

WEEKLY CURRENT AFFAIRS MAGAZINE for



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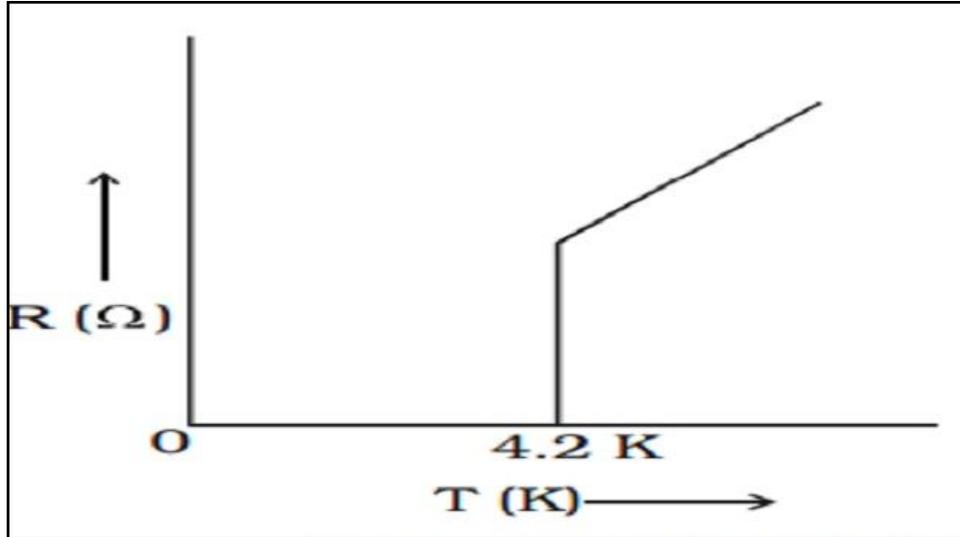
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Topic 1. A CLEAR PICTURE OF HOW MERCURY BECOMES A SUPERCONDUCTOR

Important for subject: Science and Technology



It was in 1911 that Dutch theorist and physicist, Heike Kamerlinghones found superconductivity within the mercury. He found that at extremely low temperatures, known as the threshold temperature, solid mercury does not pose any resistance to electric current.

Mercury:

- Mercury is a natural element that can be present in water, air and soil.
- In the atmosphere, they are released through natural processes, such as weathering of volcanic eruptions, weathering of rocks geothermal activity forests fires, etc.
- Mercury is also released by human activities.
- It is the only element that is liquid at room temperature.

The BCS Theory:

- Scientists later classified mercury as a conventional superconductor because its superconductivity could be explained by the concepts of Bardeen-Cooper Schrieffer (BCS) theory.
- In BCS superconductors, the vibrational energy generated through the grid of atoms causes electrons to form pairs to form so-called Cooper pairs.
- The Cooper pairs are able to move as water flowing through a river, with no resistance to their flow, at or below the threshold temperature.

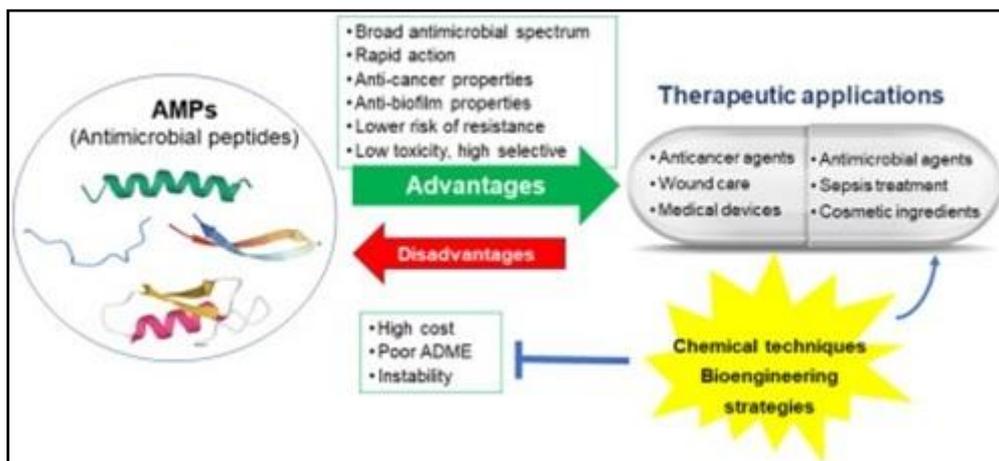
- But, researchers haven't completely understood the mechanisms that operate with mercury -the first superconductor.

What research has been done by researchers?

- The researchers employed "state-of-the-art theoretical and computational approaches" and discovered the following "all physical properties relevant for conventional superconductivity are anomalous in some respect" in mercury.
- In incorporating certain aspects that physicists have previously ignored The group's calculations gave an increased understanding of how superconductivity manifests in mercury.
- The researchers discovered that one electron in every pair of mercury was at an energy level higher than the opposite. This may have lowered Coulomb Repulsion (like the way that charges are repellent) between them, and facilitated superconductivity.
- The group has explained how mercury transforms into superconductor at temperatures when it is below the threshold temperature.

Topic 2. NEXT-GEN THERAPY. AMP UP THE FIGHT AGAINST HARDY PATHOGENS

Important for subject: Science and Technology



Researchers are using a less-known defence mechanism that is antimicrobial peptides used to combat resistance to antibiotics.

The problem with resistant microbes to drugs:

- Our body has its own defence mechanism to defend against invaders from microbes (pathogens like viruses and bacteria).
- This defence mechanism takes its form in the form of antibody they can be described as the proteins (long chain of amino acids)The reason for this is that the antibodies neutralize pathogens or, at the very least usually.
- This defence mechanism is enhanced by the use of man-made medicines such as antibiotics that destroy the bacteria (not virus).
- In time the microbes become resistant to medications.
- It is a fact that is an antimicrobial resistance (ADR) is now such a serious issue that it is now beginning to be recognized as a major cause of death.
- **Solutions:** Antimicrobial Peptides also known as AMPs
- Scientists are currently focusing on an area of defence that is not widely known that is known as 'antimicrobial proteins also known as AMPs.
- Peptides are short chains of amino acids.
- They are made by human beings, as also other living creatures.
- Today, approximately 5 000 AMPs are catalogued and identified.
- They are more sophisticated than pathogens invading the host.
- These peptides are efficient antimicrobials with broad spectrum which establish themselves as novel therapeutic agents and are able to destroy gram negative as well as gram positive bacteria as well as fungi, enclosed viruses as well as malignant or mutated cells.
- Contrary to antibiotics AMPs are efficient against viruses too.

What is the process by which AMPs function?

