biological diversity deals with the degree of nature's selection within the part.
- This selection are often discovered at 3 levels; the genetic variability inside a species, the range of species inside a community, and also the organisation of species in a vicinity into distinctive plant and animal communities constitutes system diversity sorts of biodiversity? Genetic diversity: one species may show high diversity at the genetic level over its spatial arrangement vary.
- The genetic variation shown by the medicative plant Rauwolfia vomitoria growing in numerous mountain range ranges may well be in terms of the efficiency and concentration of the active chemical (reserpine) that the plant produces.
- India has over fifty,000 genetically completely different strains of rice, and 1,000 sorts of mango.
- **Species diversity:** the variety at the species level. for instance, the Western Ghats have bigger amphibian species diversity than the Japanese Ghats.
- **Ecological diversity:** At the system level, India, for example, with its deserts, rain forests, mangroves, coral reefs, wetlands, estuaries, and alpine meadows has bigger system diversity than a European country like Scandinavian country.
- **Patterns of diversity angular distance gradients:** normally, species

diversity decreases as we tend to move aloof from the equator towards the poles.

- Altitude gradient: normally, species diversity decreases as we tend to increase in altitude.

Topic 4. MERCHANDISE EXPORT

Importance for Prelims: Economy

The Economic Survey 2021-22 projected a value growth of 8-8.5 per cent in 2022-23, with exports taking part in a vital role.

- Merchandise export trends Merchandise exports touched associate incomparable high of \$375 billion throughout April-February 2021-22 — quite yearly exports ever registered to date.
- Asian nation targeted to attain a merchandise export of US\$ four hundred billion by 2021-22.
- India's merchandise exports prime five Export Commodities (% share in total export) Commodities 2019- 2020.
- 2020- twenty one 2021-22(ApNov) oil merchandise thirteen.2 8.8 14.9 Pearl, Precious and Semi precious Stones six.6 6.2 6.8 Iron and Steel three.0 4.2 6.0 Drug Formulations, Biologicals five.1 6.5 4.7 Gold and alternative valuable jewelry four.4 2.3 2.8 Note- In two020-21 prime fifth sensible to be exported was electrical machinery and instrumentation with total share in export at 2.8% and prime sixth Organic chemicals with a share of two.6% The USA remained the highest export destination, followed by UAE and China.
- European country has replaced Malaysia and entered into the highest ten leading export destinations of prime ten Export Destinations of India by chance share India has distributed its export destinations within the last twenty five years, nevertheless quite four-hundredth India's exports square measure still accounted for by solely seven countries.
- solely eight merchandise represent quite fifty five per cent of the country's total exports, there's a crucial would like for product diversification.
- India, has been the most important package commerce country (WTO

report 2021).

- Impact of country war-India doesn't have vital merchandise trade with Russia or country, however, exports of prescription drugs, telecommunication instruments, tea, coffee, marine merchandise, etc square measure probably to be hit.
- The supplying price in Asian nation (14 % of GDP) is more than that of developed countries (8-10 % of GDP) (LEADS 2021 Report) Lack of diversification Major Schemes & Initiatives to spice up exports Remission of Duties and Taxes on Exported merchandise (RoDTEP)– supported the globally accepted principle that taxes and duties mustn't be exported, this theme is associate improvement over Merchandise Exports from Asian nation theme (MEIS).
- This new theme reimburses presently un-refunded Central, State, and native taxes and duties incurred within the method of manufacture and distribution of exported merchandise and thereby provides
- A level taking part in field to domestic business abroad.
- Major parts of taxes lined square measure electricity duty, excise tax (VAT) on fuels utilized in transportation/ distribution, mandi tax, stamp duty, etc.
- Developing District as Export Hub-the focus is to form districts active stakeholders within the promotion of exports of goods/services produced/ factory-made within the district.
- District Export Promotion Committees (DEPCs) are started in every district.
- Merchandise with export potential (including agricultural, geographical indication (GI) & toy clusters) are known altogether 739 districts across the country. Production-Linked Incentive (PLI) scheme– for fourteen key sectors ranging from 2021-22.

- The theme provides incentives to corporations on progressive sales for merchandise factory-made in domestic units, that is anticipated to form minimum production of over US\$ five hundred billion in five years.
- vehicles and motorcar parts, pharmaceutical medicine, telecommunication & networking merchandise, electronic/ technology merchandise, etc square measure a number of the sectors lined beneath the PLI theme.
- Electronic Platform for advantageous Certificate of Origin (CoO)-In read of the COVID-19 crisis, on-boarding of FTAs/ advantageous trade agreements (PTAs) was quickly done to permit electronic supplying to avoid physical movement.
- Infusion of capital in EXIM Bank credit Guarantee Corporation of Asian nation Ltd. (ECGC) -provides insurance cowl to banks against risks in credit disposition to the bourgeois borrowers.
- Export Promotion Capital merchandise (EPCG) Scheme-In order to extend procurance of capital merchandise from endemic makers beneath the EPCG theme, the govt has reduced specific export obligations from ninety per cent to seventy five % of the traditional export obligation The export promotion schemes like Trade Infrastructure for Export theme (TIES), Market Access Initiatives (MAI), Special Economic Zone (SEZ) theme, Emergency Credit Line Guarantee theme (ECLGS) and Advance Authorization theme still give support to trade infrastructure and selling.
- The Union Budget has increased cost by thirty five per cent to crowd-in non-public investment, to change a virtuous cycle of investment for developing integrated infrastructure.
- One Station-One Product- can complement the initiative of developing 'Districts as Export Hubs' and support the govt efforts in diversifying the merchandise basket of Indian exports.

- Emergency Credit connected Guarantee theme (ECLGGS) up to March 2023 and infusion of funds into Credit Guarantee Trust for small and tiny Enterprises (CGTMSE) theme can profit the MSME sector.
- Sanctionative associate economical supplying eco-system to spice up exports PM Gati Sakti National Master Plan-aims to produce multimodal property to numerous economic zones and integrate the infrastructure linkages holistically for seamless movement of individuals, merchandise & services to boost supplying potency.
- Others-introduction of FASTag, Turant Customs, necessary RFID (Radio Frequency Identification) tagging in the least EXIM certain containers, E-San chit, Indian Customs Enquiry for Trade help and information (ICETRAK), ICEDASH (Indian Customs EDI Dashboard), Secured supplying Document Exchange (SLDE), Import Clearance System, GHG Calculator etc.
- So as to ease maritime trade, efforts square measure being undertaken on development of portspecific master plans and a coordination mechanism for implementation of identical, upgradation of choose Land Customs Stations (LCS) to Integrated Check Posts (ICPs), promoting trade storage Zones, etc.
- Merchandise export accounting of the balance of payments shows export and import of visibles (also known as merchandise or merchandise – represent trade balance) and invisibles (also known as non-merchandise).
- Invisibles embrace services, transfers and financial gain.
- The balance of exports and imports of products is spoken because the balance of trade.
- Balance of trade could be aa part of ‘Current Account Balance’.
- A accounting deficit happens once the full price of products and services a rustic imports exceeds the full price of products and services it exports.

Topic 5. SAVING BANKS FROM A CYGNUS ATRATUS

Importance for Prelims: Economy

Government-provided recapitalisation packages to save lots of banks from a Cygnus atratus.

Cygnus atratus event?

- Nassim St. Nicholas Taleb, a former Wall Street merchandiser, in his book 'The Black Swan: The Impact of the extremely Improbable' developed the Cygnus atratus theory.
- A Cygnus atratus is haphazard event that's on the far side what's usually expected of a state of affairs and has probably severe consequences.
- Cygnus atratus events area unit characterised by their extreme rarity, severe impact, and therefore the widespread insistence they were obvious in savvy.
- Is thus rare that even the likelihood that it'd occur is unknown features a ruinous impact once it will occur.
- Is explained in savvy as if it were really foreseeable There aren't any limitations within the approach a Cygnus atratus event will surface.
- It may well be something from a natural disaster to a war, a monetary crash or the occurrence of a scourge.
- Trade-offs of bank recapitalisation Recapitalisation of Banks is injecting extra capital into state-owned banks to bring them up to capital adequacy standards.
- The govt. injects capital into banks that area unit short on money employing a style of instruments.
- In Asian country recapitalisation is achieved through three major ways: monetary fund Allocation Market borrowings Issue of recapitalisation bonds Recapitalisation bonds Banks buy bonds issued by the govt..
- Because the government raises its a part of equity possession, the cash

collected by the govt. is employed to hold up banks' capital reserves within the variety of equity capital.

- Banks' cash endowed in recapitalisation bonds is assessed as Associate in Nursing investment that pays interest.
- As a result, the govt. is in a position to stay to its deficit target as a result of no cash is taken directly from its coffers.
- Special Zero-Coupon Recapitalisation Bonds These are unit distinctive bonds issued by the central government to a selected establishment.
- No one else, solely those banks, UN agency area unit selected, will invest in them.
- It's neither marketable nor transferable.
- It is restricted to one bank and is simply valid for a brief time. there's no coupon, it's a zero-coupon, it's issued at par, and it'll be paid at the tip of the term.
- The interest that Associate in Nursing capitalist receives on a bond is thought as a coupon. in step with run batted in needs, it's command underneath the bank's Held-To-Maturity (HTM) class.
- HTM securities are unit purchased with the intention of holding them till they mature.
- These are unit product that are unit like recapitalisation bonds however serve constant objective, and that they are unit issued in accordance with run batted in rules.
- The issuance of those special bonds can haven't any impact on the financial deficit whereas conjointly providing the bank with much-needed equity capital.
- Companies could like improved discounted period of time profits
Households is also worse off thanks to lower government expenditure in social sectors: As, government recapitalisation from budget allocation

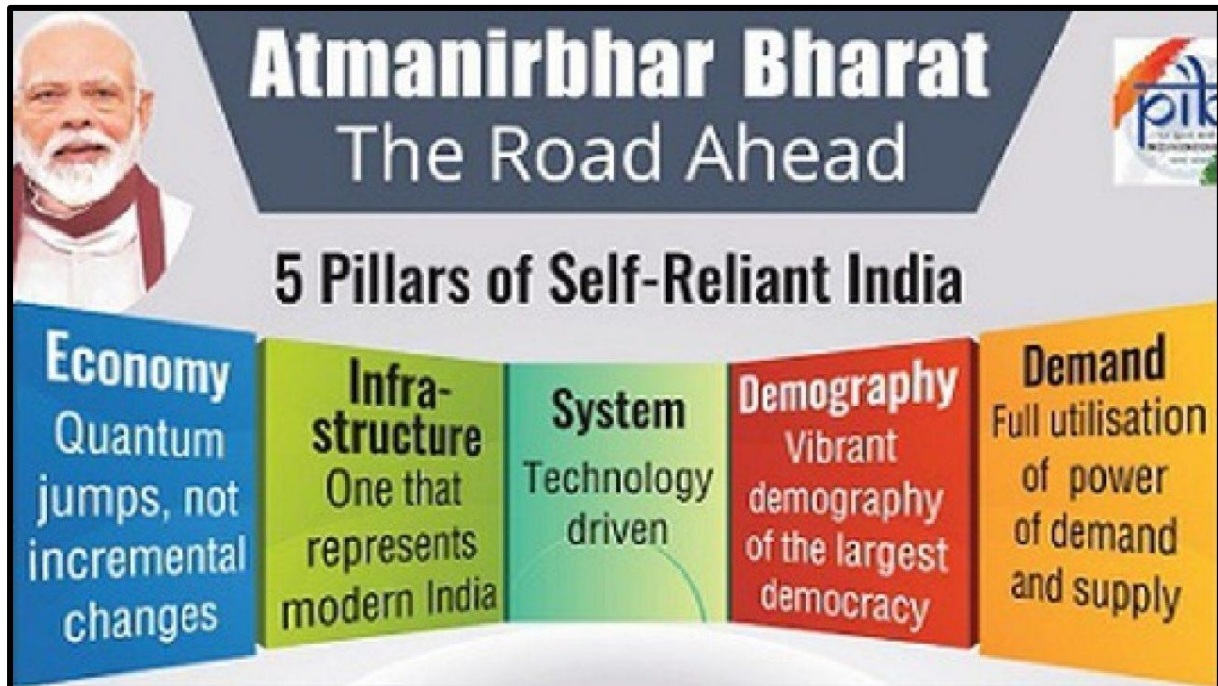
reduces funds out there for social defrayment directly, whereas issuance recapitalisation bonds cut back social defrayment indirectly through interest defrayment and situation out personal investment.

A way to create it a lot of effective?

- Banks' recapitalisation may well be simplest once followed with measures which will increase financial policy transmission, so not cut back households and investment demands versatile deposit disposal rates. Linking repo rate with deposit rate will address the difficulty and a few banks are unit presently moving towards this technique.
- High dependency on bank deposits for disposal has resulted in interest-rate viscosities.
- Banks conjointly ought to scrutinize different sources to fund disposal like provision of debentures/commercial papers and borrowings from the capital market.
- Banks will give way to a variable rate structure on long term deposits.
- To strengthen financial transmission, the govt. has to proactively peg the tiny savings rate with the G-sec bond yields.
- The quality resolutions are unit expected to strengthen bank balance sheets and improve banks' disposition amendment|to vary|to alter} their disposal rates in bicycle with the change within the policy rates.
- Quicker implementation of linking interest rates underneath external benchmarks a minimum of once in 3 months from the sooner apply of resetting interest rates once in an exceedingly year underneath MCLR can greatly facilitate in transmission of the RBI's financial policy.
- Less dependency on deposit interest financial gain for disposal Demand revival policies (via tax cuts or financial growth through Associate in Nursing interest easing cycle) with acceptable Associate in Nursing label supply-side reform measures to realize an optimum policy combine.

Topic 6. ATMANIRBHAR BHARAT- OPEN AND CLOSED ECONOMY

Importance for Prelims: Economy



India isn't favouring a closed economy by promoting AtmaNirbhar mission, and remains terribly deeply committed to bigger integration with world flows and also the regional networks per the NITI Ayog.

- Open and shut Economy associate degree economy is split as associate degree open economy and closed economy supported the free movement of labour and capital with different countries within the world.
- A thereforeciety is assessed as having a closed or open economy supported the subsequent factors:
- **Output Market:** associate degree economy will manage and trade commodities and services with different countries or do so on its own.
- This broadens preferences by permitting customers and makers to settle on between domestic and foreign commodities.
- **money Market:** associate degree economy will oftentimes purchase money assets from different countries or try to supply enough to fulfill its desires.

- **Labor Market:** firms will opt for wherever to find their producing plants, and staff will opt for wherever to figure.
- There square measure many immigration laws that limit the movement of labour between countries.
- Associate degree open economy is one that trades commodities, services in addition as money assets with different countries.
- It purchases shares, debentures, bonds, and different securities from foreign countries and sells securities to foreign countries.
- It borrows cash from and lends cash to different countries.
- It's ready to send and receive gifts and remittances from foreigners.
- Traditional residents of associate degree open economy square measure unengaged to move or add the domestic territory of different economies.
- In associate degree open economy, Gross Domestic Product and Gross National Product aren't a similar things for these reasons.
- Gross national product= value + web issue financial gain from abroad
GDP= GNP – web issue financial gain from abroad A closed economy is totally self-sufficing, which implies that no imports enter and no exports leave the country.
- It doesn't export merchandise or services to different countries and doesn't import merchandise or services from different countries.
- It neither buys nor sells shares, debentures, bonds, and different money instruments to foreign countries, creating it a closed economy.
- It doesn't borrow from or lend to different countries.
- It accepts no gifts from foreigners and sends no gifts to foreigners.
- Traditional residents of a closed economy square measure unable to travel different countries to figure in their home country.
- No foreigner is permissible to figure on a closed economy's domestic

territory.