- The pathogens invade healthy cells and utilize the substances to reproduce, eventually destroying the cells involved in the process.
- AMPs connect to cell membranes of bacteria and virus , and block them from getting into healthy cells.
- The reason for this is that the cells of pathogens have negative charges which is in contrast to
- AMPs have a positive charge the attraction between different charges allows AMPs to adhere to membranes.

- The problem is with the AMPs
- The issue is how to make AMPs.
- The possibility exists to chemically synthesize AMPs. Another alternative is to utilize the DNA of organisms and get it to make Peptides.
- However, both take time, are expensive, and have no guarantee of results.

Designers' AMPs:

- Scientists have developed a new method dubbed the "cell-free protein synthesis" (CFPS), which involves in-vitro transcription (making DNA RNA) and translation (making the peptides using DNA). Also, the peptides are produced outside of living cells.
- This technique can assist in overcoming possible toxic effects on cells and provide a possibility of the rapid production of thousands of the peptides by using linear DNA parallel.

Scope of AMPs:

- There isn't an AMP product on the market today.
- In the year 2019 The Indian Institute of Science, Bengaluru and MS Ramaiah Medical College came up with a peptide called Omega76, that fights the ESKAPE family of bacteria, however there has been no advancement since then.

Topic 3. MICROSOFT TO INVEST IN OPEN AI: A CLOSER LOOK AT THE COMPANY BEHIND CHATGPT AND DALL-E

Important for subject: Science and Technology



Microsoft discussing plans about a plan to put \$10 billion in AI research giant Open AI, which could increase its value to \$29 billion.

- Recently, Open AI has announced the launch of its AI chatbot which can give human-like answers to user inquiries known as Chat GPT.

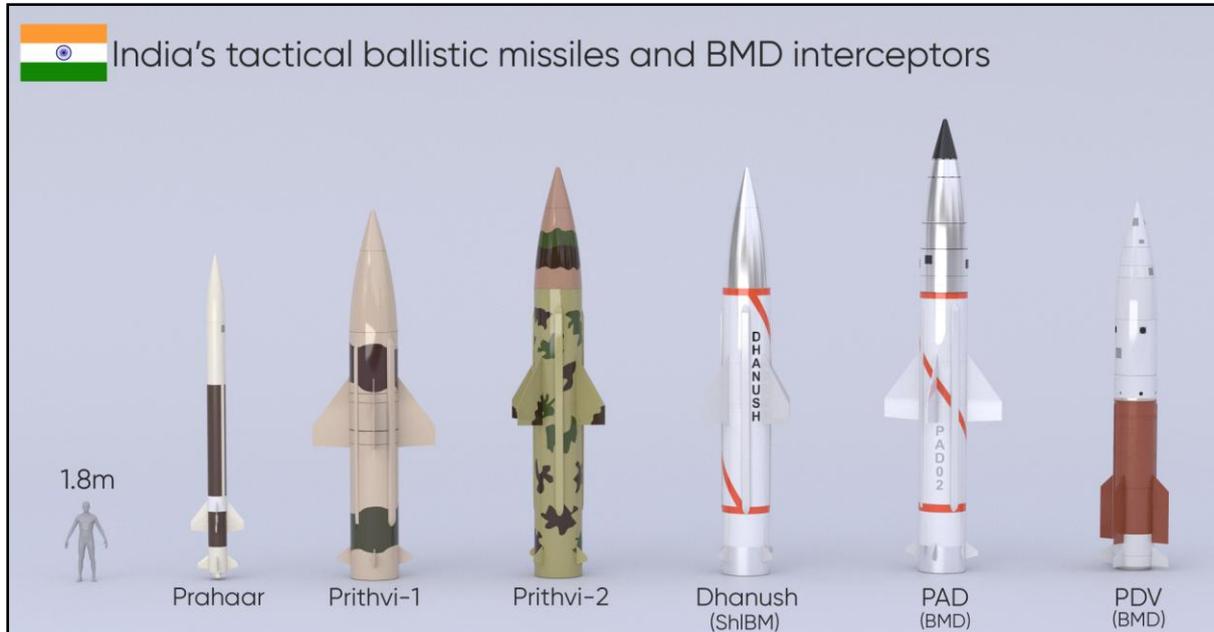
Open AI:

- Open AI is an artificial intelligence (AI) research lab comprised of the for-profit company Open AI LP and its parent company Open AI Inc., a not-for-profit Open AI Inc.
- The company is involved in research and development in the area of AI with the intention of encouraging and developing human-friendly AI to a degree that will benefit humanity at large.
- The company was created by San Francisco in late 2015 by Sam Altman, Elon Musk, and others.
- Open AI is headquartered in its headquarters in the Pioneer Building in Mission District, San Francisco.
- Tesla has now a non profit as of 2018. Elon Musk left from Tesla in the year the year 2018 to be clear of a possible conflict of conflict of interest with Tesla.
- Chat GPT:
- The Open AI has developed Chat GPT Chat GPT is an AI chatbot capable of providing human-like responses to user questions.
- It is built on GPT's 3.5 series of models for learning languages (LLM).
- GPT refers to Generative Pre-trained Transformer 3 and is a computer-generated language model that relies on techniques of deep learning to create human-like language in response to inputs.
- Chat GPT will answer any follow-up questions. It can also admit its mistakes, contest false premises, and deny unsuitable requests.
- It is currently accessible to everyone.
- Chat GPT has been taught to reject requests that are inappropriate that are considered illegal.
- Chat GPT can write fiction, but not like humans. Chatbots that are powered by

Google include La MDA.

Topic 4. PRITHVI- II TACTICAL BALLISTIC MISSILE TEST SUCCESSFULLY

Important for subject: Science and Technology



India has successfully conducted a test launch of the tactical ballistic missile Prithvi-2 at Chandipur, the Integrated Test Range, Chandipur near along the Odisha coast.

- The missile pounded the target with high precision.
- The launch of the user training program was successful in validating the technical and operational aspects of the weapon.
- Sour-Range Ballistic Missile (SRBM) Prithvi- II developed by the Defence Research and Development Organization (DRDO).
- The program was developed within an agreement with the Integrated Guided Missile Development Program (IGMDP).
- It is a part of the Indian Strategic Forces Command.

Features that are important:

- Indigenously designed Surface-toSurface Missile, Short-Range Ballistic Missile (SRBM) The Prithvi-II is an in-house developed Surface-to-Surface Missile Short-Range Missile (SRBM) and is able to cover an estimated distance of 250 kilometers to 350km.

- It can carry a single-tonne payload.

High level of accuracy:

- PrithviII is proven technology and can hit targets from distances of up to 5,000 km with great accuracy.
- An integral part of India's nuclear deterrence
- The Prithvi-II system is well-established and is an integral component Indian nuclear defense.

Lighter in weight:

- The test of the Agni-5 ballistic missile weighs less by weight than its earlier missile. Variants of Prithvi Missile:
- The Prithvi missile project was a way of developing three different variants to be used in India's Indian Army, Indian Air Force and the Indian Navy.

The project's initial framework for the Integrated Guided Missile Development Program outlines the various variants in the following way:

- The Prithvi I (SS-150) - Army version (150 km (93 miles) range) with an payload of 1,000kg (2,200 pounds))
- The Prithvi II (SS-250) - Air Force version (350 km (220 miles) range) with an payload of 500tkg (1,100 pounds))
- Prthvi III (SS-350) - Naval version (350 km (220 miles) range) with the payload of 1,000 kg (2,200 lbs))
- Integrated Guided Missile Development Programme (IGMDP):
- The Integrated Guided Missile Development Programme (IGMDP) was developed by Dr. A.P.J. Abdul Kalam.

It was officially initiated in 1982-83 by Indian Government which saw the initiatives of

- The Prithvi (Short Range Surface to Surface Missile)
- Trishul (short-range surface-to-air missile)
- Aakash (Medium Range Surface to Air Missile)

- Nag (Third generation anti-tank missile)
- Agni-I (Agni missile later dissociated from the IGMDP owing to its strategic significance)

Topic 5. A NEW METHOD OF DEPOSITION OF NICKEL ALLOY COATINGS

Important for subject: Science and Technology

A new method for the depositing Nickel alloy coatings over high-performance material in engineering applications can be used to replace hazardous chrome coatings.

- The coatings produced are extremely resistant to corrosion and are useful for the plasticware industry.
- With the ever-growing demand for high-performance materials for engineering applications nano-crystalline coatings could be able to respond to the the replacement of environmentally hazardous chrome coatings.
- Chrome coatings are used in the bottling of plastic to prolong the service life of die-casting parts.
- Chrome plating, however, is a toxic procedure, and the strict standard permissible limits of exposure (PEL) for the hexavalent chromium that is toxic and its components has to be adhered to in any workplace that uses chrome plating. The process of adhering to this standard is a problem for researchers.
- The effect of pulsed currents was utilized for nano-crystalline coatings in which an instantaneous high density of current with very little duration resulted in a rapid number of nuclear nuclei.
- Contrary to traditional direct current plating, these coatings were almost impermeable crack-free and had minimal uptake of hydrogen.
- The application of pulsed current led to the nano-crystallization of nickel-tungsten alloys that have extremely toughness (700-1200 HV) and wear resistance.
- The coatings had a high degree of resistant to corrosion and can stand up to 700 hours of spraying salt.
- The coatings developed by ARCI can withstand temperatures as high as to 500degC with no thermal softening. They can also extend the longevity of the components of the die by two times the amount of conventional chrome plating.
- They have been successfully applied to die-casting components that are used in the

bottling manufacturing, in which the temperature at the die's interface could exceed 280 degC.

- With a variety of applications in defense, automotive and aerospace industries for such coatings. The technology is now ready to be used to replace conventional chrome plating.

The impact from Chromium-based pollution

- Significantly affecting our environment and natural resources, particularly soil and water.
- Exposure to excessive amounts can lead to more accumulation of the substance in the tissues of animals and humans that can cause negative health consequences and toxic adverse effects such as chromium skin exposure. includes dermatitis, hypersensitivity reactions as well as eczema and damage to the liver or kidneys.
- Numerous studies have demonstrated that chromium is a poisonous element that negatively impacts metabolism in plants, which can hinder the growth and yield of crops, and lowers the quality of grains and vegetables and seeds germination, decrease in yield, growth as well as inhibition of enzymes. It may alter genetic material and lead to cancer.

Topic 6. VSHORAD MISSILE SYSTEM

Important for subject: Science and Technology

The Defence Acquisition Council (DAC) accorded Acceptance of Need (AoN) to procure the Very Short Range Air Defence System or VSHORAD (IR Homing) missile system created and developed in collaboration with the Defence Research and Development Organisation (DRDO), in addition to other weapon systems designed to be used by the Army and Navy at a cost of the sum of Rs 4, 276 crore.

- India is in talks with Russia for the purchase of Igla S air-defense missiles under the VSHORAD program in an attempt to take over Igla-M systems. Russian Igla-M missiles which were used by the Army.

Homing in IR:

- Infrared Homing is an passive system for guiding weapons that uses infrared (IR)

light emission from an object to detect and follow it in a seamless manner.

- Missiles that employ infrared searching are commonly described as "heat-seekers" since infrared is intensely radiated through hot body.

About Igla-S Systems:

- It is a man-portable air defense system (MANPADS) created by Russia.
- It's a Very Short Range Air Defence System (VSHORAD) weapon.
- "Igla-S" man-portable air defense system was designed to take on all kinds of visible fixed or flying aircrafts with rotary wings on head-on and in pursuit, and also small aerial targets such as cruise missiles that are constantly firing in the presence of thermal or background noise.
- It is designed to implement the concept in "shoot-and-forget", the highest level of survival and concealment in combat.
- It was developed to counter flying aircraft that are low in altitude, because it serves as the final protection against objects that fly within an air defense system that is multi-layered.
- It is Igla-S is capable of engaging any type of aircrafts and helicopters and also identifying air targets like cruise missiles as well as UAVs as well as head-on and receding at any time of the day, in contrast to background noise or the decoy flashes (jamming).

What's this VSHORAD the missile's system?

- VSHORADS is a man-portable Air Defence System (MANPAD).
- Created and developed in-house by the DRDO's Research Centre Imarat (RCI), Hyderabad, in collaboration with other DRDO laboratories as well as Indian Industry Partners. The aim is to take out the aerial threats of low altitude at small distances.
- Producer: Adani defence and aerospace.
- The missile is driven by a double-thrust motor and is equipped with a variety of innovative technologies, including the miniature Reaction Control System (RCS) and integrated Avionics, which were successfully demonstrated during tests this year.
- The DRDO has created the missile and its launcher that allows for easy portability.

Specifications:

- Weight 20.5 kg (45 lbs)
- Length 2.00 metres (6 ft 7 in)
- Engine Dual-thrust rocket motor
- Propellant Solid propellant
- Operating range 250m (820 feet) up to 6 km (20,000 feet)
- Altitude of flight 3500 m (11500 feet)
- Maximum speed Mach 1.5

Man-portable air defense systems (MANPADS) How can it aid India?

- As it is lightweight and man-portable when compared with other missiles in the armoury of the Army it can be used in the mountains near the LAC in a matter of minutes.

"Acceptance of Necessity" (AoN):

- AoN is the initial stage in the capital procurement process for defence.
- There aren't the majority of AoNs concluded must be incorporated into an order final.

Defence Acquisition Council:

- The Defence Acquisition Council is the top decision-making authority within the Defence Ministry for deciding on new policies and capital purchase plans for the three service areas (Army, Navy and Air Force) as well as the Indian Coast Guard.
- The Minister of Defence is the Chairman of the Council.
- It was established following its creation, following Group of Ministers' recommendations on "Reforming the National Security System", in 2001, after the War of Independence (1999).