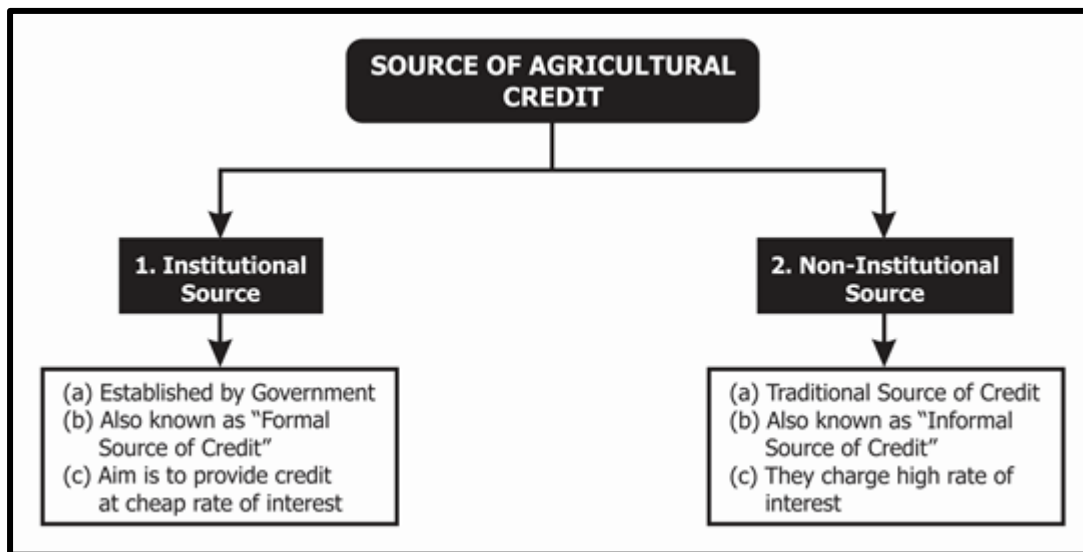
- In a very closed economy, Gross Domestic Product and Gross National Product square measure a similar for the explanations expressed on top of. 'Atmanirbhar (or independent India Mission)' with associate degree economic input package — value Rs twenty large integer crores aimed towards achieving the mission.
- The declared economic package is 100% of India's Gross Domestic Product (GDP) in 2019-20.
- The independent India Mission aims towards lowering import dependence by centering on substitution whereas up safety compliance and quality merchandise to realize world market share.
- The autonomy neither signifies any exclusionary or isolationist methods however involves creation of a assistance to the entire world.
- The Mission is predicated on 5 pillars particularly, Economy Infrastructure System spirited sociology Demand the govt.
- Recognised that the covid elicited lockdowns and quarantines discontinuous economic activity.
- Therefore, it quickly place in situ economic safety nets along side many easement policies principally centered on worth addition and additional integration of the domestic economy with world provide chains.
- Atmanirbhar Bharat was launched in varied trenches: the primary share of Atmanirbhar Bharat Abhiyan Emergency W/C Facility for Businesses, incl MSMEs Subordinate Debt for Stressed MSMEs Fund for Funds for MSMEs EPF Support for Business & staff Reduction in EPF rates Special liquidity theme for NBFC/HFC/MFIs Partial Credit Guarantee theme for two.0 for Liabilities of NBFCs/MFIs Liquidity Injection for DISCOMs Reduction in TDS/TCS rates
- The second share of Atmanirbhar Bharat Abhiyan Free grain provide to

Migrant staff for two Months Interest Subvention of gesture Shishu Loans
Special Credit Facility to Street Vendors Housing CLSS-MIG extra
Emergency assets through NABARD extra Credit Through KCC

- The third share of Atmanirbhar Bharat Abhiyan Food small Enterprises
Pradhan Mantri Matsya Sampada Yojana high to
- **TOTAL:** Operation Greens Agri Infrastructure Fund husbandry
Infrastructure Development Fund Promotion of floriculture
apiculture
- Initiative different major choices taken underneath Atmanirbhar Bharat
Abhiyan autonomy in defence production Ban the import of many
weapons and a separate budget provisioning for domestic capital
acquisition to assist cut back the large defence import bill.
- Corporatize the Ordnance mill Board to enhance autonomy,
responsibility, and potency.
- Exaggerated FDI limit within the defence producing underneath the
automated route from forty nine p.c to seventy four p.c. craft and region
sector Restrictions on the employment of the Indian airspace are
mitigated so civilian flying becomes a lot of economical.
- Development of best airports through surgery, The tax regime for craft
Maintenance, Repair, and Overhaul system is rationalized and also the
convergence between the defence sector and also the civil MROs are
established to make economies of scale. Boosting personal participation
in area activities.
- The personal sector are allowed to use ISRO facilities and different
relevant assets to enhance their capacities.

Topic 7. AGRICULTURAL CREDIT

Importance for Prelims: Economy



Farmers seeking loans from personal cash lenders in geographical region hyperbolic by twenty seventh and therefore the loan quantity raised by forty two you bored with 2021.

- Majority of those farmers seeking loans are tiny and marginal farmers.
- Their dependence on personal cash lenders increased because of Covid-led lockdowns, closure of markets, and unseasonal rains.
- However, authorised cash lenders is simply the tip of the iceberg and an enormous range of illegal personal cash lenders have tightened the noose round the necks of farmers in geographical region.
- With the exception of agriculture and non-agricultural credit societies, the State permits authorised moneylenders to produce loans to people.
- For this purpose, licenses are issued by the workplace of the Commissioner for Co-operation and Registrar Co-operative Societies.
- In 2020, the quantity of license holder cash lenders was twelve,993 whereas in 2021 the quantity was 12,993.

Why Farmers get loans?

- Consistent with NSS seventy seven spherical data- true Assessment of

Agricultural Households and Land and Holdings of Households in Rural India, 2019, tiny landholding households avail loans for: medical expenditure for hospitalization, doctor's fees, purchase of medicines, medical diagnostic tests like scans, X-rays, ECG, EEG, and different pathological tests.

- Consumption expenditures as well as the acquisition of sturdy unit assets, wear to be used of the unit, etc. failure and losses because of unseasonal rains have intercalary to their issues.
- Evolution of Agricultural Finance in India and Policy Milestones The institutional framework of agricultural finance was formed by the overarching demands of the state.
- The evolution of agricultural credit policies and milestones is loosely categorized into 3 distinctive phases.
- **Section one (1951 – 1969)** 1.the govt of India initiated the primary five-year arrange in 1951 with the thrust on developing the first sector.
- The National Credit Council in a very meeting command in July 1968 emphatic that industrial banks ought to increase their involvement within the finance of priority sectors, viz., agriculture and small-scale industries, sectors deemed as 'national priority'.
- In 1969, once the primary section of nationalisation of banks came about, there have been 6955 public sector bank branches and therefore the average population per branch workplace was sixty four,000. to spice up rural development, the banking concern of India had then prescribed 1:3 quantitative relation for gap of branches in urban and rural/semi-urban centres. section a pair of (1970-1990) one.
- The channel for institutional credit to agriculture throughout the primary 20 years of independence was the cooperative sector.
- With the nationalisation of business banks in 1969, the last decade of

Nineteen Seventies marked the entry of business banks into agricultural credit. this era saw the introduction of the bank theme and regulative prescription of Priority Sector disposal – 2 landmark development policies that haven't solely survived until date however have conjointly served because the fuel for channelling agricultural credit and rural development.

- The Regional Rural Bank Act, 1976 was enacted to supply adequate banking and credit facility for agriculture and alternative rural sectors.
- The full service bank for Agriculture and Rural Development (NABARD) came into existence in 1982, with the enactment of NABARD Act 1981, to market agriculture and rural development.
- NABARD, in 1992 introduced the help cluster (SHG) model to additional money inclusion of the excluded segments.
- In 1989, the banking company introduced the topographic point approach (SAA) and Annual Credit arrange (ACP) system as tools for reaching dead set the agricultural areas. part three (1991 onwards) one.
- The economic reforms of the Nineteen Nineties, started with the implementation of the primary Narasimham Committee Report of 1991, emphasising money soundness and operational potency of the money sector – as well as that of rural money establishments.
- The banking company of Asian nation step by step deregulated the rate of interest regime to help improvement within the operational potency of banks.
- The primary major nationwide farm loan relinquishment was declared in 1990 and therefore the price to the national cash in hand was around ₹100 billion.
- Consistent to the 1995 Union Budget announcement, GoI established the agricultural Infrastructure Development Fund (RIDF) with NABARD.

- RIDF was chiefly meant for funding of rural infrastructure comes that successively were imagined to deepen the credit absorption capability during a state by giving loans to state governments and stateowned firms.
- Regular industrial banks contribute to the corpus of the fund to the extent of their deficit in achieving the priority sector loaning target.
- Throughout 1992-93, NABARD started the test on SHG-Bank Linkage programme – a partnership model involving SHGs, banks and NGOs.
- Within the initial years, the theme progressed slowly however picked up step by step.
- The Kisanmastercard (KCC) was introduced as a money product in 1998 to supply problem free credit to farmers.
- The Union Government introduced the bottom Level Credit (GLC) policy in year 2003-04.
- Below this policy, GoI announces GLC targets for agriculture and allied sector within the Union budget once a year that banks square measure needed to attain throughout the year.
- These targets square measure set region-wise, agency-wise (SCBs, RRBs & Cooperative banks) and loan class wise (crop and term loan).
- The year 2006 saw a bunch of developments.
- Consistent to the budget announcement for 2006-07, the Union Government introduced the interest subvention theme (ISS) for brief term crop loans to alter farmers to avail farm credit at reduced interest rates.
- The Business Correspondents (BCs) and Business Facilitators (BFs) were extended for the primary time by the money of Asian nation to additional the reason behind financial inclusion.
- NABARD introduced the Joint Liability cluster (JLG) model, associate degree extension of the sooner SHG model for reaching dead set tenant farmers and share-croppers with access to credit.

- Agricultural Debt relinquishment and Debt Relief theme (ADWDRS), 2008 declared by the Union Government concerned waiving institutional debt for tiny farmers and a one-time settlement chance with twenty five per cent rebate to alternative farmers.
- This large write-off of agricultural loans involving ₹525.16 billion was envisaged to supply relief to the persistent downside of farmers' liability and alleviate the money pressure baby-faced by the farmers.
- In 2009-10, the govt. introduced the prompt compensation incentive (PRI) of three per cent below the ISS to bring down the effective rate of interest to four per cent to those farmers WHO repaid their loans on or before the day of the month to drill compensation habits.
- In July 2012, the Priority Sector loaning (PSL) tips were revised by the banking company to widen the eligible activities. once more in Apr 2015, the rules were revamped supported the recommendations of the inner working party (IWG).
- The salient options of the revamped PSL tips with reference to agricultural sector are: one.
- The excellence between direct and indirect agricultural credit was distributed with.
- A sub-target of eight per cent of ANBC or Credit Equivalent quantity of Off record Exposure, whichever is higher, was prescribed for tiny and marginal farmers.
- Focus shifted from 'credit in agriculture' to 'credit for agriculture'.

Topic 8. INFUSION OF TECHNOLOGIES IN AGRICULTURAL SECTOR

Importance for Prelims: Economy

Govt to produce monetary help for drone purchase by custom hiring centres.

- Steps were taken by the Centre to support State Govts via varied schemes together with the employment of drones in agriculture and build drone technology reasonable to farmers and alternative stakeholders of this sector.
- Seventy fifth grants for FPOs square measure provided for purchase of drone for its demonstration on the farmers' fields.
- Monetary help at four-hundredth of the fundamental price of drone and its attachments or Rs. 4 lakhs, whichever is a smaller amount, is additionally provided for drone purchase by existing and new Custom Hiring Centres (CHCs) underneath cooperative society of farmers, FPOs and rural entrepreneurs.
- This can enhance agricultural services through drone application. Moreover, agricultural graduates establishing CHCs square measure eligible to receive monetary help at five hundredth of the price of the drone up to a most Rs. 5 lakhs.
- Besides, the government is implementing the National e-Governance arrange in Agriculture (NeGP-A).
- **Custom Hiring Centres (CHCs) Advantages:** Provides access to tiny and marginal farmers to expensive farm machinery Facilitates timeliness in farm operations and economical use of inputs Promotes adoption of climate resilient practices and technologies by farmers attributable to handiness of applicable machines at cheap hiring charges Reduction in price of cultivation Provides work opportunities to competent labour and little artisans

Topic 9. WAR DIODE ENERGY JOLT WILL LEAD THE ECONOMY TO RECESSION

Importance for Prelims: Economy

The energy market shock following Russia's invasion of country might tip the globe into Associate in Nursing economic recession, particularly if the war drags on.

- Once the economy contracts for 2 quarters in a very row (or six months), this alteration is assessed as a recession.
- The term denotes a trade cycle contraction, once there's a general decline in economic activity and happens once there's a widespread drop by disbursal (an adverse demand shock).
- Once a country's economy is healthy, it grows over time and its gross domestic product or the worth of the products and services it produces — will increase.
- The last time variety of states entered a recessive section was once the worldwide monetary crisis stony-broke in 2007.
- A recession will become a depression if it lasts long enough, like within the late Nineteen Twenties.

Topic 10. MISLEADING ADS AND CCPA JURISDICTION

Importance for Prelims: Polity

CONSUMER PROTECTION ACT 1986	PROVISIONS	CONSUMER PROTECTION ACT 2019
No separate regulator	Regulator	Central Consumer Protection Authority (CCPA) to be formed
Complaint could be filed in a consumer court where the seller's (defendant) office is located	Consumer court	Complaint can be filed in a consumer court where the complainant resides or works
No provision. Consumer could approach a civil court but not consumer court	Product liability	Consumer can seek compensation for harm caused by a product or service
District: up to ₹20 lakh State: ₹20 lakh to ₹1 cr National: above ₹1 cr	Pecuniary jurisdiction	District: up to ₹1 cr State: ₹1 cr to ₹10 cr National: Above ₹10 cr
No provision	E-commerce	All rules of direct selling extended to e-commerce
No legal provision	Mediation cells	BCCL Court can refer settlement through mediation

The Central consumer Protection Authority (CCPA) has ordered termination of undeniable deceptive advertisements of Sensodyne dentifrice within seven days, and obligatory a penalty of ₹10 hundred thousand on the manufacturer.

- The Consumer protection Act of 2019 Indian Parliament, in August 2019, passed the landmark Consumer Protection Bill, 2019.
- COPRA is regarded as the 'Magna Carta' in the field of consumer protection.

The Eight Basic Consumer Rights:

- The Right to Basic Needs,
- The Right to Safety,
- The Right to Information,

- The Right to Choose,
- The Right to Representation,
- The Right to Redress,
- The Right to Consumer Education,
- The Right to a Healthy Environment.

Highlights of the New Act: E-Commerce Transactions:

- The New Act has widened the definition of ‘consumer’
- The definition currently includes anyone who buys any stocks, whether or not through offline or on-line transactions, electronic means that, teleshopping, direct marketing or multi-level promoting.

E-Filing of complaints:

- The New Act contains enabling provisions for consumers to file complaints electronically and for hearing and/or examining parties through video-conferencing.

Unfair Trade Practices:

- The New Act introduces a specific broad definition of Unfair Trade Practices, which also includes sharing of personal information given by the consumer in confidence, unless such disclosure is made in accordance with the provisions of any other law.

Misleading Advertisement:

- The Act defines “misleading advertisement” in linked to any product or service, as “an advertizing, which— (i) incorrectly describes such product or service; or (ii) provides a false guarantee to, or is probably going to mislead the customers as to the character, substance, amount or quality of such product or service; or (iii) conveys an specific or implicit portrayal which, if created by the manufacturer or supplier or service contributor composed, would represent an unfair trade practice; or (iv) deliberately conceals vital information”.

Penalties for Misleading Advertisement:

- The CCPA might impose a penalty of up to INR 1,000,000 on a manufacturer or an endorser, for a false or deceptive advertising.
- In case of a subsequent offence, the fine may extend to INR 5,000,000 and imprisonment of up to five years.
- The CCPA also can disallow the endorser of a deceptive advertisement from endorsing that specific product or service for a time of up to at least one year.
- For each subsequent offence, the amount of prohibition might increased upto 3 years.
- Central consumer Protection Authority (CCPA) the consumer Protection Act, 2019 establishes the Central consumer Protection Authority (CCPA) whose primary objective are to encourage, shield and enforce the rights of customers.
- It will be empowered to conduct investigations into violation of consumer rights and institute complaints / prosecution, order recall of unsafe goods and services, order discontinuation of unfair trade practices and deceptive advertisements, impose penalties on manufacturers/endorsers/publishers of deceptive advertisements.
- It will be headquartered in the National Capital Region of Delhi but the central government may set up regional offices in other parts of the country.
- **Composition:** It will have a Chief Commissioner as head, and solely 2 different commissioners as members — one among whom deal with matters concerning stocks the other the opposite can look at cases concerning services.
- The CCPA can have AN Investigation Wing that may be headed by a Director General. ‘

- District Collectors too, can have the ability to research complaints of violations of consumer rights, unfair trade practices, and false or deceptive advertisements.
- The CCPA can have AN investigation wing, headed by a Director General, which can conduct inquiry or investigation into consumer law violations.
- **Powers and Functions:** Inquire or investigate into matters concerning violations of consumer rights or unfair trade practices suomotu, or on a grievance received, or on a direction from the central government.
- Recall stocks or withdrawal of services that are “dangerous, risky or unsafe.
- Pass an order for refund the costs or services therefore recalled to purchasers of such goods or services; discontinuance of practices that are unfair and harmful to consumer’s interest”.
- Impose a penalty up to Rs ten hundred thousand, with imprisonment up to 2 years, on the manufacturer or endorser of false and deceptive advertisements.
- The penalty might go up to Rs fifty hundred thousand, with imprisonment up to 5 years, for each future offence committed by an equivalent manufacturer or endorser.
- Ban the endorser of a false or deceptive advert from creating endorsement of any merchandise or services within the future, for a amount which will touch one year.
- The ban might extend up to 3 years in each subsequent violation of the Act.
- File complaints of violation of consumer rights or unfair trade practices before the District consumer Disputes Redressal Commission, State consumer Disputes Redressal Commission, and the National consumer

Disputes Redressal Commission.