Topic 7. ROMAN SECRET TO DURABLE ARCHITECTURE? SELF-HEALING CONCRETE

Important for subject: Science & Technology

Roman architecture:

- For a long time, scientists believed that the basis for the old concrete's strength was in one element: Pozzolanic material, like volcanic ash that is found in the region of Pozzuoli in the Bay of Naples.

Recent results:

- In a closer inspection, scientists discovered that the old samples also contained small, distinctive millimetre-scale white minerals that have long been recognized as a common part of Roman concretes.
- These white pieces, often referred to as "lime clasts," originate from lime, which is a vital component of the old concrete mix.
- The casts of relict lime were initially thought to be an indication of poor mixing practices or poor quality raw materials.
- At a close inspection they discovered that the Romans used an hot mixing technique and employed quicklime combination with, or in lieu of slaked lime in making concrete.
- Hot mixing was one of the factors that led to the durable nature.

What exactly is Self healing in concrete?

- It is able to produce limestone that will repair cracks that are visible on the concrete's surface structures.
- Bacterial or self-healing concrete is used to fill the cracks in the structure with the aid of bacteria that react (produce limestone) within the concrete following the concrete has cured.

Hot mixing process:

- In the heat mixing process limestone clasts formed the brittle structure, which is an active calcium source.

- The calcium will travel throughout the lime cement clasts and react with water, and then quickly fill in any cracks.
- Schematic for the self-healing mechanism proposed in the ancient Roman mortars
- This acid-saturated calcium solution can be able to react with the pozzolanic material to enhance the strength of the composite material.
- The reactions occur in a natural way and instantly fill in the cracks, before they expand.

Topic 8. KERALA ESTABLISHES WELFARE BOARD FOR WORKERS

Important for subject: Polity

Kerala created an social welfare board for employees employed by employment-related guarantee programs in Kerala.

- At a minimum, 26.71 lakh laborers in the Mahatma Gandhi National Rural Employment Guarantee program and 2.5 lakh employees in the Ayyankali Urban Employment Guarantee Scheme will benefit from the services of the newly-formed welfare board.
- Kerala was the first state in India to establish an welfare board for people who are beneficiaries of employment guarantee schemes across the country.

Benefits provided by welfare board

1. The members on the board receive benefits, such as pensions, when they reach 60 years of old.
2. Aged workers of 18-55 are eligible to be a part of this welfare scheme. A monthly contribution of Rs 50 must be paid.
3. If the beneficiary passes away, pension will be disbursed to their relatives.
4. Family financial aid when the beneficiary dies because of accident or illness
5. Financial assistance for those who are afflicted by a severe illnesses.
6. Financial assistance for women in marriages, maternity benefit and assistance for the schooling of kids.

Ayyankali Urban Employment Guarantee Scheme

- Ayyankali Urban employment Guarantee Scheme(AUEGS) which was launched in

the year 2010, is aimed to increase the security of life of urban dwellers by ensuring 100 days of pay in the course of a fiscal year for a household with adult members who offer to help with manual tasks.

Topic 9. SOCIAL AND PERFORMANCE AUDIT AUTHORITY (SPAA)

Important for subject: Polity

In an unprecedented move, Rajasthan government has set the Social and Performance Audit Authority (SPAA) to ensure accountability in the delivery of the government's schemes and programs.

- Naresh Kumar Thakral (Secretary Finance (Expenditure) who was made as the Authority's Commissioner stated that under the SPAA the government will be audited. programs will be carried out on two levels including performance and social.
- Social audits will be conducted similar to social audits in MGNREGA.
- To conduct an audit of performance, SPAA will engage personnel from the Valuation Wing within the Planning Department as well as the Department of Treasuries and Accounts.

About Social Audit

- Social Audit is the review of a scheme by both the Government and the public particularly by those who are impacted from the plan or the beneficiaries.
- Social audit differs from financial audits, which require examining and evaluating documents associated with financial transactions in an organisation to give the most accurate picture of earnings, losses as well as financial security.

Social Audit and MGNREGA:

- In accordance with section 17 under the MGNREGA All work performed within the framework of the program must be subject to an audit of the social aspect.
- Each Social Audit Unit is entitled to funds that equal 0.5 percent of the MNREGA expense incurred by State in the preceding year.
- The audit includes quality inspections of the infrastructure built under the MNREGA and financial misappropriation of wages, and examining for any deviations from the procedures.

- The report titled "Social audit calendar vs. audits completed" was recently released from the Union Rural Development Ministry (MoRD) states that only 14.29 percent of scheduled audits have been completed by 2021-2022.
- The Ministry also stated that the failure to conduct an audit of the social aspects in the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) by the states could result in a reversal, which could include the taking funds away.
- But, it is the Centre who is responsible for the administrative costs associated with Social Audit Units. Social Audit Units, and the lengthy delay in transfer of funds has led to some of these cash-strapped units virtually inactive.

Topic 10. KEY LADAKH OUTFITS REJECT CENTRE'S PLAN

Important for subject: polity

Two of Ladakh's top political bodies including the Leh Apex Body (LAB) and the Kargil Democratic Alliance (KDA) On Saturday, the two bodies voted to reject The Union Home Ministry's highly powerful committee to safeguard land and jobs for the residents in the Union Territory.

- The bodies have reaffirmed their position on four main aspects that include the granting of Statehood and an exemption under the sixth Schedule of Constitution.

Committee with high power for Ladakh

- The Ministry of Home Affairs (MHA) in India has created an High Powered Committee (HPC) for the purpose of addressing concerns related to the protection of Ladakh's culture and language, land and opportunities for employment.
- A 17-member committee of 17 members has been established under the chairmanship of the Secretary of State, home affairs Nityanand Rai.
- The committee was formed with the aim of promoting the development of employment and inclusive growth within the region as well by giving members of the Ladakh Autonomous Hill Development Councils (LAHDCs) of Leh and Kargil.
- Its mandate is to consider ways to safeguard Ladakh's distinctive culture and language, as well as to make sure that the region's natural resources and opportunities for employment are safeguarded to the benefit of the people of the region.

Sixth Schedule

- The sixth Schedule in the constitution is comprised of the administration of tribal regions within Assam, Meghalaya, Tripura and Mizoram as per the Article 244 of the Indian Constitution.
- The law was approved in the Constituent Assembly in 1949, it aims to safeguard the rights of the tribal population through the creation of Autonomous District Councils (ADC).
- ADCs are bodies that represent districts that the Constitution has granted different levels of autonomy to legislative bodies of state.
- These states' Governors have the power to alter boundaries of tribal regions.
- In simple terms it is possible to select to include or exclude any region, expand or reduce the boundaries, and join multiple autonomous areas into one.
- They may also change or modify name of regions that are autonomous, without separate law.
- Alongside ADCs In addition to ADCs, in addition to ADCs Sixth Schedule also provides for distinct Regional Councils for each region that is designated as the autonomous regions.
- There are 10 regions within the Northeast which are recognized as autonomous districts. Three of them are located in Assam, Meghalaya and Mizoram and another in Tripura.
- These regions are known as districts councils of (name of district) and regional council of (name of the region).
- Each autonomous district or regional council is comprised of no more than thirty members, of whom four are chosen by the governor, and the remaining are elected through elections.
- They all remain in office for a period which is 5 years.
- The Bodoland Territorial Council, however is a unique instance in that it could have up to 46 members.

Topic 11. GOVERNOR'S ADDRESS TO THE STATE LEGISLATURE

Important for subject: Polity

The Governor of Tamil Nadu, R N Ravi skimmed certain sections of of his usual address to the state legislature.

- The chief minister of the State, M K Stalin, made a motion requesting that only the printed version of the speech in Tamil to be recorded in the state's the records.
- Governor R N Ravi reacted to this in a unique way by organising a walkout from the House in protest prior to the time the national anthem played.

Constitutional Background:

- The Constitution grants to the president (Article 87) and Governor (Article 176) the authority to address a session in the legislative.
- The special power comes in relation to two instances.
- The first one is to discuss the first session in a fresh legislature following the general election.
- The second one is to discuss the first session of the legislature every year.
- Commonly known as the Governor's or President's Address and are constitutionally required.
- A new or continuing legislature can't begin without meeting this condition.

Governor's Address to the State Legislature:

- Article 176 in the Constitution- The Governor shall address the Legislative Assembly at the start of the first session following every general election to Legislative Assembly and at the beginning of the first session in each calendar session, Governor is required to speak to at the Legislative Assembly and inform the Legislature about the reason for its summons.
- If states with an Legislative Council, both Houses joined together.
- The provisions are in the rules that regulate procedures of either House or the other House to allocate time for the discussion of issues mentioned in the address.

Do you have parallels with other nations?

- Within the United States, it is known as "the "State of the Union".

- The United Kingdom, it is known as "Queen's" Speech which is the main event to commemorate the official beginning of the year in parliament.
- The President's address in India is similar to that of the British system.

What is the Address & What is the content of the Address?

- The President's/Governor's speech follows the convention of the British system, where it contains legislative and policy proposals that the government intends to initiate.
- The speech also reviews the achievements of the government in the prior years.
- The speeches are compiled through the aggregation of inputs from various agencies within the federal government.

Does the address come from the President/Governor himself?

- The Constitution in its Article 77 as well as Article 163 in particular, requires the Governor and President to act with the help and recommendations from the Council of Ministers of the Union and the state governments on a wide range of matters.
- Thus, the speech the Governor or President reads to the legislature represents an official position of the government, and is made by it.

If the President/Governor isn't happy with the words in the statement, is he/she legally bound to take it up?

- The Governor or the President is not able to refuse to fulfill the constitutional obligation of giving speech to legislative body.
- There are situations where they diverge from the language of the speech drafted by government officials.
- As of now, there has so far, no cases of the the President taking this action.
- However, there are several occasions when the Governor omitted a part of the address addressed to the Assembly.

Does it infringe the Constitution?

- Many experts believe it was the intent by the Constitution-makers to ensure that the Governor's address would be written through members of the Council of Ministers and the Governor would then read the speech.

- Therefore they're of the view that , if the governor breaks this law and eliminates any part of the speech under the cover of discretionary authority the action could be legal in a strict legalist perspective.
- But, it will be a blow to the foundations of the principles of the government through a parliamentary system.

Topic 12. OPPOSITE PARTIES FLAY EC'S REMOTE VOTING PLAN

Important for subject: Polity

At a session in the Parliamentary Standing Committee on Law and Justice at the time, parties challenged the logic of the EC in the remote voting scheme that will increase the proportion of people voting.

Remote Voting Plan

- It allows voters to cast their votes from cities across the world without having to go to the polling location of their locality.
- The voters must arrive at a specific location within an agreed upon time in order to access this facility.
- The IIT-Madras is working on an application that allows two-way remote casting votes in a monitored space by using blockchain technology.
- It will require the identification of voters and authorization on the Electoral Registration Officer Network (ERO Net) by using biometric information and web cameras to authenticate as well as the generation of an electronic ballot using blockchain that could be converted into a vote when the hash code is generated upon the execution.
- Remote votes encrypted are then validated during the pre-counting phase to confirm that they've not been altered, decrypted, or tampered or altered.

Perspective from the international perspective:

- Countries like countries like the United States, Argentina, Russia, Estonia, Thailand and South Korea in the past have utilized blockchain technology to conduct voting procedures for their citizens, and have plenty of positives and negatives resulting from.
- Voting by post or ballots

- It's also known as Electronically Transmitted Postal Ballot Papers (ETPB) and, under this, electronic ballot paper, ballots are distributed to voters and then returned to election officials via postal mail.

Who is eligible to use this service?

- Armed forces personnel such as those of the Army, Navy and Air Force as well as members of the police force armed of the state (serving outside of the state) and government employees who are posted in other countries India along with their families can vote only through post.
- In prison, although prisoners are not permitted to vote, individuals in protective detention may cast votes by mail ballots.
- The special voters, such as presidents of India Vice President, President of India, Governors Ministers of the Union Cabinet, members of the Speaker's House and officials of the government who are on duty at the polls can cast their votes by postal ballot.
- Recently, a brand new category called 'absentee voters' was created in which they may also choose postal voting.
- They are employed in services that are essential and are unable to cast a vote due to their employment conditions.
- At present, officials from The Delhi Metro Rail Corporation, Northern Railway (Passenger and Freight) Services, and media personnel are being notified as absentee voter.

Proxy voting

- In proxy voting, an registered voter is able to transfer his vote to the representative.
- The idea was first introduced in 2003 in order to hold election to Lok Sabha as well as the Assemblies however, it was only on a small size.
- Only an "classified service voter" which comprises those who are members of the Armed forces BSF, CRPF, CISF, General Engineering Reserve Force and Border Road Organisation is allowed to designate a proxy who can cast a vote on behalf when he is not there.

Topic 13. GOVERNOR VS GOVERNMENT

Important for subject: Polity

In the ongoing battle with the government in Tamil Nadu, Governor skimmed a few lines, like the Dravidian model of governance hereafter when the chief minister interrupted his speech, expressing regret over the governor's decision to omit certain sections of the speech.

- Governor then left the Assembly after the Chief Minister introduced the resolution which said that only the official speech of the government will be recorded.