- Consumer Disputes Redressal Commissions (CDRCs) National Consumer Disputes Redressal Commission (NCDRC): A national level court works for the whole country and deals compensation claimed exceeds rupees one core.
- The National Commission is that the Apex body of consumer Courts; it's conjointly the highest appeals court in the hierarchy.
- The National Consumer Disputes redressal Commission (NCDRC), is a quasijudicial commission in India which was set up in 1988 under the Consumer Protection Act of 1986.
- Its head office is in New Delhi.
- The commission is headed by a sitting or retired magistrate of the Supreme Court of India.

State Consumer Disputes Redressal Commission (SCDRC):

- A state level court works at the state level with cases wherever compensation claimed is higher than twenty lakhs but up to 1 core.
- The State Commission conjointly has the appellant jurisdiction over the District Forum.

District Consumer Disputes Redressal Forum (DCDRF):

- A district level court works at the district level with cases wherever the compensation claimed is up to twenty lakhs consumers will file complaints with the CDRCs relating to any of the subsequent.
- Defective goods or services Overcharging or deceptive charging on goods and services Any unfair or restrictive trade practices Offering services or sale of goods which can be hazardous to life or not safe As per the new act, all the laws that apply for direct selling would also be applicable for E-Commerce.
- Consumers will file complaints from anyplace and they don't obligated to

hire legal practitioner to represent their cases.

- For mediation, there'll be strict timeline decided within the rules. On deceptive advertisements there's provision for jail term and fine for producer.
- For the first time there will be an exclusive law dealing with Product Liability.
- A manufacturer or product service supplier or product merchandiser can currently be accountable to repay for injury or harm caused by defective product or deficiency in services.

Topic 11. FOOD CORPORATION OF INDIA

Importance for Prelims: Economy



Not a single grain of paddy has been damaged while being stored by the Food Corporation of India (FCI) since 2004, the Centre told the Lok Sabha on Wednesday.

About FCI:

- FCI is a statutory body set up in 1965 under the Food Corporations Act 1964.
- It was established against the scenery of major shortage of grains, particularly wheat.
- FCI has compete a major role in India's success in modifying the crisis management oriented food security into a stable security system.
- Functions of FCI To procure foodgrains To Maintain operational stock and buffer stock for food security Allocation of grains to state Selling grains to state at 'Central Issue Price' Distributing and transporting grains to state
- **Procurement Procedure:**The Central Government extends subsidy for

acquisition of wheat, paddy and coarse grains through the FCI and State Agencies.

- All the food grains observed to the prescribed specifications are procured by acquisition procural agencies at the Minimum Support worth (MSP) and incentive bonus declared, if any.
- Below the decentralised procural scheme (DCP), introduced in 1997-98, food grains are procured and distributed by the State Governments themselves
- The selected States procure, store and issue food grains below Targeted Public Distribution System (TPDS) and different welfare schemes of the govt..

For what objective FCI maintains stock of food grains?

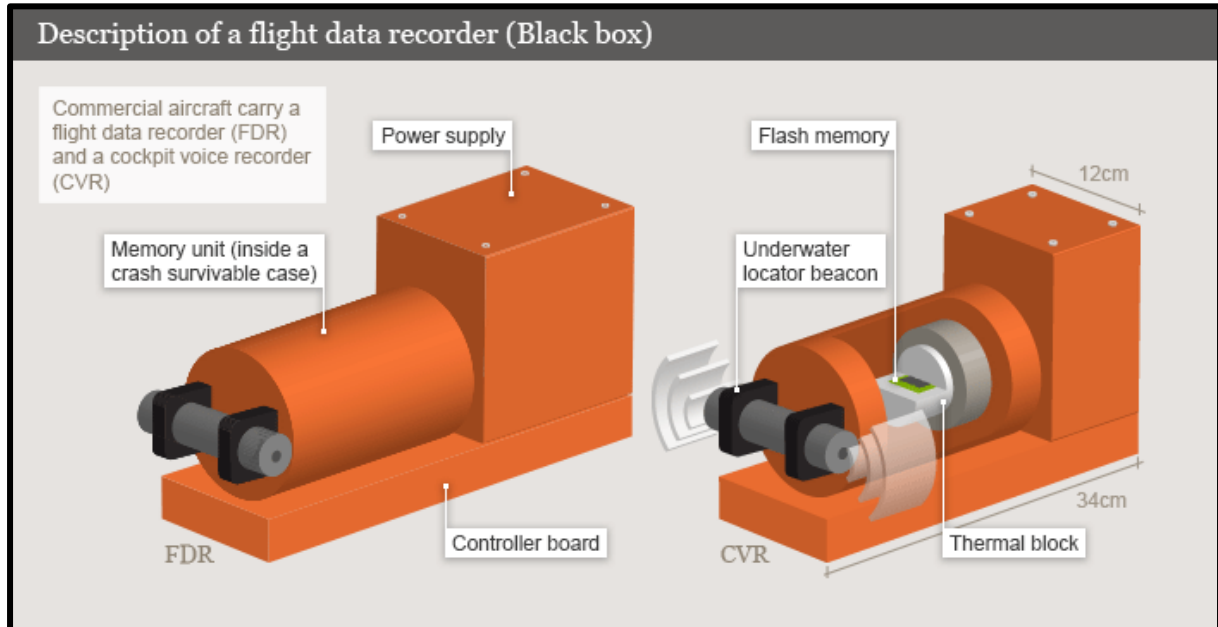
- All countries maintain some backup to tackle any potential food crises because of drought or the other natural catastrophe.
- Every now and then there will be violent fluctuations in costs of vital commodities because of macroeconomic imbalances for e.g. because of short term value rises in production will before long shift from essential food crops to cash crops.
- Within the aftermath of LPG reforms, India stuck to its policy of maintaining sufficient physical stocks, in spite of pressure from developed countries in forums like WTO.
- Another major reason for stocking of food is to serve the world's largest public distribution system.
- **Operational Stock:** Operational Stocks are defined as the minimum quantities required for running the TPDS/NFSA and 'Other Welfare Schemes' until quantities procured from the new crop.
- As already announced, passage and implementation of FSA is predicted to boost acquisition upper side, that successively can raise the

requirement for stock maintenance.

- Last however not least, FCI below an open concluded policy has no choice however purchase whatever provided to that by farmers.
- These are created out of current year production and are meant to be consumed in following year.
- While maintaining Operational stocks 'intra-year variations' are taken care of and just in case of buffer stocks, 'inter year' variations are examined.
- Buffer stock FCI maintains stocks of grains in way over what's required for meeting operational desires, and these stocks are known as strategic stocks. Buffer stocks are a part of strategic stock.
- The government fixes the buffer stock norms, prescribing the minimum quantities of food grains (wheat and rice) to be maintained within the central pool at the start of every quarter.

Topic 12. WHAT ARE BLACK BOXES, AND WHY ARE THEY IMPORTANT IN A CRASH INVESTIGATION?

Importance for Prelims: Science & Technology



China's aviation authority announced on Wednesday (March 23) that a flight recorder, commonly known as "black box", "from China Eastern MU5735 was found", bringing the first hope of understanding what caused the country's worst airline disaster in years.

- It is also called flight data recorder or cockpit voice recorder and it stores data about planes.
- They reveal info that results in info regarding the accidents of flight.
- There are 2 completely different flight recorder devices the flight data recorder (FDR) preserves the recent history of the sounds within the cockpit, as well as the oral communication of the pilots. These may be combined into one unit.
- These boxes are of a size of a shoes.
- It is compulsory on every commercial flight or corporate jet, and are mostly on tail of aircraft.
- The flight data recorder (FDR) records additionally 80 differing kinds of

data like altitude, airspeed, flight heading, vertical acceleration, pitch, roll, autopilot status, etc.

- Cockpit voice recorder (CVR) records radio transmissions and different sounds within the cockpit, like conversations between the pilots, and engine noises.

How are they identified?

- Black boxes are a blazing, high-visibility orange in color, especially crews searching for them at a crash site have the most effective probability of finding them.
- It is not certain how they got their nickname, but recorders are today the holy grail that investigators seek in their quest for answers whenever there is an airline accident.
- The use of black boxes dates back to the early Fifties, when, following plane crashes, investigators were unable to reach a conclusive cause for the accidents.
- An Australian scientist named David Warren is commonly attributable with their invention.
- Surviving the crash within the initial days of the black box, a restricted quantity of information were recorded on wire or foil.
- The FDR is located towards the tail end of the aircraft because that is usually where the impact of a crash is the least.

Topic 13.GREEN BOND

Importance for Prelims: Economy

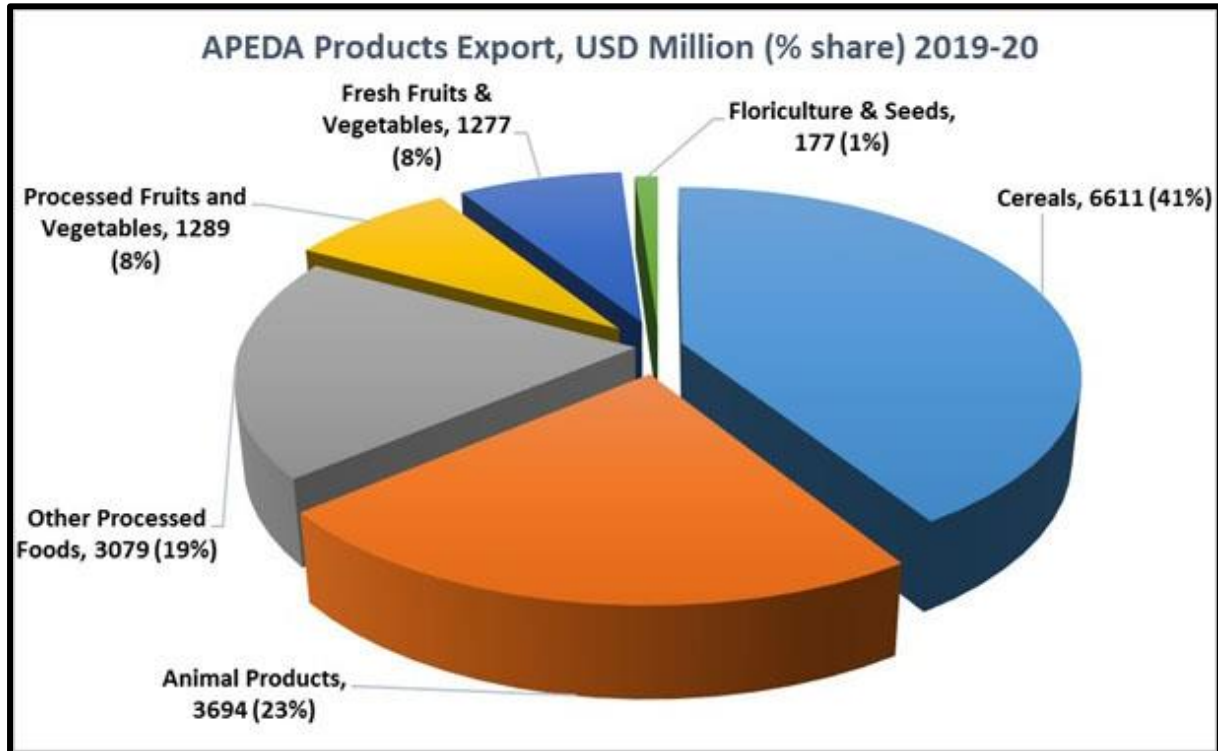


- Recently, the Finance Minister in the Budget 2022 announced that the government proposes to issue sovereign green bonds to mobilise resources for green infrastructure.
- In 2007, green bonds were launched by few development banks like EU Investment Bank and the World Bank.
- In 2013, corporates too started taking part, which led to its overall growth.
- A green bond is a debt instrument with which capital is being raised by firms, countries and multilateral organisations to completely fund projects that have positive environmental or climate benefits and supply investors with fixed income payments.
- These bonds are usually asset-linked and backed by the Granting entity's balance sheet, so they sometimes carry a similar credit rating as their issuers' different debt obligations.
- Green bonds may come with tax incentives to boost their attractiveness to investors.

- India's first green bond was launched by yes Bank limited in 2015 to lift INR 5 billion to boost long-term resources for funding infrastructure projects in renewable and clean energy projects like wind, solar, biomass and hydropower.
- In January 2016, the Securities and Exchange Board (SEBI) of India published its official green bond instructions and necessities for Indian issuers, inserting India amongst a select set of pioneering countries World Health Organization have developed national level guidelines.

Topic 14. NEW EXPORT DESTINATIONS FOR GI AGRICULTURE PRODUCTS

Importance for Prelims: Economics



- The over 100 niche GI labelled products, 49 have got new export markets.
- There are 417 registered GI Products Provide new markets for these GI products that were earlier exported to different destinations.
- Some select native products that square measure of high export potential were shipped to new export destinations.and around 150 of them are agricultural and food Products.
- Agricultural and Processed Food Products Export Development Authority (APEDA) is making a unique initiative to promote regional and state-specific GI products.
- 13 products sourced directly have got exported to new destinations like south korea, UK, US, UAE, Singapore, Bahrain and Japan.

For Example:-

1. Suvarnarekha mangoes (AP) shipped to South Korea for the 1 time.
 2. DahanuGholvadsapota&MarathwadaKesar mango (MH) reached the UK
 3. Jalgaon's Banana (MH) to the UAE.
 4. Nendran Banana (KE) to Singapore.
 5. Shahi Litchi &BhagalpuriZardalu mango (Bihar) to the UK besides 36 other niche local products like Murmura (puffed rice), Moringa, Jamun and Sitabhog also got new export markets.
- Provide new markets for these GI products that were earlier exported to different destinations.
 - Some select native products that square measure of high export potential were shipped to new export destinations.

Non GI Products:-

- Some of the below have additionally been shipped to the new destinations.
- Malli and other traditional flowers Madurai, TamilnaduMakhana, Patna Bihar Apricots,Ladakh Apples, Himachal Pradesh Sitabhog, Fazli Mango, Dragon Fruit &BardhamanMihidana, West Bengal Puffed rice Cuttack, Odisha JaggeryBijnor, UP MarayoorJaggery Idukki, KE Jamun, UP Buffalo Butter (salted) Hathras.

Topic 15.PROTECTION OF MINORITIES

Importance for Prelims: Polity

A group of senior journalists from all over India issued a collective appeal to constitutional organization on Wednesday to step in and discharge their mandate within the wake of “attacks” on India’s religious minorities, especially Muslims.

Who is a minority?

- The term “Minority” isn't defined in the Indian Constitution.
- The Constitution recognises spiritual and linguistic minorities.
- The basic ground for a community to be nominated as a religious minority is the numerical strength of the community.

For example:-

(I)in India, Hindus are the majority community.

(II) As India is a multi-religious country, it becomes vital for the govt to conserve and protect the spiritual minorities of the country.

(III) Section 2, clause (c) of the National Commission of Minorities Act, declares six communities as minority communities.

(IV)They are: 1. Muslims 2. Christians 3. Buddhists 4. Sikhs 5. Jains and 6. Zoroastrians (Parsis) Under this act, the government formed the National Commission for Minorities which consist of Chairperson, a Vice-Chairperson and five Members.

(V) The five Members including the president shall be from amongst the minority communities.

(VI) The commission monitors the operating of the safeguards provided in the Constitution and in laws enacted by Parliament and the State Legislatures.

(VII) It additionally makes recommendations for the effective implementation of safeguards for the protection of the interests of

minorities by the Central Government or the State Governments.

Mechanisms to safeguard minorities in India:

- Constitutional Provisions Role of Judiciary Laws/welfare schemes
International efforts 1. Article 29: It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.
- It grants protection to both religious minorities as well as linguistic minorities.
- The Centre's notification that identifies Muslims, Christians, Sikhs, Buddhists, Parsis and Jains as minorities at the national level is against the judgement of TMA Pai Foundation case, 2002.

The Supreme Court in the TMA Pai Foundation case.

- SeekhoaurKamao: the objective of the scheme is to permit urban and rural livelihoods to boost for inclusive growth by providing ability to the minority communities who do not possess any ability.
- Upgrading Skills and Training in Traditional Arts/Crafts for Development (USTTAD): To conserve traditional arts/crafts of our Country and for building capacity of traditional artisans and Adoption of the "Declaration on the Rights of Persons belonging to National or Ethnic, religious and Linguistic Minorities" by the UN in 1992.
- 2. Article 30: All minorities shall have the right to establish and administer academic institutions of their choice.
- The protection under Article 30 is confined only to minorities (religious or linguistic) and does not extend to any section of citizens (as beneath Article 29).
- Article 350-B: Originally, the Constitution of India did not build any provision with respect to the Special Officer for Linguistic Minorities.