Address of the Governor:

- The Governor is scheduled to address the inaugural Assembly session in the state each year. The same is the case for at the beginning of the new Legislature following the general election, in accordance with Articles 175 and 176 in the Constitution.
- The Governor's speech is written by the state's governor. The state's governors prepare the Governor's address. The Governor's address is prepared by the state governor.
- The report provides a summary of the government's actions and achievements in the past year, as well as its plans for the session and legislative and policy proposals that the government is planning to implement in the next year.
- It is created and then submitted through the government of the state to the Governor prior to its submission. It is the standard procedure that the Governor take it in without a smidgen of deviation.
- In accordance with the settled British conventions since 1829 the governor is required to take the time to read the entire speech, as it is essentially the government's declaration on which the governor's office, just like monarchs, like the British monarch, does not have any obligation.
- Incidents in which the Governor changed his address
- Kerala's Governor in 2018 did not include sections of his speech that critiqued his Union government for subverting the fundamentals of federal cooperation.
- In 2017 the Tripura Governor omitted portions of his speech that were written in the State Government which was crucial to the union government.
- In 1969 in 1969, in 1969, the West Bengal Governor refused to read portions of the speech that was prepared by the government in power which was criticizing the Union

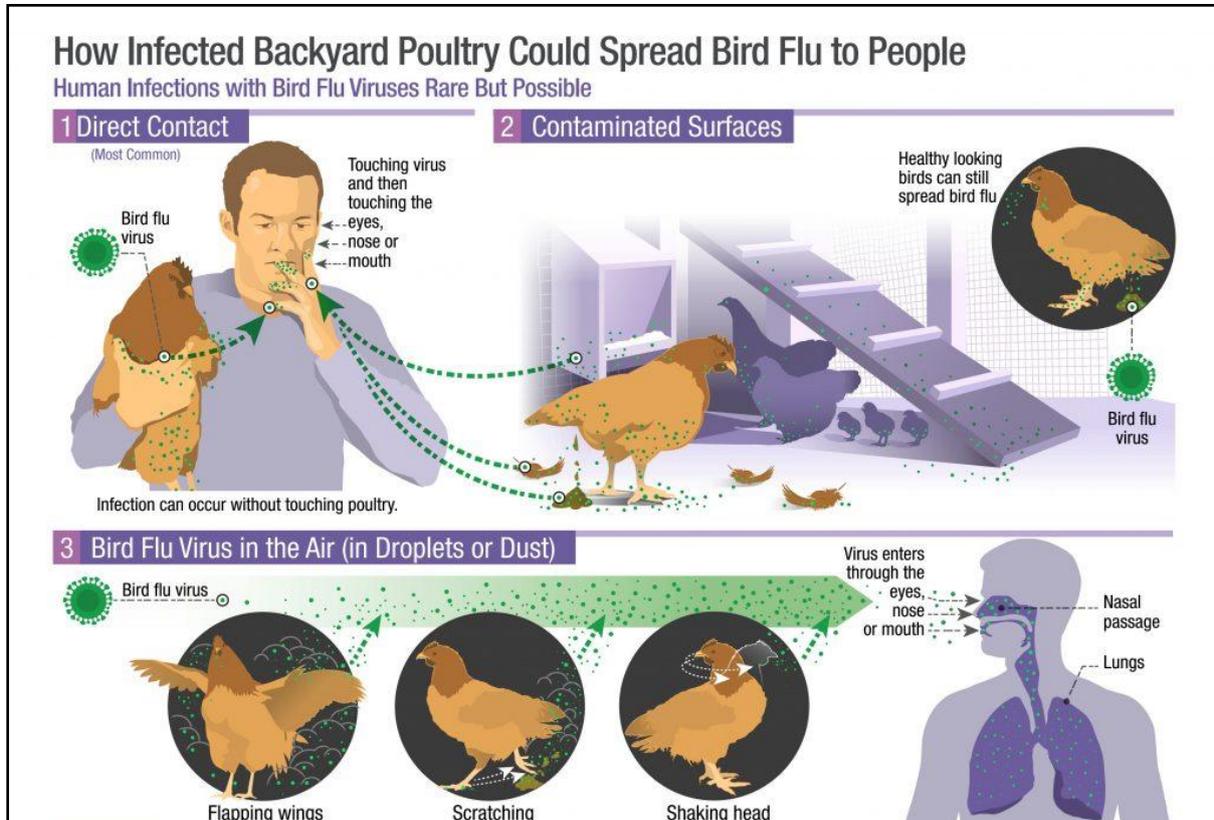
government.

Notice of the Court on Governor's right to alter an address

- Calcutta High Court in *AndulGafoor Habibullah and AndulGafoor Habibullah. Speaker West Bengal Assembly (1966)* was ruled that:
- The governor can't refuse to give his address or not fulfill his constitutional obligation.
- So, the address given under Article 176 is obligatory.
- However the HC determined that if the governor is unable to give his address as required by Article 176 and then walks out in the House after writing an address in the House it is merely an infraction, not illegal.
- This means that it is not a matter of dispute pursuant to Article 212 which guarantees that the legality of House proceedings is not questioned because of a simple mistakes in the process.
- In another case, the Calcutta HC in another incident declared that the governor has the power to remove or not read out irrelevant parts or parts that don't conform to the policies of the government.
- He could cut down irrelevant issues that are not related to the programs and policies by the legislative body of state and could be designed to deceive the legislature.

Topic 14. FREQUENT OUTBREAKS OF BIRD FLU IN KERALA REQUIRE DIAGNOSTIC STUDIES

Important for subject: Environment



The wetlands of Kerala, which comprise more than 80 percent of the ducks, are under threat because of outbreaks in bird flu.

- A majority include Ramsar sites that have a rich diversity.
- Ramsar sites require ongoing surveillance and epidemiological studies. Investigations are required to determine if contamination is mediated by soil or water and if there has been any changes in salinity or pH of the water or soil over time.
- An Ramsar site is one of the wetland that is of international significance as defined by the Ramsar Convention, which is also called the "Convention on Wetlands"-an intergovernmental treaty on environmental protection that was signed by UNESCO in the year 1971. It is named in honor of Ramsar, the town of Ramsar situated in Iran in which it was where the treaty was signed in the year 1971.
- Ramsar acknowledgement is recognition of wetlands throughout the world. These are important to the world in particular if they provide habitat for waterfowl (about 180

bird species).

Ramsar Sites in Kerala



Vembanad Lake

- Vembanad Lake is also known as Vembanad Kayal, Vembanad Kol, Punnamada Lake (in Kuttanad) and Kochi Lake (in Kochi).
- It covers several districts of Kerala and covering an area that is more than 2033.02 km².
- The lake's origins are in four rivers: Meenachil, Achankovil, Pampa and Manimala
- This is separated from Arabian Sea by a narrow barrier island. It is a popular stretch of backwater in Kerala.
- Vallam Kali (i.e Nehru Trophy Boat Race) is an Snake Boat Race held every year during August, which is in Vembanad Lake.
- In 2002, it was added on the list of wetlands with international significance according to the Ramsar Convention.
- It is the second largest Ramsar location in India just behind it was the Sundarbans situated in West Bengal.

- The Government of India has identified the Vembanad wetland in the National Wetlands Conservation Programme.
- The Kumarakom Bird Sanctuary is located along the east shore of the lake.
- In the year 2019, Willingdon Island, a port on the sea within the town of Kochi was created by Vembanad Lake.
- The most striking characteristics of this lake is the 1252-m long saltwater barrier Thanneermukkom It was constructed to prevent the infiltration of saltwater into Kuttanad.

Ashtamudi Lake

- Ashtamudi Lake or Ashtamudi Kayal located situated in the Kollam District of the Indian state of Kerala is the most frequented lake and backwater in the state.
- It is home to an unique ecosystem of wetland and an enormous palm-shaped (also called octopus-shaped) water body, which is second only in dimensions with the Vembanad estuary ecosystem in the state.
- Ashtamudi is a synonym for "eight braids" within the regional Malayalam language.
- The name comes from the lake's terrain, which includes many branches.
- It is known as the entrance towards the backwaters and backwaters of Kerala and is well-known for its houseboats and backwater resorts.
- Ashtamudi Wetland was included in the list of wetlands that are of international significance according to the Ramsar Convention for the conservation and sustainable use of wetlands.

Sasthamcotta Lake

- Sasthamcotta Lake is the largest freshwater Lake in Kerala.
- The lake's name is derived from the old Sastha temple (a place of pilgrimage) situated on its banks.
- It caters to the water requirements of half a million residents in the Quilon district, and also offers fishing facilities.
- It is a designated wetland with international importance as per the Ramsar Convention since November 2002.

Topic 15. ROOTS CONNECT A MEGHALAYA VILLAGE

Important for subject: Environment

The Living Root Bridge:

- Living root bridges, also known as Jing Kieng are aerial bridges constructed using the weaving and manipulation of branches of the Indian rubber plant.
- Living root bridges functions similar to the suspension bridge created by guiding flexible root of the rubber tree (*Ficus elastica*) across a stream or river, permitting the roots to expand and become stronger over the course of time.
- They have served as connectors for many generations within Meghalaya, an Indian State of Meghalaya.
- Root bridges use the traditional knowledge of tribal tribes to help train those roots that belong to the Indian rubber plant(found abundantly throughout the region) to extend laterally over the bed of a stream, creating an ever-growing root bridge.
- It is between 15 to 250 feet and was built over the course of centuries.
- They are listed on the tentative list of the UNESCO's World Heritage sites.
- They are also now world-renowned tourist destinations. Two of the most well-known tourist destinations are

Riwai Root Bridge

- Umshiang Double Decker Bridge.
- There is no evidence to show that the Khasi community began their living roots bridge practice However, ecologists claim it is a sign of the symbiotic bond between humans and nature. A lot of bridges in the State are more than 100 years old.
- More than 70 live roots bridges (LRBs)thrive in the state's mountainous rainforests , which is one of the world's most wettest regions, proving an unbroken connection between pollinators, seeds dispersers, as well as indigenous communities.

Properties of Living Roots Bridge:

- They are home to three primary properties:
- They are elastic.
- The roots can easily be combined, and
- The plants thrive in rocky and rough soils.

- The process of creating an ever-growing root bridge:
- The structure of the bridge is constructed entirely from trees' branches, trunks as well as roots.
- The process starts with the placement of young, flexible aerial roots Ficus Elastica trees inside hollowed-out trees of the Areca Catechu tree (type of palm tree).
- The trunks supply essential nutrients and shield from the elements for the roots that are young and are also used as a guide for the roots.
- It is supported by the bamboo frame along with the whole structure.
- As you see the aerial roots grow in size and strength as they age, the Areca Catechu trunk sare no longer needed.
- Dead load of timber planks, stones leaves, soil, and stones is used to fill in gaps and weigh test the root structure that is living.
- Meghalaya's humid climate as well as pedestrian traffic on the bridge cause compaction of the soil and dead load.
- With the course of (15 up to 30 years) The root structure is sturdy enough to support a substantial loads without bamboo frames.
- In contrast to concrete bridges Living Root bridges become stronger and more resilient over time and with use.

Lessons from such tradition:

- Images like the Living Root bridges display the skillful craftsmanship of tribes from India and their self-reliant attitude toward living.
- Future generations will draw inspiration from these methods and are striving to embrace an eco-friendly future.

Ficus Trees:

- The key stonerole in the natural world.
- They keep the ecosystem together and help to increase biodiversity around them.
- They are welcoming to bats and birds (seed-dispersing animals) that eat their fruit.
- They stabilize the soil through their root system , and also keep landslides out of the way.
- Meghalaya Government Proposal Guidelines for Protection of Living Root Bridge:

- The foundation is scientifically-based methods and participation from the community.
- zone-based conservation and an approach to responsible development to regulate activities, such as tourism. For instance this zone proposed suggests the declaration of at least thirty meters away from the the core LRB construction to be a designated zone.
- Find out your genes for both trees and those pollinators (eg. the wasp pollinator in fig).
- Increase awareness for students and tourists about roots bridges.
- The guidelines also stress the importance of forming Village Cooperative Societies for inclusion of all stakeholders, providing an equitable model of profit-sharing, as well as ensuring sustainable livelihoods
- Local communities should be involved in monitoring the biodiversity of the LRB ecosystem.

Topic 16. PROSPERITY THROUGH PHILANTHROPY

Important for subject: Environment



Billionaires can increase the income of farmers by supplying solar trees for their farms.

Solar tree:

- A structure which incorporates solar energy technology in only one pillar, similar to the tree's trunk, is referred to as an Tree that is a Solar Tree. It may be a generator for

power or even a solar art.