- The 7th Constitutional amendment Act, 1956 inserted Article 350-B in the Constitution.
- It provides for a Special Officer for Linguistic Minorities appointed by the President of India.
- It would be the duty of the Special Officer to research all matters regarding the safeguards provided for linguistic minorities under the Constitution.
- Held that the unit of deciding religious and linguistic minority would be 'State'.
- It also authorised the state government to manage minority educational institutions.
- Craftsmen belonging to minority communities, a scheme particularly USTTAD (Upgrading the skills and training in traditional Arts/Crafts for Development) has been approved.
- **Nai Manzil:** Under the scheme girls from minority communities are being imparted three month skill development training in seven identified sectors relevant to the region.
- These include training in saffron processing, food processing, embroidery, computers IT (both software and hardware), Tourism/hospitality, electronics and plumbing.
- **NaiRoshani:** 'NaiRoshni' for Leadership Development of Minority women with an aim to empower and instill confidence in women by providing information, tools and techniques for interacting with Government systems, banks and intermediaries at all levels.
- **HunarHaat** (Skill Haat): an exhibition of handicrafts, embroidery etc created by the artisans from the Minority Communities at the India International Trade Fair.

Topic 16. G20: PRESIDENT JOE BIDEN WANTS RUSSIA TO BE EXPELLED FROM G20

Importance for Prelims: International Relation



- US President Joe Biden said that he desire Russia out of the G-20.
- He additionally added that it depends on other member countries.
- The G20 is an informal group of nineteen countries and the EU, with representatives of the International monetary fund and the World Bank.
- The G20 membership comprises a mix of the world's largest advanced and emerging economies, representing about two-thirds of the world's population, 85% of global gross domestic product, 80% of global investment and over 75% of global trade.
- G20 Members The members of the G20 are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.

- Spain as a permanent, non-member invitee, also attends leader summits.
- Structure and Functioning of G20.
- The G20 Presidency rotates annually according to a system that ensures a regional balance over time.
- For the selection of presidency, the 19 countries are divided into 5 groups, each having no more than 4 countries.
- The presidency rotates between each group.
- Every year the G20 selects nation from another group to be president.
- India is in group two which also has Russia, South Africa, and Turkey.
- The G20 doesn't have a permanent secretariat or Headquarters.
- Instead, the G20 president is responsible for bringing together the G20 agenda in consultation with other members and in response to developments in the international economy.
- **TROIKA:** per annum when a new country takes on the presidency (in this case Argentina 2018), it works hand in hand with the previous presidency (Germany, 2017) and the next presidency (Japan, 2019) and this is collectively called TROIKA.
- This ensures continuity and consistency of the group's agenda.

Topic 17.FOOD INSECURITY

Importance for Prelims: Governance



- Second round of the Hunger Watch survey (HW-II) Food Insecurity Experience Scale (FIES) is experience-based measures of household or individual food security.
- The FIES Survey Module (FIES-SM) consists of eight questions regarding people's access to adequate food, and can be easily integrated into various types of population surveys. The FIES-SM questions refer to the experiences of the individual respondent or of the respondent's household as a whole.
- The queries focus on self-reported food-related behaviours and experiences related to increasing difficulties in accessing food due to resource constraints.
- Throughout the last twelve months, was there a time when, because of lack of money or other resources:
 1. You were worried you would not have enough food to eat?
 2. You were unable to eat healthy and nutritious food?

3. You ate only a few kinds of foods?
4. You had to skip a meal?
5. You ate less than you thought you should?
6. Your household ran out of food?
7. You were hungry but did not eat?
8. You went without eating for a whole day?

Topic 18.INDIAN ARMY TO GET NEW EYE IN THE SKY

Importance for Prelims: Science and Tech

- The Indian Army has received a great boost after Defence Minister Rajnath Singh gave his nod to the Acceptance of Necessity for the GSAT-7B satellite.

What are the GSAT 7 series satellites?

- GSAT seven satellites are advanced satellites developed by the Indian space research Organisation (ISRO) to meet the communication needs of the defence services.
- The GSAT seven satellite was launched in August 2013 from an Ariane five ECA rocket from Kourou in French Guiana.
- It is a 2,650 kg satellite which has a footprint of nearly 2,000 maritime miles in the indian ocean region.
- GSAT seven provides a gamut of services for military communication needs, which incorporates low bit voice rate to high bit rate data facilities, including multi-band communications.
- Named Rukmini, the satellite carries payloads in uhf, C-band and Ku-band, and helps the Navy to have a secure, real time communication link between its land institutions, surface ships, submarines and aircraft.

What is the role of the GSAT 7A satellite, which is already operational?

- The GSAT 7A, dubbed the “Indian Angry Bird” was launched in 2018 from the Satish Dhawan space Centre in Sriharikota, and has gone a long way in boosting the connectivity between the ground radar stations, airbases and the airborne early warning and control aircraft (AEW&C) of the IAF.
- It also helps in satellite controlled operations of unmanned aerial vehicles (UAVs) which gives a good deal of reliability to the operations as compared to ground controlled operations.

- This satellite has 10 channels in Ku band with switchable frequency for mobile users, one fixed Gregorian or parabolic antenna, and four steerable antennae.

What other kinds of military satellites does India have?

- An Electromagnetic Intelligence Gathering Satellite (EMISAT), developed by ISRO, was launched in April 2020 through a Polar Satellite Launch Vehicle (PSLV C45).
- It has an Electronic Intelligence (ELINT) package called Kautilya, which allows the interception of ground-based radar and also carries out electronic surveillance across India.
- The elint package provides the capability in direction-finding of radar and fixing their locations.
- It is placed in a 748-km orbit, and is said to be supported the Israeli satellite system.
- This satellite circles the globe pole-to-pole, and is helpful in gathering information from radars of countries that have borders with India.
- India also has a RISAT 2BR1 artificial aperture radio detection and ranging imaging satellite, which was launched in December 2019 from Sriharikota.
- This satellite circles the globe pole-to-pole, and is helpful in gathering information from radars of countries that have borders with India.
- India also has a RISAT 2BR1 artificial aperture radio detection and ranging imaging satellite, which was launched in December 2019 from Sriharikota.
- It has the capability to operate in different modes including very high resolution imaging modes of 1×0.5 metre resolution and 0.5×0.3 m resolution with a swath of 5-10 kilometre.

What will be the role of the GSAT 7B satellite?

- Till date, the Indian Army has been dependent on GSAT-7A and other satellites, however with this new state-of-the-art technology, the military will have new eyes in the sky.
- The GSAT 7B will primarily fulfil the communication needs of the military.
- GSAT 7B also will help the military enhance its surveillance in border areas.
- Specialists note that continuous satellite coverage over India's huge and complex topography will help the Indian Army in maintaining peace and also to carry out security operations, if needed.
- The use of such a satellite would also mean that the Army's vast array of radio communication equipment could come under one platform.
- **Enhancing the operational reach:** When the military gets its own communication satellite, the UAVs will be able to fly as per their original specifications, since this satellite can provide secure, encrypted communication to them.

Topic 19. HISTORY OF LADAKH

Importance for Prelims: GEOGRAPHY



- Ladakh emerged as a definite entity with the pact of Timosgang in 1684.
- This pact established relations between Leh and Lhasa through trade exchanges.
- With the pact of Chushul in 1842, Ladakh and Tibet agreed to maintain the status quo.
- The Treaty of Amritsar in 1846 between the East India Company and the State of Kashmir included Ladakh with its eastern boundary undefined.
- After Great Britain took over governance of India, attention shifted to the northern boundary of Ladakh due to the Russian advance into Central Asia.
- In 1870, a British Joint Commissioner was posted at Leh, World Health

Organization continued good relations and correspondence with the Dalai Lama and the Chinese Amban at Lhasa and with the Kashmir State

- Disputes in Western Sector:
- The dispute is said to be due to the failure of British empire because it didn't demarcate a legal border between both countries.
- During the British rule in India two borderlines were proposed – Johnson's line and McDonald line in 1865 and 1893 respectively.
- The Johnson's line shows Aksai Chin in Ladakh i.e. under India's control whereas McDonald Line places it beneath China's control.
- India considers Johnson Line as a rightful national border with China, while on the other hand, China considers the McDonald Line as the correct border with India.
- The different claims AND perceptions of Line of Actual Control (LAC) have light-emitting diode to an overlapping area, within that area lies a small zone that each the sides patrol causing clashes of the Indian and the Chinese army. At present, Line of Actual Control (LAC) is the line separating Indian areas of Ladakh from Aksai Chin.
- It is coincident with the Chinese Aksai Chin claim line.
- In Ladakh, the disputed areas include: Pangong Tso lake Galwan Valley, where Shyok and Galwan rivers meet Daulat Beg Oldi (DBO), a key northern region close to the Karakoram Pass.
- The Hot Springs-Gogra area of the Line of Actual Control (LAC) Demchok which is close to the southmost a part of the Line of Actual Control (LAC) in Ladakh.
- Chushul, located on the southern bank of Pangong Tso Lake, has AN airstrip and is near Rezang La pass on the Line of Actual Control (LAC).
- Middle Sector In the middle sector, India shares about 625km of the border with China.

- This is the only sector where the both countries have less disagreement.
- The border runs from Ladakh to Nepal.
- The states of Himachal Pradesh and Uttarakhand touch the border with Ti.bet in this sector.
- Eastern Sector within the eastern sector, India shares a 1140km boundary with China. The boundary line is named McMahon Line runs from the eastern limit of bhutan to a point near the Talu Pass at the trijunction of tibet, India, and Myanmar
- The majority of the territory of Arunachal Pradesh is claimed by China as a part of Southern Tibet.
- China considers the McMahon line illegal. McMahon proposed the line in the Simla Accord in 1914 to settle the boundary between Tibet and India, and Tibet and China.
- Though the Chinese representatives at the meeting initialed the agreement, they later refused to accept it.
- Agreements so far: 1996 Agreement The 1996 agreement is on Confidence-Building Measures in the Military Field along the Line of Actual Control in the India-China Border Areas.
- Article VI (1) of the 1996 agreement says “With a view to preventing dangerous military activities on the line of actual control inside the India-China border areas...Neither side shall open fire, cause bio-degradation, use dangerous chemicals, conduct blast operations or hunt with guns or explosives within 2 kilometres from the line of actual control.
- This prohibition shall not apply to routine firing activities in small arms firing ranges.”
- 2005 Agreement In Article 1:“the two sides will resolve the boundary question through peaceful and friendly consultations.
- Neither side shall use or threaten to use force against the other by any

means” 2013 Agreement 2013 Agreement on Border Defence Cooperation additionally stated that neither side shall use its military capability against the other.

Topic 20.TOWARDS ERADICATING TB FROM INDIA'S TRIBAL COMMUNITIES

Importance for Prelims: Governance

- Aashwasan campaign Launched in 2021 by the Ministry of Tribal Affairs
About Aashwasan campaign Aashwasan campaign Launched in 2021 by the Ministry of Tribal Affairs, Ministry of Health and Family Welfare, United States Agency for International Development (USAID) and Anamaya, Tribal Health Collaborative (an initiative of Piramal Foundation, The Bill and Melinda Gates Foundation and USAID) The Tribal TB Initiative aims to boost care and support among tribal populations in india.
- The campaign fosters community engagement, shaping partnerships with community-based organisations and community-influencers to influence behaviour change to reduce the burden of TB.
- It additionally works with the general public health system to boost screening and diagnosis, increase notification and complement government efforts.
- tuberculosis (TB) is an infectious disease caused by mycobacterium tuberculosis.
- TB commonly affects the lungs (pulmonary TB) but can also affect other parts (extrapulmonary TB) Tuberculosis spreads from person to person through the air, when people who are infected with TB infection cough, sneeze or otherwise transmit respiring fluids through the air.
- the foremost common risk issue related to TB is HIV & other conditions that impair the immune system.
- Common symptoms of T.B. are Chronic cough with blood-tinged liquid body substance, Loss of weight, Loss of appetite, Fever and night sweats, Fatigue, etc.

TB Treatment : consists of four drugs:

1. Isoniazid (INH),
 2. Rifampicin,
 3. Pyrazinamide &
 4. Ethambutol.
- Multidrug-Resistant TB (MDR-TB) 8/15 In MDR-TB, the bacteria that cause TB develop resistance to antimicrobial drugs used to cure the disease.
 - MDR-TB does not respond to at least isoniazid and rifampicin, the 2 most powerful anti-TB drugs.
 - Treatment options for MDR-TB are limited and expensive.
 - CBNAAT (Cartridges Based Nucleic Acid Amplification Test) is used for early diagnosis of MDR-TB.
 - Extensively Drug-Resistant TB (XDR-TB) XDR-TB is a form of multidrug-resistant TB with additional resistance to more antiTB drugs.
 - People who are resistant to isoniazid and rifampicin, plus any fluoroquinolone and at least one of three injectable second-line drugs (amikacin, kanamycin, capreomycin) are said to have XDR-TB.

To achieve goal: To end TB by 2025

- India's Initiative National Strategic Plan (NSP) for Tuberculosis Elimination (2017-2025) The Nikshay Ecosystem (National TB information system) NikshayPoshanYojana (NPY- financial support) TB HaregaDeshJeetega Campaign.
- **Global Initiative:** The World Health Organization has launched a joint initiative "Find. Treat.
- All. #EndTB" with the global Fund and Stop TB Partnership.
- WHO also releases the Global Tuberculosis Report

Topic 21.REVOCATION OF DISASTER ACT

Importance for Prelims: Disaster Management

- Two years on, with the country's active caseload falling and accumulative vaccination doses administered, the MHA has asked states to "appropriately" discontinue the guidelines on containment of Covid-19.
- Concept: Background: Since March 24, 2020, the Ministry of Home Affairs (MHA) has been issuing orders and guidelines to contain Covid-19.
- The MHA has been supplying directions to states through the National Disaster Management Authority (NDMA), beneath The Disaster Management Act, 2005.
- The Disaster Management Act, 2005: The law lays down the institutional mechanism for drawing up and monitoring the implementation of disaster management plans.
- Under the law, the National Disaster Management Authority (NDMA), headed by the Prime Minister, has been established.
- A National executive Committee, that has the Union Home Secretary and members from numerous ministries, assists the NDMA.
- the main focus is on the prevention and mitigation of disasters, and on swift response to disaster situations.
- Section ten of the Act deals with the powers and functions of this National executive Committee.
- It also empowers the Committee to put down guidelines or give directions to, the concerned Ministries or Departments of the GoI and the State Governments.
- The Union Home Ministry has been issuing instruction for the containment of Covid-19 underneath this section.
- The last important order passed by the MHA below the act was the proof

based containment measures, social distancing and imposition of Section a hundred and forty four of CrPC in the backdrop of omicron Variant.

- The latest order effectively signals a come back to full normalcy from april 1 because the MHA has advised all states to “appropriately” discontinue after March 31 the rules that were issued under the DM Act.
- However, public health measures to find a possible new surge in cases, have to be enforced.

Have the rules under the Act been imposed earlier?

- Yes. Before the onset of the pandemic in March 2020, guidelines have been issued under the law on the management of earthquakes, chemical disasters, droughts, hospital safety, urban flooding, etc.

Topic 22. CESS AND SURCHARGE AS DEDUCTIONS

Importance for Prelims: Economy

- The Finance Ministry has proposed that deduction claimed for cess and surcharge under the Income Tax Act will be treated as “under-reported” income.
- Amendment to Finance Bill inserts a new clause to Section a hundred and fifty five of the IT Act.
- If declared ‘under-reported’, total income will be recomputed and the assessee will have to pay tax, interest and penalty.
- The amendment will take effect retrospectively from April 1, 2005 and will apply to the assessment year 2005-06 and thereafter.
- Though each Cess and Surcharge add money to the government’s revenue, these are different in many aspects.
- Cess and surcharge are the taxes levied by the Union Government in order to boost funds for government operations.
- Cess Example-Every individual in India is liable to pay income tax and has to also pay the health and education cess at the rate of 4% on the tax including surcharge.
- Definition– A cess is collected by the govt. for the development of a selected service or sector. So, because the name suggests, the health and education cess cannot be used for any other means.
- Cess is imposed as an additional tax besides the existing tax (tax on tax).
- However, certain cesses, like the Swachh Bharat Cess (SBC), are levied as a percentage of the overall price. The SBC is 0.5 p.c of the total value of the facilities during this case.
- Cess is paid to the Consolidated Fund of India, however it can only be used for specific purposes.
- Cess Article 270 of the Constitution allows cess to be excluded from the


- purview of the divisible pool of taxes that the Union government must share with the States.
- The process of cess levying occurs after Parliament has authorised its creation through an enabling legislation that specifies the aim that the funds are being raised.
 - There are forty two cesses that are levied at numerous times since 1944 as listed in a report by the Vidhi Centre for Legal Policy in August 2018.
 - The very 1st cess was levied on matches, according to this study
 - Post Independence, the cess taxes were linked at first to the development of a specific industry, including a salt cess and a tea cess in 1953.
 - The introduction of the Goods and Services tax (GST) in 2017 led to most cesses being done away with and as of August 2018, there were only seven cesses that continued to be levied.
 - These were: Cess on Exports Cess on Crude Oil Health and Education Cess Road and Infrastructure Cess, Other Construction Workers Welfare Cess, National Calamity Contingent Duty Duty on Tobacco and Tobacco Products The GST Compensation Cess.
 - The Finance Minister Nirmala Sitharaman introduced a new cess — a Health Cess of 5% on imported medical devices — in the Finance Bill for 2020-2021.
 - **Surcharge Example**In the case of individuals earning a net taxable salary of more than Rs 1 crore, a surcharge of 10% is levied on tax liability.
 - Surcharge at the rate 5% is levied on domestic firms if net income is within the range of Rs one cr to Rs ten cr.
 - If the net income exceeds Rs ten cr, surcharge at the rate of 10 percent is levied.
 - Surcharge at the rate 2 percent is levied on foreign firms if the net income is within the range of Rs one cr to Rs ten cr.

- If the net income exceeds Rs ten cr, the surcharge is increased five percent.
- Marginal relief is given to each domestic and foreign firms just in case the net income exceeds Rs one cr and Rs ten cr.
- Definition-A surcharge applies to those persons whose financial gain is quite Rs.50 lakhs.
- This money is not collected for any specific cause, but can be used for any reason as the Union Government sees fit.
- Interestingly, it's applicable on the tax collectable and not the entire financial gain.
- This collection also goes to the Consolidated Fund of india and may be used for any purpose.
- The surcharge is a fee include to any tax that has already been paid.
- The surcharge is a term that refers to an additional fee or levy
- income tax (on high-income slabs and the ultra-wealthy) and company tax are the 2 largest surcharges.
- It's worth noting that it only applies to the tax due, not the whole income.

Topic 23. WHAT ARE CENSUS TOWNS

Importance for Prelims: Polity

CRITERIA FOR CENSUS TOWNS	
<p>➤ Gram panchayats that are likely to be population hubs on their own and showing characteristics of urban activity are identified as census towns</p> <p>➤ The census towns satisfy a threefold urban criteria relating to</p>	<p>population, density and main working force engaged in non-agricultural activities</p> <p>➤ The government recently authorised the chief town planner to map the census towns to such panchayats which fall wholly or partly within them</p>



What are Census town?

- Census towns are areas that the census classifies as urban because they have more than 5,000 people, a density greater than 400 persons per sq. km, and seventy fifth percent of the male working population in non-agricultural activities.
- However, census towns are governed by rural local bodies (RLBs) or Panchayats..

What is a statutory town?

- 1A statutory city is one with a municipality, corporation, cantonment board or notified city area committee.
- As per 2011 Census, there are 4,041 such towns as against 3,799 in 2001.

Benefits for states:

- Conversions of Census cities into statutory ULBs entitle states to Central help as per the rules of Finance Commission.
- Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT), 50% weightage is given to the number of statutory towns in any State/UT in allocation of funds among States/UTs.

Noise Pollution Subject:

- Environment Section: Environmental Pollution Context: According to the UNEP's Frontiers 2022 Report, the city of Moradabad in Uttar Pradesh is the second-most noise polluted city globally.
- Concept: Moradabad has recorded noise pollution of a maximum of 114 decibels (db).
- The highest sound pollution of 119 dB has been recorded in Dhaka, the capital of Bangladesh. At third place is Pakistan's capital capital of Pakistan, where the sound pollution level has been recorded at 105 dB.
- The report identifies thirteen noise polluted cities in south Asia.
- 5 of those area unit in india – Moradabad, Kolkata, Asansol, Jaipur and city.
- The report said, Regular exposure for eight hours a day to eighty five decibels of sound can permanently eliminate the flexibility to listen to.
- Not only that, exposure to relatively low sound pollution for long periods in cities can damage physical and mental state.
- For e.g., long-term exposure to sound pollution in Europe causes 12,000 premature deaths annually, 48,000 new cases of cardiopathy and 22 million people suffer from irritability.
- A study in korea showed that a one decibel increase in daytime sound increased the chance of cardio (heart) and cerebrovascular (related to blood flow to the brain) diseases by 0.17 to 0.66 per cent. Noise Pollution: Presence of excessive or unwanted sounds in the environment is called noise pollution. Sound levels are measured in decibels (dB).
- Causes: 1. 1. Outdoor: sounds of vehicles, explosions including explosive of crackers, machines, loudspeakers etc.
- Indoor: Television and transistor radio at high volumes, some kitchen appliances, desert coolers, air conditioners etc.

- Harms: Lack of sleep, high blood pressure (high blood pressure), anxiety and many a lot of health disorders.
- a person who is exposed to a loud sound continuously could get temporary or perhaps permanent impairment of hearing.
- Besides, it's bad effect on the communication of the many animal species living within the area and their ability to hear.
- WHO Standards: As per 1999 guidelines, 55 db is the standard for residential areas, while for traffic and business sectors, the limit was 70 db.
- Later the limit was set as fifty three db in 2018, taking into account health safety.
- Measures to limit Noise pollution:
 1. Installing silencing devices in air craft engines, transport vehicles, industrial machines and home appliances.
 2. Conduct noisy operations away from any residential area.
 3. Use of automobile horns should be minimised.
 4. TV and music systems should be run at low volumes.
 5. Trees must be planted along the roads and around
 6. buildings to cut down on the sounds reaching the residents.

Topic 24. PLASTIC POLLUTION

Importance for Prelims: Environment



- UNEA-5 in Nairobi endorsed a historic resolution to end Plastic pollution and forge an international legally binding agreement by 2024.
- The resolution, based on 3 initial draft resolutions from various nations, establishes an Intergovernmental Negotiating Committee (INC), which is able to begin its work in 2022.
- It's expected to present a legally binding instrument, which would reflect diverse alternatives to address recyclable lifecycle of plastics, the look of reusable and useful product and materials, and the need for increased international collaboration to facilitate access to technology, capacity building and scientific and technical cooperation.
- Plastic Pollution: Approximately 7 billion of the 9.2 billion tonnes of plastic produced from 1950-2017 became plastic waste, ending up in landfills or dumped.

- Littering, mismanagement of waste streams and extreme events like floods, that are increasing because of climate change, increase the quantity of plastic litter that ends up within the ocean.
- Major Chemical compounds utilized in plastic products include: Poly ErythrolTetraphthalet (PET), High Density Poly ethylene (HDPE), Poly Vinyl Chloride (PVC), low density Poly ethylene (LDPE), Poly propylene, BisphenolA (BPA) and bisphenolS (BPS).
- Impacts of Plastic Pollution: alter habitats and natural processes, reducing ecosystems' ability to adapt to climate change, directly affecting millions of people's livelihoods, food production capabilities and social well-being.
- Harm human health potentially affecting fertility, hormonal, metabolic and neurological activity.
- Open burning of plastics lead to air pollution.
- By 2050 GHGs related to plastic pollution would account for 15% of allowed emissions would account for 15% of allowed emissions under the goal of limiting global warming to 1.5 Marine and coastal species get affected through ingestion, entanglement and other dangers.
- Economic ramifications: since the ocean generates US\$2.5 trillion in goods and services a year and contributed to 31 million direct full-time jobs prior to the COVID19 pandemic.
- **UNEP's Clean Seas 2.0:** From Source- to- Sea: Launched in 2017, the Clean Seas campaign engages governments, the general public, civil society and the non-public sector to strengthen effectiveaction plans on marine litter and plastic pollution. Currently, 63 countries are Clean Seas signatories.
- Clean Seas 2.0 initial focus on single-use plastics and their elimination, communicating the root causes associated with the production, use and

disposal of unnecessary, avoidable and problematic plastics thereby following an evidence based approach.

- Its topic areas will cover a range of merchandise, including packaging, ghost fishing gear, tyres and textiles.
- It leverages two key river-focussed UNEP projects: Counter MEASURE and Mississippi River Plastic Pollution Initiative.
- The “Counter MEASURE” uses cutting-edge technology to identify the supply of plastic pollution in river systems in Asia – primarily the Ganges River and Mekong River.
- Through a combination of citizen science, drone imaging, machine learning and geographic analyses, the project collects data and identifies plastic waste hotspots and shares it with partner organizations and governments across the region.
- Citizen science is a critical aspect of the “Mississippi River Plastic Pollution Initiative” also led by UNEP in partnership with the Mississippi River Cities and Towns Initiative and the University of Georgia.
- UNEP and the Ellen Mc Arthur Foundation also co-lead the worldwide Commitment, which has established a common vision of a circular economy for plastics by 2025.
- Through the Global Partnership on Marine Litter, UNEP is developing a Digital Platform to bring together and connect actors and information to catalyse action before plastic pollution ends up in the ocean.

Topic 25. 50 YEARS OF UNEP

Importance for Prelims: Environment



UNEP celebrates fifty years of solving world's environmental challenges.

- **UNEP- Background:** In 1972, the UNGA passed what is formally known as UN-Resolution 2997. It would be the last step in the establishment of the United Nations Environment Programme (UNEP) – an organisation conceived to spearhead a global effort to reduce humanity's footprint on the planet.
- **Headquarters:** Nairobi, Kenya.
- **Governing Body:** UNEA (formed in 2012) – meets once in 2 years. Major Functions: It hosts various Conventions like Minamata Convention, UNCBD, CITES, Basel Convention, Stockholm Convention, City Convention, Montreal Protocol, Vienna Convention, CMS, Carpathian, Bamako, Tehran Convention.
- **Main activities:** are related to Climate Change, Disasters and Conflicts, Ecosystem management, Environmental Governance, Chemicals and waste, Resource Efficiency.
- **Important Treaties signed beneath UNEP:** IPCC, Conservation of

Migratory Species (CMS), global environment Facility (GEF) and the multilateral Fund for the implementation of Montreal Protocol.

- In 2021, member states approved UNEP's new Medium-Term Strategy (MTS) for 2022-25 that outlines UNEP's contribution to the '2030 Agenda for Sustainable Development' and the Programme of Work 2022-23.
- multilateral Organization Performance Assessment Network (MOPAN) was initiated in 2021 by Belgium, Netherlands and Switzerland and includes twenty-one countries that assess the performance (2016-20) of the major multilateral organizations they fund.

Important Initiatives undertaken by UNEP so far:

1. Regional Seas Programme, 1974
2. Clean up the world Campaign, 1993
3. TUNZA, 2003
4. Billion Tree Campaign, 2006
5. Faith for Earth Initiative, 2008
6. World Environment Day (June 5)
7. Earth Hour
8. Not all animals migrate by choice campaign, 2019

Reports of UNEP:

1. Emission Gap Report
2. Adaptation Gap Report
3. Frontiers
4. Global Environment Outlook
5. Invest in a Healthy Planet

Topic 26. EXPORT PREPAREDNESS INDEX (EPI) 2021

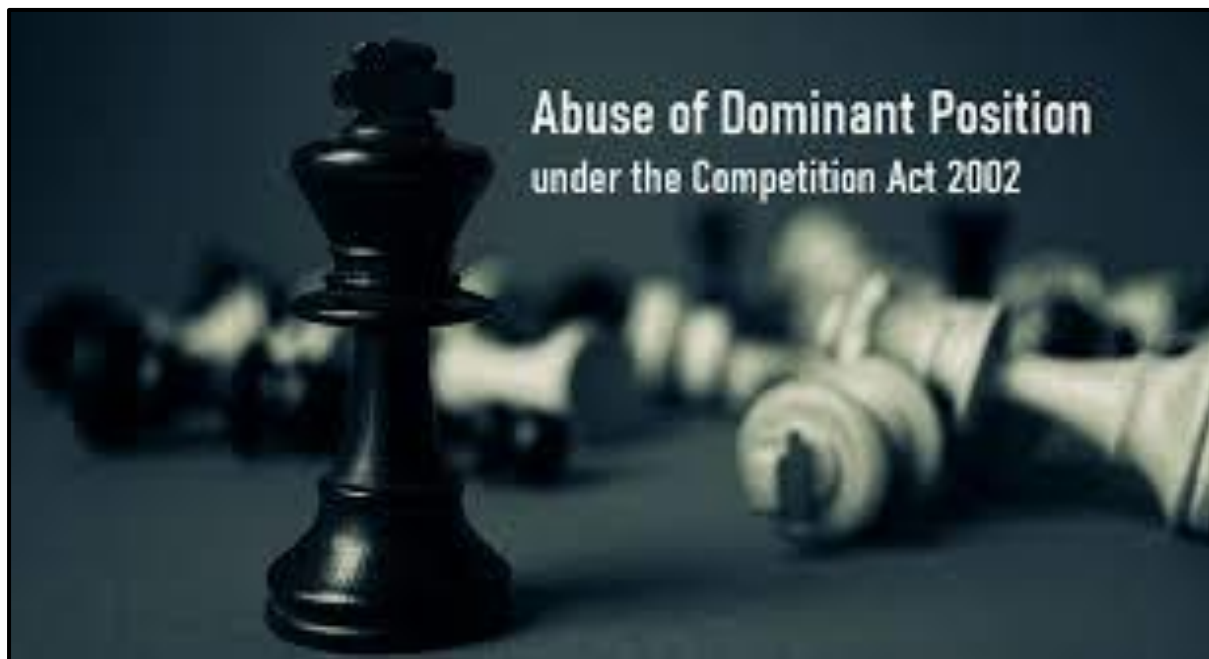
Importance for Prelims: Economy

- NITI Aayog in partnership with the Institute of Competitiveness releases the Export Preparedness Index (EPI).
- It is the primary report to examine export readiness and performance of Indian states, EPI intends to identify challenges and opportunities; enhance the effectiveness of government policies; and encourage a facilitative regulatory framework.
- The structure of the self-report inventory includes four pillars –Policy; Business Ecosystem; Export Ecosystem; Export Performance – and eleven sub-pillars –Export Promotion Policy; Institutional Framework; Business Environment; Infrastructure; Transport Connectivity; Access to Finance; Export Infrastructure; Trade Support; R&D Infrastructure; Export Diversification; and Growth Orientation.
- The 4 pillars and the rationale behind selection of each of them are given below: Policy: A comprehensive trade policy provides a strategic direction for exports and imports.
- Business Ecosystem: an efficient business ecosystem will facilitate states attract investments and build an enabling infrastructure for people to initiate startups.
- Export Ecosystem: This pillar aims to assess the business environment, that is particular to exports.
- **Export Performance:** this is the only output-based pillar and examines the reach of export footprints of States and Union Territories.
- Export Preparedness Index (EPI) 2021 Gujarat, Maharashtra, Karnataka, Tamil Nadu are ranked in the top five states, as coastal States with higher industrial activity and access to sea ports account for a majority of India's exports.

- Haryana, Uttar Pradesh and Madhya Pradesh have been ranked fifth, sixth and seventh in the overall index, but are the top three performers in export preparedness among land-locked States Uttarakhand, Himachal Pradesh and Tripura have been ranked as the top three Himalayan States in export preparedness, Delhi, Goa and Jammu & Kashmir have been rated the best performers in the 'Union Territories and City States' category, as per the index.
- The index identifies 3 major challenges to India's export promotion efforts: intra- and inter-regional variations in export infrastructure; weak trade support and growth orientation across States; and lack of R&D infrastructure to promote complex and unique exports.

Topic 27. ABUSE OF DOMINANCE

Importance for Prelims: Economy



The Competition Commission of India (CCI) has ordered a probe into a complaint of abuse of dominant position by Google in their news referral and connected advertisement service that is a violation of Section 4 of the Competition Act, 2002. The newspaper society also alleged that the publishers of news were not being paid a fair value for the content they produced and put out on their digital platforms and by advertising.

Section 4 of Competition Act 2002

- No enterprise shall abuse its dominant position.
- (2) There shall be an abuse of dominant position below sub-section (1),
- if an enterprise, — (a) directly or indirectly, imposes unfair or discriminatory—
 - (i) condition in purchase or sale of goods or services; or
 - (ii) price in purchase or sale (including predatory price) of goods or service; or Explanation
- shall not include such discriminatory conditions or prices which may be

- adopted to meet the competition; or
- (b) limits or restricts—
 - (i) production of goods or provision of services or market therefor;
 - (ii) technical or scientific development regarding product or services to the prejudice of consumers; or
- (c) indulges in observe or practices resulting in denial of market access;
- (d) makes conclusion of contracts subject to acceptance by alternative parties of supplementary obligations that, by their nature or according to industrial usage, don't have any reference to the subject of such contracts; or
- (e) uses its dominant position in one relevant market to enter into, or protect, another relevant market.
- Explanation .—For the purposes of this section, the expression— (a) “dominant position” means that a position of strength, enjoyed by an enterprise, within the relevant market, in India, that allows it to—
 - (i) operate independently of competitive forces prevailing within the relevant market; or
 - (ii) affect its competitors or customers or the relevant market in its favour;
- (b) “predatory price” means the sale of products or provision of services, at a value that is below the cost, as could also be determined by laws, of production of the products or provision of services, with a view to cut back competition or eliminate the competitors.

Issue?

- Misuse of monopolistic powers by the {large|the massive} firms and gain large profit share by eliminating competition because of Network effect: due to strong network effects, it is not possible to ban or curtail these services.

- The major Loyalty: the most important players have harnessed technologies that let synchronizing between devices and people in a manner that is often superficially described as “brand loyalty.”
- Because of this, many times, there was no choice available to users to use different alternatives.

Concerns?

- **Unfair Competition:** Innovations and technological advancements have meant that unlikely giants have emerged in an extremely short span of time.
- To retain their position, these corporations may resort to anti-competitive behavior.
- **For example:** Entry barriers Favours few sellers on their platforms
High advertising revenue and not paying newspapers for their contents
Exclusive arrangements and cartelization.
- **Privacy Concerns:** huge tech firms’ market power is built at individuals’ expense through the unscrupulous collection and process of user information and forcing certain products on customers.
- **Slow Regulation:** Due to rapid innovation and advancement by the Big Tech firms, the regulators are only able to react, not be in readiness.
- **Monopoly** A monopoly is a market structure that consists of a single seller who has exclusive control over a commodity or service.
- The word mono means that single or one and the prefix pole in finds its roots in Greek, which means “to sell”
- Hence, the word monopoly literally translates to single vender.
- **Characteristics** Single seller – A single seller has total control over the production, and selling of a specific offering.
- This also means the vendor has no competition and holds the whole market share of the giving that it deals in.

- No close substitutes – The monopoliser produces a product or service that has no similar or shut substitute.
- Barriers to entry – in a monopoly market structure, new companies cannot enter the industry because of barriers like government rules, contracts, insurmountable prices of production, etc.
- **Price maker** – A monopoliser has the ability to charge any worth for its product of service.
- **Types Private Monopoly** – A private monopoly is one that is owned by an individual or a group of individuals. These monopolies mainly aim for profits.
- **Public Monopoly** – A public monopoly is one that's owned by the govt.. These monopolies are set up for the welfare of the masses.
- An example of a public monopoly would be the U. S. Postal Service.
- **Pure/ Absolute Monopoly** – The monopolist controls the entire market supply for its product without facing any form of competition.
- This is possible because there is absolutely no close or remote substitute available in the market.
- **Imperfect Monopoly** – The monopolist controls the entire market supply for its product as there is no close substitute, but there is a remote substitute for the product available in the market.
- **Simple Monopoly** – a simple monopoly is one in which one merchandiser sells its product or service for one worth.
- there's no worth discrimination in a very simple monopoly.
- **Discriminating Monopoly** – A discriminating monopoly is one where one merchandiser doesn't sell his product or service for one worth.
- worth discrimination is witnessed wherein costs may vary from region to region, or people coming back from totally different economic backgrounds may be charged a different worth, etc.

- **Legal Monopoly** – A legal monopoliser enjoys government approved rights like trademark, patent, copyright, etc.
- **Natural Monopoly** – A natural monopoliser enjoys or advantages from natural factors like locational advantages, locational reputation, natural abilities and skill sets of the producers, etc
- **Technological Monopoly** – when a firm holds a technologically superior position that different companies cannot compete with, the firm is said to be a technological monopoly.
- **Joint Monopoly** – when 2 or additional companies join hands in order to create a monopoly, it's referred to as a joint or a shared monopoly.

Topic 28. TRAI MAY COME OUT WITH 5G SPECTRUM PRICING BY MONTH END

Importance for Prelims: Polity

Telecom Regulatory Authority of India (TRAI) is set to give its recommendation on 5G spectrum pricing by the end of this month, after the Prime Minister's Office asked the Department of Telecommunications (DoT) to ensure 5G rollout by August 15.

What is spectrum?

- Devices such as cellphones, radio, wifi, etc. require signals to connect with one another. These signals are carried on airwaves.
- These airwaves must be sent at appointed frequencies to avoid any kind of interference.
- Such airwaves are called the spectrum.
- The various frequencies are subdivided into bands.
- Frequency is the number of repetitions of the wave that one can see in a period.
- If a wave repeats slowly, it is low frequency.
- If the wave repeats a lot of, then it's called high frequency.
- Hertz (Hz) is the unit of Frequency. Range of various devices: Radio – 100-200 Megahertz (Mhz) Telecom – 800 Mhz – 2300 Mhz Wifi – Earlier it was 2.4 Ghz and now enhanced to 5 Ghz

What is a spectrum auction?

- The Union government owns all the publically accessible assets within the geographical boundaries of the country.
- This includes the airwaves also. So the government has the right to sell the airwaves.
- The selling of airwaves as a band for a particular period is understood as Spectrum Auctions

- The central government through the DoT (Department of Telecom) auctions these airwaves from time to time.
- The government performs spectrum auctions after dividing the whole country into telecommunication circles. Presently India is divided into twenty two telecommunication circles.
- All these spectrums are sold for a certain period of time, after which their validity lapses, which is generally set at 20 years.
- Telecom Regulatory Authority of India (TRAI) Telecom Regulatory Authority of India (TRAI) is a regulatory body set up by the Government of India under section 3 of the Telecom Regulatory Authority of India Act, 1997.
- It is the regulator of the telecommunications sector in India.
- Composition: It consists of a Chairperson and not more than two full-time members and not more than two part-time members. Tenure of Members: The Chairperson and other members shall hold their office for a term of three years or till the age of 65 years, whichever is earlier
- The TRAI Act was amended by an ordinance, effective from twenty four January 2000, establishing a telecommunication Disputes Settlement and appellate tribunal (TDSAT) to take over the adjudicatory and disputes functions from TRAI.

Objectives of TRAI

- To provide a fair and good and transparent policy environment that promotes a level playing field and facilitates fair competition.
- Functions of TRAI The function of the TRAI is to make recommendations on the following matters: Need for introduction of new service provider
- Revocation of license for non-compliance of terms and conditions of licence.

- Measures to facilitate competition and promote efficiency within the operation of telecommunication services to facilitate their growth
- Technological improvements in the services provided by the service providers.
- **Discharge of Responsibilities:** The TRAI is responsible for discharging the following functions: Ensuring the compliance of terms and conditions of licence Ensuring the technical compatibility and effective interconnection between different service providers.
- Laying down the standards of quality of service to be provided by the service suppliers.
- Ensuring the quality of service and conducting the periodical surveys of such services.
- Timely and officially notifying the rates at which the telecommunication services within India and outside India shall be provided under the TRAI Act, 1997.
- The recommendations of the TRAI aren't binding upon the Central Government.

Topic 29. URBAN LOCAL BODIES FINANCES

Importance for Prelims: Polity

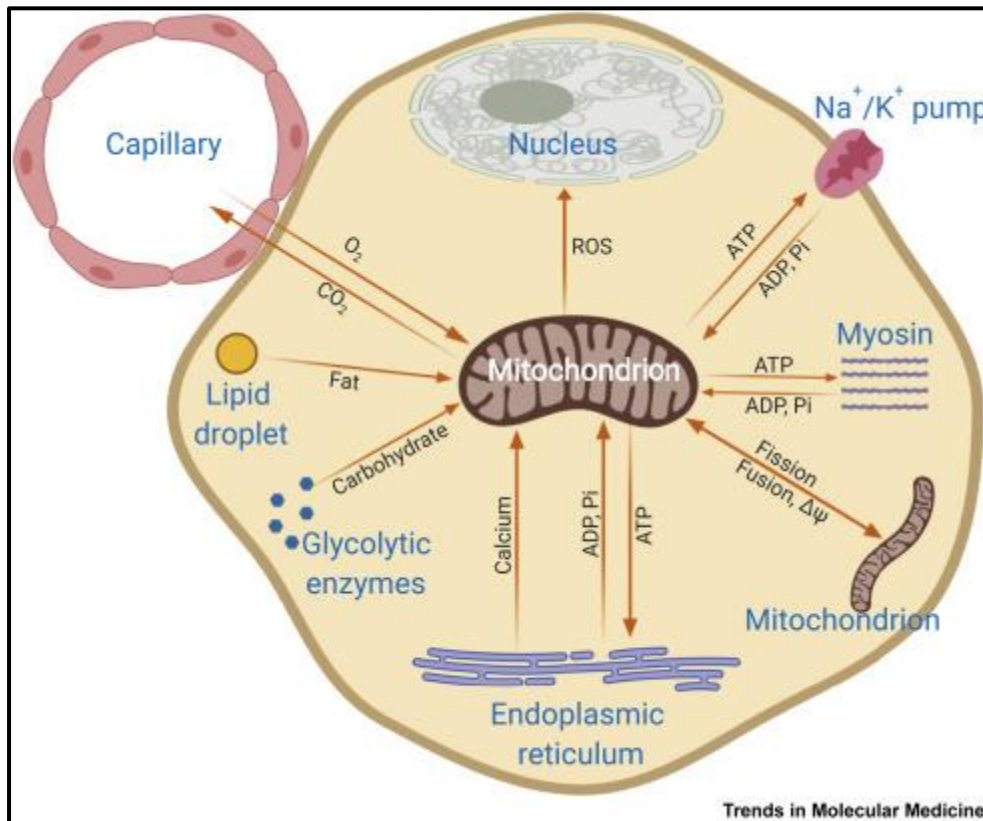
CAG reports that TN Urban Local Bodies face shortage of funds Present Status of Urban Local Bodies Finances: Study conducted by the 15th Finance commission, highlight the following concerning trends in Municipal finances: Low municipal revenue to GDP Ratio, which has remained stagnant at around 1% of GDP during the period from 2007 to 2017-18

- The same ratio is 6% for South Africa, 13.9% for United Kingdom Declining own revenue: The share of municipal own revenue in total municipal revenues has declined significantly from 55% in 2007-08, to 43% in 2017-18 Low diversification of tax resources
- At present, property tax remains the only major tax in the municipal portfolio in India, and it has contributed to about 60% to municipal tax revenue in India By contrast, municipalities in other parts of the world have access to a much wider basket of taxes Inadequate intergovernmental transfers:
- While share of intergovernmental transfers in municipal revenue has been increasing since 2010-11, it still remains insufficient Low per capital expenditure even though per capita municipal expenditure has increased in India, it still lags far behind in per capita spending when compared to other countries India's per capita spending is \$17, as against \$116 of China Financial Power of Municipalities The State Legislature by law:
 1. Authorize a municipality to collect, collect and appropriate taxes, duties, tolls and fees.
 2. Allocate the taxes, duties, tolls and taxes collected and collected by the state government to a municipality.
 3. Granting of aid to municipalities from the Consolidated Fund of the State.
- Establishment of funds for the credit of all municipal funds.

- Ways for raising finances Mobilise their own resources by increasing their tax base in terms of property tax, service tax so on Issue Municipal Bonds to mobilise funds Landmonetisation and betterment levy could also be tried to make sure land values used for socially relevant purposes.
- Regular Constitution of State finance commission by governor to devolve funds to native bodies on time.

Topic 30. HOW MITOCHONDRIA ADAPTED TO LIVING WITHIN CELLS

Importance for Prelims: Science and Tech



An organism that has been around from two billion years ago has given biologists from Centre for Cellular and molecular biology, Hyderabad (CCMB), a clue as to how mitochondria became an inseparable part of animal and plant cells Findings: Today, mitochondria are well known to be integral parts of the eukaryotic cell.

- They are dubbed the power houses of the cell, because they help in generating energy in the form of ATP within the cell, powering it.
- But they were not always part of the animal and plant cells.
- Once, about two billion years ago, a prokaryotic organism (without a nucleus) called archaea captured a bacterial cell.
- The bacterial cell learnt to live within the archaea as an endosymbiont.
- In the late 19th century, observed that organelles like chloroplast [and

later mitochondria] undergo division inside eukaryotic cells that resembles bacterial division, which led them to suspect that these organelles might have arisen from bacterial endosymbionts. By studying an organism known as jakobid, which has been around since before animals and fungi branched off from plants and algae in the process of evolution, the researchers have identified 2 adjustments that had to take place to facilitate the integration of the 2 organisms.

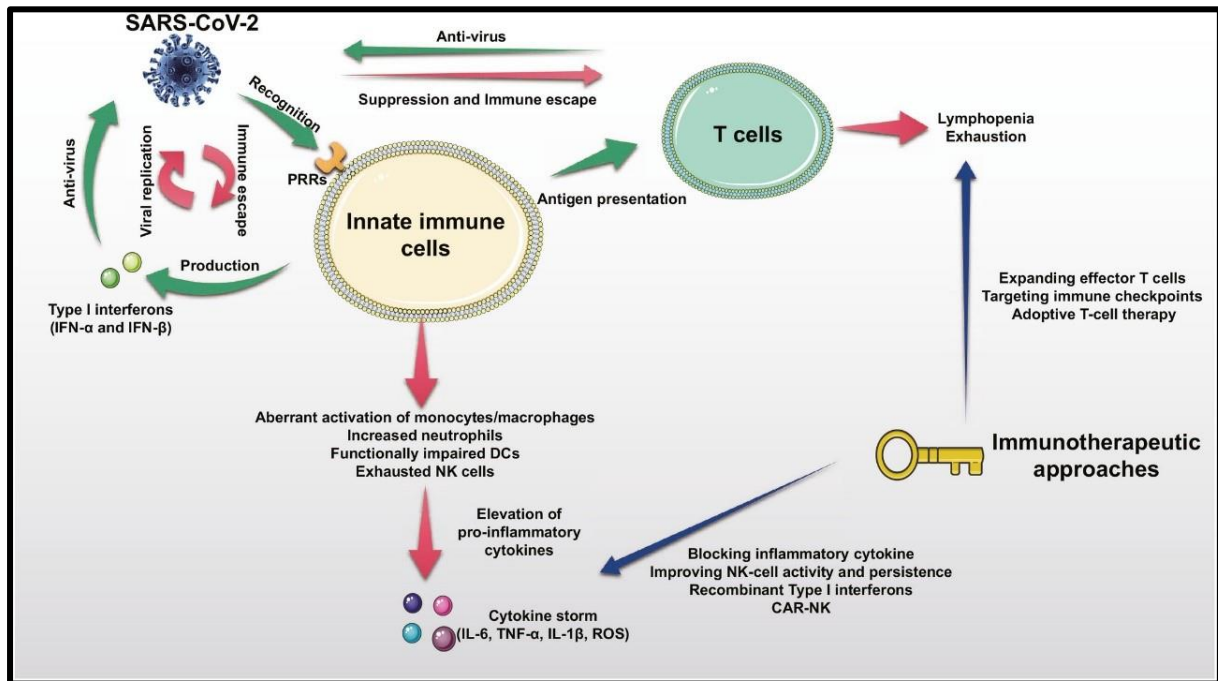
- These adjustments were made in the process of optimisation when the two organisms merged together, evidently for compatibility.
- The researchers show that these changes, in a protein (DTD) and a tRNA (carrying an amino acid glycine for protein synthesis) are crucial for the successful emergence of mitochondria. Mitochondria are known as the powerhouse of the cell.
- The energy required for various chemical activities needed for life is released by mitochondria in the form of ATP (Adenosine Triphosphate) molecules.
- ATP is known as the energy currency of the cell.
- The body uses energy stored in ATP for creating new chemical compounds and for mechanical work.
- Mitochondria have 2 membrane coverings rather than only 1.
- The outer membrane is extremely porous while the inner membrane is deeply folded.
- These folds create an oversized surface area for ATP-generating chemical reactions.
- Mitochondria are strange organelles within the sense that they have their own DNA and ribosomes.
- Therefore, mitochondria are ready to create some of their own proteins
- Prokaryotic Cells vs. Eukaryotic Cells Organisms whose cells lack a

nuclear membrane, are called prokaryotes. Organisms with cells having a nuclear membrane are called eukaryotes.

- Prokaryotic cells also lack most of another protoplasmic organelles present in eukaryotic cells.
- Many of the functions of such organelles are also performed by poorly organised parts of the cytoplasm.
- The chlorophyll in photosynthetic prokaryotic bacteria is related to membranous vesicles (bag like structures) however not with plastids as in eukaryotic cells.
- Prokaryotes thus have defined nuclear region, the membrane-bound cell organelles are absent.
- Eukaryotic cells have nuclear membrane as well as membrane-enclosed organelles.
- Jakobids are an order of free-living, heterotrophic, flagellate eukaryotes in the supergroup Excavata.
- They are small (less than fifteen μm), and might be found in aerobic and anaerobic environments.

Topic 31. T CELL IMMUNE RESPONSES SEEN A YEAR AFTER INFECTION

Importance for Prelims: Science and Tech



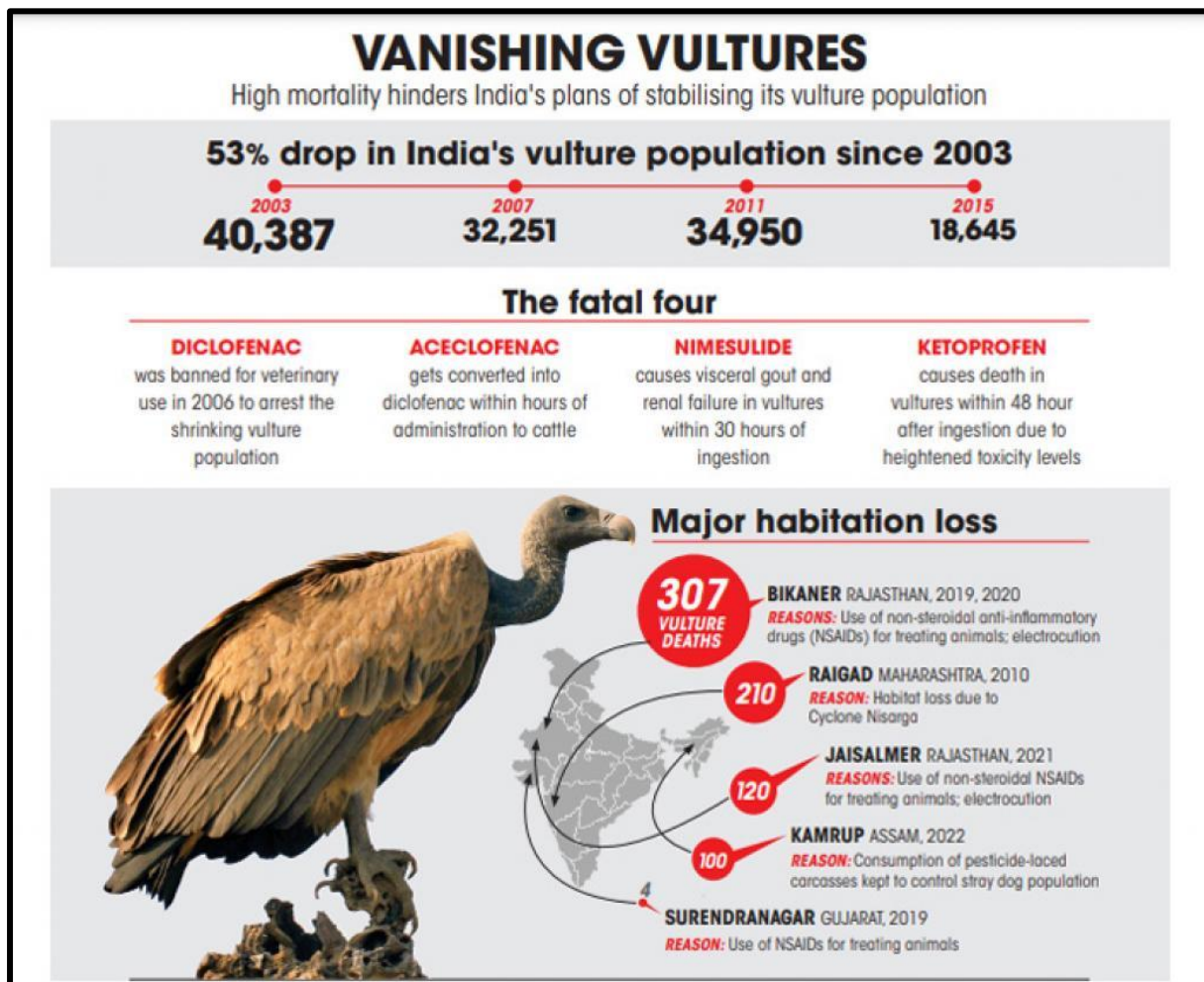
- Omicron variant was found to cause only mild sickness in totally vaccinated people and in those with previous infection.
- **Findings of new study from Wuhan:** regarding T Cells Cells also called T lymphocyte, kind of leukocyte (white blood cell) that's an important a part of the immune system.
- T cells are one in all 2 primary types of lymphocytes—B cells being the second type—that determine the specificity of the immune response to antigens (foreign substances) within the body.
- T cells originate within the bone marrow and mature within the thymus.
- In the thymus, T cells multiply and differentiate into helper, regulatory, or cytotoxic T cells or become memory T cells.
- They are then sent to peripheral tissues or flow into within the blood or lymphatic system. Once stimulated by the appropriate antigen, helper T cells secrete chemical messengers known as cytokines, that stimulate the

differentiation of B cells into plasma cells (antibody-producing cells).

- T cells role in controlling immunity Regulatory T cells act to control immune reactions, hence their name.
- Cytotoxic T cells, that are activated by numerous cytokines, bind to and kill infected cells and cancer cells.
- Because the body contains millions of T and B cells, many of which carry unique receptors, it can respond to virtually any antigen.

Topic 32. DICLOFENAC WAS NOT THE LAST THREAT FOR INDIA'S VULTURES

Importance for Prelims: Environment



On March fourteen, the Bombay natural history Society (BNHS), India's oldest biodiversity conservation group, wrote a letter urging Ministry of environment, Forest and climate change (MoEF&CC) to ban the utilization of 3 veterinary medication known to kill vultures within the country.

- The letter warns that the rampant use of the 3 non-steroidal anti-inflammatory drugs (NSAIDS) threatens to undo the Centre's 20 years of work to arrest the dwindling vulture population within the wild. amazingly, the 3 drugs— aeclofenac, ketoprofen and nimesulide—were introduced as alternatives to diclofenac, the NSAID that india prohibited

in 2006 for animal use because it caused widespread vulture deaths.

- Diclofenac Diclofenac is a common medicine administered to livestock and is used to treat the symptoms of inflammation, fevers and/or pain related to disease or wounds.
- In simple words, Diclofenac is a pain reliever.
- People use it to treat mild to moderate pain and the symptoms of osteoarthritis and rheumatoid arthritis.
- Diclofenac leads to kidney failure in vultures damaging their excretory system (direct inhibition of uric acid secretion in vultures).
- Gyps species were the most affected by diclofenac.
- Challenges in eradication Diclofenac for veterinary use was banned in 2005 but it was continued to be made for humans.
- They are effective against seasonal flu.
- We also use them as painkillers.
- There are 20-30 cows that undergo treatment at a point of time Need not have a prescription to get your hands on diclofenac or any other NSAIDS Many district in the country, has limited trained veterinarians and a high number of quack doctors who prescribe drug overdoses Vultures In India Action Plan for Vulture Conservation for 2020-2025.

Topic 33. FORGOTTEN NAMES OF RIN

Importance for Prelims: Modern History

Author Pramod Kapoor brings out in his meticulously researched history of the short-lived Royal Indian Navy (RIN) mutiny, that Admiral John Henry Godfrey, who headed the RIN, was the inspiration for spy thriller author Ian Fleming's character 'M', the boss of his swashbuckling hero James Bond.

Important Personalities of RIN (1946)

- John Henry Godfrey– Director of Naval Intelligence in 1939 appointed Fleming as his assistant and treated him as his son. He was made the scapegoat by his naval bosses in London and replaced the day after the mutiny ended.
- Rishi Dev Puri– played a key role in fomenting the mutiny.
- He along with B.C. Dutt to form some embarrassment painted the words “Jai Hind” and “Quit India” on the HMIS Talwar platform wherever the new Commander-in-Chief was going to address the gathering.
- B.C. Dutt was arrested because of seditious literature found in his locker and Puri was discharged from the navy 3 weeks before the actual event. Incidentally, Puri,
 - who once earned a living as a professional piano player in London, was the younger brother of VidyaVikasPurie, who, along with his kids, founded the india today media empire.
- **RIN Mutiny:** The ratings of the RIN battlewagon HMIS “Talwar”, docked at Bombay, went on strike on 18 February 1946 over the problems of bad food and adverse living conditions.
- **Other demands of mutineers include:** release of soldiers who had fought in the Azad Hind Fauj or the Indian National Army wanted the trial of these soldiers to be stopped, and demanded that they be acquitted asked for the withdrawal of Indian troops from Indonesia and Egypt

refused to fight against people elsewhere in the world who were fighting for freedom The ratings went all-out to urge the people of Bombay to rise in support of their revolt – the greatest in the naval history – spreading to 78 ships and 22 units all along the Indian coastline.

- In response to their call, many processions were taken out in Bombay, Karachi, Kolkata and alternative places within the subsequent days.
- ArunaAsaf Ali, MinooMasani and Jayaprakash Narayan involved the ratings.
- Hundreds of Indian citizens were killed and thousands were hurt in the British military and police firing on the demonstrators.
- Sardar Patel managed to form the ratings surrender on 24 Feb 1946.
- However, they declared if their demands are not conceded they will go on strike again.

Topic 34. KARTAR SINGH SARABHA

Importance for Prelims: Modern History

The AAP government in punjab orders its offices to place up photos of its mascot Bhagat Singh and his hero Kartar Singh Sarabha.

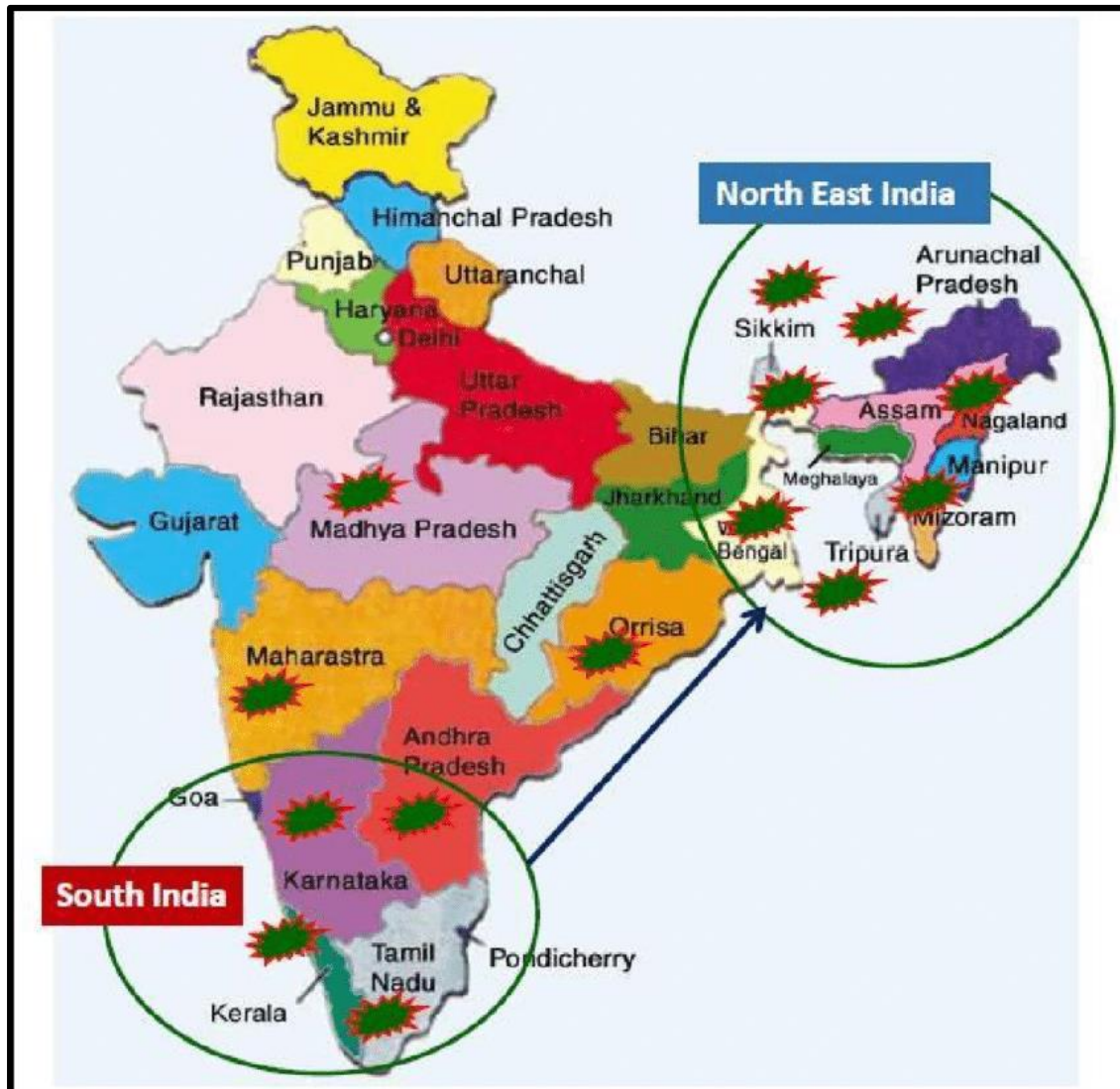
- **Kartar Singh Sarabha:** He was born in a highly educated family.
- He was brought up by his grandfather Badan Singh Grewal because of his parents' early death. one among his lecturers included the famous nationalist Beni Madhab Das, who inspired Subhas Chandra bose.
- In 1912, when he reached Berkeley, he came into contact with LalaHardayal, an acclaimed Sanskrit scholar, Sohan Singh Bhakna, a farmer, and Pandurang Sadashiv Khankhoje, an agricultural scientist who formed the Pacific Coast Hindustan Association in 1913.It was a precursor to the Ghadar Party, that was formed on July 15, 1913, with the express aim of over throwing the British government in India.
- The party set up a printing press in San Francisco, and brought out its first issue of The Ghadar in Urdu on November 1, 1913, followed by the Punjabi edition on December 13. Sarabha left his studies and became Ghadr Party's youngest founding member.
- He was one in all the foremost active fundraisers within the organisation, holding conferences in the rural areas where the farmers donated generously.
- Bhagat Singh's father Kishan Singh had given Sarabha Rs.1,000 for his movement.
- He worked shoulder to shoulder with the much older Ghadri "babas", who began to call him 'BalaJarnail (Boy general)'.
- With World War-I breaking out in July 1914, the Ghadris set to return to India together with Sarabha.
- He was often accompanied by fellow Ghadar party member Vishnu

Ganesh Pingle.

- By 1915, the British began to arrest Ghadar party members and Sarabha was also arrested and put on hearing what came to be known as the Lahore conspiracy case which resulted in the execution of 24 Ghadrists.
- The British Police said that he had two books, one was Indian Sociologist published by Shyamji Krishna Varma, who had set up “India House” in London, and the second, Speeches from the Dock, featuring Irish freedom fighters who were executed.
- He was hanged to death in Lahore in 1915 (hardly 19 years old).
- Bhagat Singh usually says that “Sarabha was his ustad.”

Topic 35. RUBBER CULTIVATION IN INDIA

Importance for Prelims: Geography



A plan by the Rubber Board to develop rubber plantations in an area of 2 lakh hectares across the seven northeastern States in a span of 5 years starting from 2021- twenty two has unleashed pent-up demand among the rubber nurseries within the State.

Rubber Plant:

- Many plant species produce natural rubber.
- Considerations of quality and economics, however, limit the supply of natural rubber to 1 species, specifically *hevea brasiliensis*.
- it's a native of the Amazon basin and introduced from there to countries

within the tropical belts of Asia and Africa throughout late 19th century.

- It can be termed as the most far reaching and successful of introductions in plant history resulting in plantations over 9.3 million hectares, 95 per cent of it across the globe in Asia.
- Heveabraziliensis, also known as the Para rubber tree after the Brazilian port of Para, is a quick growing, fairly sturdy, perennial tree of a height of 25 to 30 metres.
- It has a straight trunk and thick, somewhat soft, light brownish grey bark.
- The rubber tree may live for a hundred years or even more.
- But its economic life Duration in plantations, on general considerations is, only around thirty two years – seven years of immature phase and twenty five years of productive phase.
- Commercial cultivation of rubber in India was started in 1902.
- Rubber Growing Regions The rubber growing regions in India can be classified under two major zones, traditional and non- traditional on the basis of agro-climatic conditions.
- Traditional Regions Rubber cultivation in India has been traditionally confined to the hinterlands of the southwest coast, mainly in Kanyakumari District of Tamil Nadu and Kerala Non-traditional Regions These are hinterlands of coastal Karnataka, Goa, Konkan Region of Maharashtra, hinterlands of coastal Andhra Pradesh and Orissa, the northeastern states, Andaman and Nicobar Islands etc,
- where rubber is now being grown. Geographical conditions: Rubber is a tropical tree. It requires high temperature throughout the year – ranging between 20°-35°C or average monthly mean of 27°C. Less than 20°C temperature is detrimental. Rubber also requires heavy rainfall.
- The annual average rain of not less than two hundred cm is optimum.
- Rubber tree thrives well once the distribution of rain is uniformly high During the year.

- Deep, friable, well-drained soils are ideal as they promote root development, and acidic soils are also suitable.
- Thailand is the highest rubber producer within the world, which produced 31.29 per cent of world production.
- Indonesia is the second largest producer.
- In the world production of natural rubber, India ranks Fourth. traditional rubber-growing states comprising Kerala and Tamil Nadu account for Eighty one percent of production.

Topic 36. COBOTS RISING

Importance for Prelims: Science and Tech

Robots that work hand-in-hand with humans are set to transform businesses big and small alike in the near future.

What are Cobots?

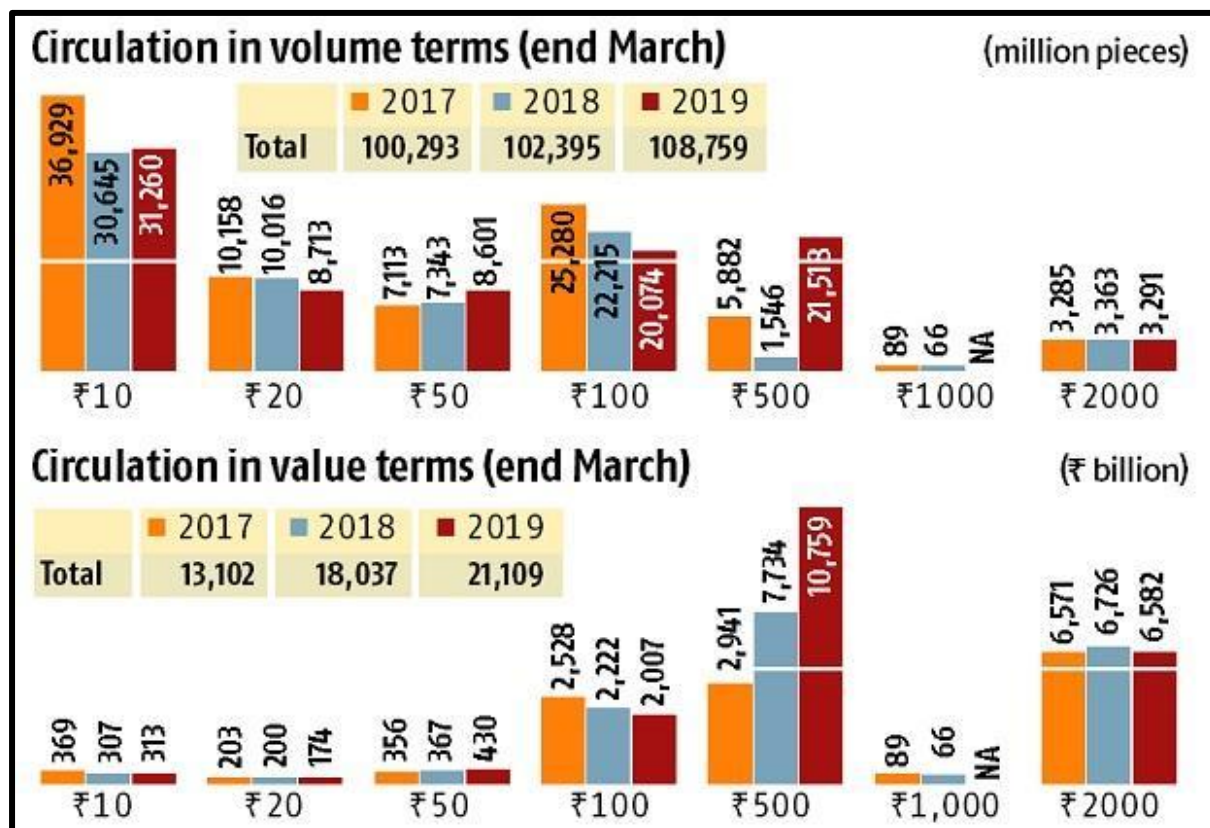
- A cobot is meant to work hand-in-hand with humans in a shared workspace.
 - this is in distinction with full-fledged robots that are designed to operate autonomously or with restricted guidance.
 - They support and relieve the human operator of his excess work.
 - In an auto factory, whereas the cobot tightens the bolts, the human employee places the tools in front of the cobot.
 - In a biscuit factory, the cobot would package the biscuits while the worker segregates burnt ones not fit for consumption.
 - In a small-scale business, the cobot is placed on the drilling job whereas the employee performs a high quality check.
 - Benefits Cobots are easy to use Safe – Cobots can be stopped by people with one arm.
 - Flexible and can be used just as a tool Bolstering productivity Easy to program with software and apps -one could programme a cobot in 40 minute Cobots are creating jobs and making small businesses competitive Can perform repetitive or dangerous jobs Applications Remote assistant for a shop floor operator Assembly and quality assurance Material handling Healthcare: Cobots are getting into healthcare.
 - They work as chefs in the U.S., creating burger patties.
 - Construction: In Singapore, cobots have been used to create building tiles. Painting: Cobots can also used to paint the sides of the buildings
- Limitations They often operate at a slower speed than standard

automation.

- several cobots have limited payload capability and reach, though a couple of models are available that address those areas.
- Cobots for some dangerous applications may require additional safety infrastructure such as caging or area scanners.

Topic 37. CURRENCY IN CIRCULATION

Importance for Prelims: Economy



- During the fiscal year so far, currency with the general public has gone up by 9.7 per cent, or Rs 2.66 lakh crore, from Rs 27.51 lakh crore in March 2021.
- Cash with the public has shot up 285 per cent from a low of Rs 7.82 lakh crore, recorded on December 23, 2016.
- Since demonetisation in 2016, currency in circulation has up steady per annum, with the CiC to gross domestic product ratio having surged to 14.5 per cent in 2020-21 from 8.7 percent in 2016- 17.

Cause?

- Even as the government is pushing for a “less-cash society” and with digital transactions clocking steady growth, cash remains the preferred mode of payment: The jump in cash with the
- Public was primarily driven by a rush for money by the general public in

2020-21 because the government declared a stringent lockdown to tackle the spread of the Covid pandemic.

- Absolute rise in currency in circulation to the gross domestic product ratio- higher than pre demonetisation level throughout festival seasons and elections, money demand remains high.
- A large number of merchants still rely upon money payments for end-to-end transactions.
- Moreover, 90 percent of e-commerce transactions use money as a mode of payment in tier four cities compared to fifty per cent in tier one cities.
- government bond auctions and fiscal packages that are intended to boost economic recovery The decline in bank deposits is also a pandemic-induced syndrome- Due to increased uncertainty side aspect shock, investors and customers feel safe keep cash with them.

Impact?

- If there's an excessive amount of money in circulation, both in terms of cash and credit, then the worth of legal tender decreases.
- This leads to “too much money chasing too few goods”, causing demand-pull inflation. Currency depreciation Currency in Circulation (CiC) RBI’s definition, currency with public is arrived at after deducting cash with banks from total currency in circulation (CiC).
- Currency in Circulation (CiC) refers to currency notes and coins issued by the central bank among a country that's physically used to conduct transactions between customers and businesses.
- Thus, Currency in circulation comprises of: currency notes and coins with the public cash in hand with banks.
- Monetary aggregates In the money supply statistics, central bank money is M0 while the commercial bank money is divided up into the M1 and M3 components. M2 and M4 components also include Post-Office

deposits as well. Reserve Money (M0):-Reserve money is also called central bank money, monetary base, base money, or high-powered money.

- In the most simple language, Reserve Money is Currency in Circulation plus Deposits of Commercial Banks with RBI.
- $M_0 = \text{Currency in circulation} + \text{Bankers' deposits with the RBI} + \text{'Other' deposits with the RBI}$
 $M_1 \text{ (Narrow Money)} = \text{Currency with the public} + \text{Deposit money of the public (Demand deposits with the banking system} + \text{'Other' deposits with the RBI)}$
- $M_2 = M_1 + \text{Savings deposits with Post office savings banks}$. $M_3 \text{ (Broad Money)} = M_1 + \text{Time deposits with the banking system}$.

Topic 38. FOREIGN ASSET INVESTIGATION UNIT (FAIU)

Importance for Prelims: Economy

- The Government's probe team, supervised by a Multi Agency group (MAG), has started action 1st on offshore trust-owning individuals and firms named in Pandora Papers.
- THE income tax Department and its newly created Foreign asset Investigation Unit (FAIU) have conducted 2 major search operations this month that officials said were connected to the global media leak.

Law?

- Indians are needed to declare any association with an offshore trust — be it as a Settlor, Trustee or Beneficiary — within the Foreign asset (FA) declaration section of their income tax returns.
- If they fail to do so, they're accountable for stiff penalties and fines under the 2015 Black money Act. Foreign asset Investigation Unit The Foreign asset Investigation Units (FAIUs) have been created in all the fourteen investigation directorates of the tax department situated in various parts of the country that are primarily tasked to undertake raids and seizures, and develop intelligence to see tax evasion done by various ways.
- it'd focus on cases of unrevealed assets held abroad by Indians and black money stashed abroad.
- The new units will also probe cases of Indian entities named in global tax document leaks just like the Panama Papers.
- The FAIUs are slated to function below the unified command of an officer within the rank of director-general of income tax.
- Further the pursuit of information analysis and initiating credible actions on the basis of those analyses would be the major function of the FAIUs.
- The FAIUs are below the authority of the jurisdictional director general of income tax (investigation) rank officer and its work is directly

monitored by the Central Board of Direct Taxes.

Topic 39. CRIMINAL PROCEDURE (IDENTIFICATION) BILL 2022

Importance for Prelims: Polity

- The government introduced the Criminal Procedure (Identification) Bill, 2022 in Lok Sabha on Monday. Features of the Bill Define “measurements”: To include finger impressions, palm-print and foot-print impressions, photographs, iris and retina scan, physical, biological samples and their analysis, etc.;
- Empower the National Crime Records Bureau (NCRB): To collect, store and preserve the record of measurements and for sharing, dissemination, destruction and disposal of records;
- **Empower a Magistrate:** To direct any person to give measurements; a Magistrate can also direct law enforcement officials to collect fingerprints,
- footprint impressions and images in the case of a specified category of convicted and non-convicted persons; Empower police or jail officers: to require measurements of any person who resists or refuses to give measurements. Authorises police to record signatures, handwriting or other behavioural attributes: Referred to in section 53 or section 53A of the Code of Criminal Procedure, 1973, for the purposes of analysis.

Who does the law apply to?

- **It proposes that the law apply to three categories of individuals:** Those convicted of an offence punishable under any law for the time being in force.
- Those involving “suspected criminals” or “habitual offenders” with a perspective to preventing crime.
- Those arrested in connection with an offence punishable under any law in force or detained below any preventive detention law.
- this could include the National Security Act or the public Safety Act.

- additionally, the Bill states that except for those suspect of offences committed against a woman or a baby, or for any offence punishable with imprisonment for a Duration that is not less than seven years, a person accused of any other offence can refuse to allow taking of his biological samples under the Bill.

How will this data be stored?

- NCRB can collect the record of measurements from the state Gov or Union Territory Administration concerned, or any other law-enforcement agencies, and will have the power to store, preserve and destroy the record of measurements at national level and share and disseminate such records with any law enforcement agency.
- The Bill says that even though such information is collected from the suspect, it can be destroyed from the records unless a magistrate in writing directs otherwise, after the suspect is free without trial or discharged or not guilty by a court.

What are the issues being raised about the Bill?

- **Lack of clarity:** several provisions are not defined within the Bill itself.
- For instance, the statement of objects says it provides for collection of measurements for “convicts and other persons” but the expression “other persons” is not defined.
- It does embrace those suspect of certain offences, however it can be argued that the police could use the law to expand it to others.
- **Conflict with Fundamental Rights:** The proposed law will be debated against Article 20(3) of the Constitution, which is a fundamental right that guarantees the right against self-incrimination.
- It states that “no person accused of any offence shall be compelled to be a witness against himself”.
- The Supreme Court’s landmark ruling in Puttaswamy v Union of India,

which recognised the right to privacy as a fundamental right, made it clear that any state action infringing on the right has to be backed by legislation.

- **Contentious provisions:** The Bill proposes to collect samples even from protesters engaged in political protests.

Topic 40. SEVEN DOCTRINES OF COOPERATIVES BY INTERNATIONAL COOPERATIVE ALLIANCE

Importance for Prelims: Agriculture



- Focus on cooperatives The International Cooperative Alliance unites, represents and serves cooperatives worldwide.
 - Founded in 1895, it's one of the oldest non-governmental organisations and one among the largest ones measured by the number of people represented: one billion cooperative members on the planet.
 - It is the apex body representing cooperatives, which are estimated to be around 3 million worldwide, providing a global voice and forum for knowledge, expertise and co-ordinated action for and about cooperatives
- Seven doctrines of cooperatives by International Cooperative Alliance

1. voluntary and open membership,
2. democratic member control,
3. member economic participation,
4. autonomy and independence,
5. education, training, and information,
6. cooperation among cooperatives,
7. concern for the community

Topic 41. ALUMINUM ORE MINING IN INDIA

Importance for Prelims: Geography



A committee of India's parliament has recently India is yet to completely explore over 80 % of its reserves of bauxite (an aluminium ore)

- At present aluminum is limited primarily to the electrical and electronic

sectors in India.

- Multiple initiatives of the Indian government, such as 100 percent rural electrification, Housing for All, Smart Cities, national infrastructure pipeline, renewable energy and scheme for electric vehicles will boost the consumption of the metal (aluminium) within the country.
- In its report on the development of aluminium and copper industries within the country, the committee observed that only 17 % (656 million tonnes) of bauxite is below 'proven and probable' category while the remaining 3,240 million tonnes are yet to be fully explored.
- There are a total of 3,896 million tonnes of bauxite resources across the country.
- According to the report, aluminium represents the second-largest metals market in the world after iron and steel.
- The total domestic production of aluminium metal during 2020-21 stayed at about the same level of 3.61 million tonnes (nearly 5.5 percent of global production) as in 2019-20.
- The import of aluminium, however, has remained "consistently high" because the panel noted that the total aluminium imports as well as scrap throughout FY 2020-21 stood at 2.06 million tonnes compared to 2.15 million tonnes within the previous fiscal year.
- India's primary aluminium industry consists of 3 major players – National aluminium Company limited (NALCO), Hindalco Industries and Vedanta Ltd. – that along have a complete production capacity of regarding four million tonnes.
- The committee asked the govt. to form extra efforts for overall improvement within the sector to make India independent for aluminium metal.
- to 2.15 million tonnes in the previous financial year.

- Bauxite: Bauxite is basically an aluminous rock containing hydrated aluminium oxide as the main constituent and iron oxide, silica and titania in varying proportions.
- Hydrated aluminium oxides present in the bauxite ore are diasporite and boehmite, $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$, (Al_2O_3 -85%; Al -45%); gibbsite or hydrargillite, $\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$ (Al_2O_3 -65.4%; Al -34.6%) , and bauxite (containing colloidal alumina hydrogel), $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ (Al_2O_3 -73.9%; Al -39.1%).
- colloidal alumina hydrogel), $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ (Al_2O_3 -73.9%; Al -39.1%).
- The iron oxide in bauxite ore is present as hematite or goethite, silica as clay and free quartz, and titania as leucosphen or rutile.
- bauxite is an essential vital a necessary ore of aluminium that is one in all the foremost important non ferrous metals utilized in the modern business.
- it's also an essential ore for refractory and Chemical industries.
- The country has abundant resources of bauxite which can meet both domestic and export demand Bauxite is a sedimentary rock with relatively high aluminium content.
- It is the world's main source of aluminium and gallium.
- Bauxite is primarily used to produce alumina through the Bayer process.
- It is an oxide of aluminium.
- It is not a specific mineral however a rock consisting primarily of hydrated aluminium oxides. bauxite appears dull in luster and is reddish-brown, white, or tan in color.
- Australia is that the largest producer of bauxite, followed by China.
- Aluminium is the third most abundant element in the Earth's crust, but does not occur as a metal naturally.

- the primary step in manufacturing aluminium is mining its ore bauxite.
- Bauxite is generally extracted by open cast mining, being almost always found near the surface Bauxite occurs mainly in tropical and sub-tropical areas, like Africa, the West Indies, South America, Australia & india there are some small deposits situated in Europe.

Topic 42. BOBLME PROJECT

Importance for Prelims: Environment

BAY OF BENGAL LARGE MARINE ECOSYSTEM (BOBLME) PROJECT



BIMSTEC MEETING

- The BOBLME Project includes Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand.
- The project aims to improve the lives of the coastal populations through better regional management of the Bay of Bengal environment and its fisheries.
- The BOBLME Project is funded principally by the Global Environmental Facility (GEF), Norway, the Swedish International Development Cooperation Agency, FAO, participating Governments and the National Oceanic and Atmosphere Administration (NOAA) with a total estimated budget of \$USD 31 million over five years.
- It is g launched by the FAO with funding from the Global Environmental Facility (GEF) and others.