Purpose of Solar Tree:

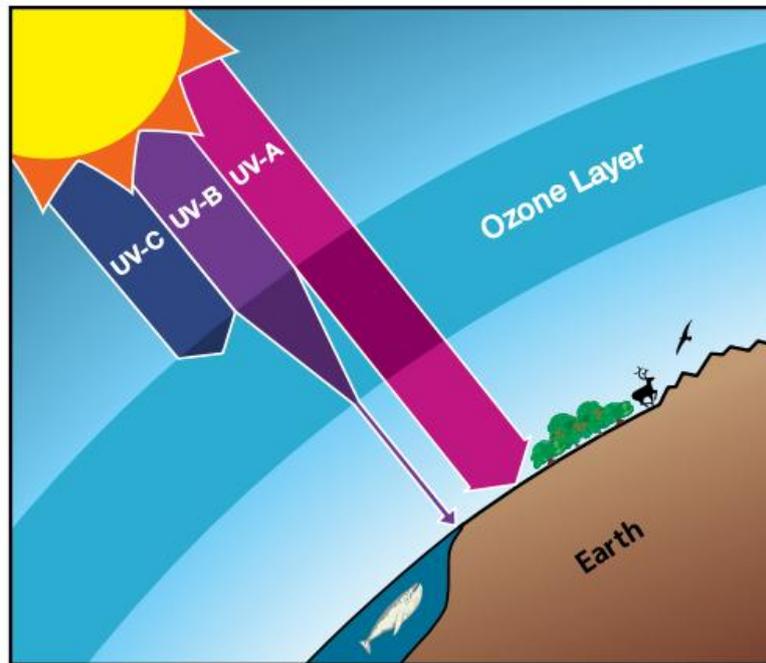
- The goal of solar Trees is to improve the landscape and architecture they enhance, typically in commercial or public location, and also to provide attention to solar technology.
- The purpose of installing a number of sun-powered trees is to encourage understanding, awareness and the adoption of renewable energy. They aren't often used as the primary source of energy for homes since rooftop solar systems can provide this energy.
- Solar trees can be found in rooftop solar panels and other sustainable building projects, symbolizing greater investments as well as their environmental benefits.
- Solar trees can help spread solar technology excitement and understanding in addition to providing shade and gathering spots.

The significance and potential for solar tree growth:

- They are Solar Trees are able to be positioned in conjunction with Agriculture to replace price volatile fossil fuels.
- A solar tree that is installed on your own could save you as much as 15% on electric power.
- The average Solar Tree has the possibility of saving the equivalent of 10-12 tonnes of CO₂ emission which are released into the air in the form of Greenhouse Gases when as compared to fossil fuel-fired power generation.
- In addition, the excess generated power could be fed back into the Energy Grid.
- This model of agriculture Model will provide an constant financial return and aid farmers in overcoming the adverse effects of the unpredictable changes in the activities of agriculture and, in turn, make farming an energy and economic Sustainable method of living.
- The solar tree also has the ability to integrate IOT functions that are based on IOT, i.e. 24-hour CCTV surveillance in agriculture fields and real-time humidity and wind speed, rain prediction, and soil analytics sensors.

Topic 17. OZONE LAYER TO RECOVER IN 4 DECADES BUT AEROSOL INJECTION MAY UNDO GAINS: UNEP

Important for subject: Environment



The success in phasing out banned substances as stipulated in the Montreal Protocol has set the conditions for a complete recovery in the quality of the layer before the 2060s, a UN-backed panel of experts told the annual American Meteorological Society meeting on January 8, 2023.

- If the current policies are in the current policies the ozone layer will be likely to return to its levels of 1980 (before the creation of the Ozone hole) in the year 2066, if not earlier than the Antarctic before 2045 for the Arctic and in 2040 for the rest the globe.
- Scientists warned of the harmful consequences of geo engineering technology like aerosols from stratospheric sources on the layers of ozone.

Ozone hole

- The first Ozone hole was discovered in the stratospheric layers that lie over the Antarctic in 1985 that permitted the harmful UV (UV) energy to enter the lower layer of earth's atmosphere (troposphere) in which humans reside.
- UV radiation can cause dangers to your health including cataracts, skin cancers, and

other ailments of the eye, as well as a decrease in immunity.

What is Montreal Protocol?

- The Montreal Protocol was established to decrease the consumption and production of Ozone-depleting substances and safeguard the Earth's fragile the ozone layer.
- On the 16th of September of 1987, the agreement open for signatures, and was signed in January 1st, 1989 following the first meeting held in Helsinki in May 1989.
- The Protocol's participants are able to meet every year to decide on decisions that ensure that the Protocol's implementation is successful.
- It is worth noting that the Protocol has been revised or revised 7 times in its beginning In 1990 (London) (London), 1991 (Nairobi) (Nairobi), 1992 (Copenhagen) 1993 (Bangkok) 1995 (Vienna) 1997 (Montreal) in 1999 (Beijing).
- The protocol demanded the restriction on the usage and trading of 100 ozone depleting chemicals (ODS), and 99 percent of them have been successfully eliminated.
- The Kigali Amendment, the most recent amendment, calls for the elimination of hydrofluorocarbons (HFCs) in the year 2016.
- The HFCs were employed to replace a variety of pollutants that depleted the ozone, which were removed under the Montreal Protocol. Montreal Protocol.
- They are recognized as strong greenhouse gasses and, consequently, contribute to climate change despite the fact they do not diminish the ozone layer.
- It is the Implementation of the Kigali Amendment to the Montreal
- Protocol for the gradual elimination of certain hydrofluorocarbons (HFC) can gain from the achievement in the ODS ban. Reduced levels in HFCs could help in avoiding 3-0.5degC in global temperature rise above preindustrial levels by the at the end of the century.
- The Montreal Protocol established a list of concrete, achievable tasks that everyone was able to agree on.

Essential properties of the protocol

- There are several classes of hydrocarbons with halogenation that cause the destruction of stratospheric Ozone constitute the basis for the arrangement.

- Hydrofluorocarbons (HFCs) were introduced as non-ozone depleting alternatives to assist in the speedy phase-out of CFCs and HCFCs.
- Hydrochlorofluorocarbons (HCFCs) are gases that are used in foam applications, air conditioning, and refrigeration systems all over the world.
- However they are not allowed under the Montreal Protocol is gradually removing them because they harm the oxygen layer.
- HFCs are both ODS and powerful greenhouse gases. They are the most frequently utilized
- HCFC has the potential to cause global warming that is 22,000 times higher than carbon dioxide (GWP).
- The Parties came to the conclusion to accelerate the phase-out of HCFCs
- September 2007. In 2020, the developed countries were to remove them.
- Chlorine, also known as bromine is a constituent of any substance that is regulated under the Montreal Protocol that causes harm to the ozone layer (substances with only fluorine will not affect the Ozone layer).
- Nitrous oxide (N₂O) is one of the Ozone-depleting chemicals (ODSs) that the Montreal Protocol does not yet regulate.
- The treaty provides a specific timeframe to determine when production of each type of ODS will cease, and after that be eliminated completely.
- A 10 year phase-in period was set for countries in the developing world listed in the Article 5 of the convention.

The issues are:

- Geoengineering studies to limit global warming may cause damage to the Ozone layer.
- The panel looked at the possible impacts on the ozone caused by the deliberate introduction of aerosols to the stratosphere, also known as a stratospheric aerosol infusion (SAI).
- SAI could increase the reflection of sunlight which reduces the temperature that is absorbed into the troposphere.
- This technique "could also impact the stratospheric temperature, circulation, and Ozone production and destruction rates and the transport.

- The injection of sulfuric acid in the stratosphere for instance, could harm the layers of ozone.
- Aerosol sprays, along with other common substances like drying solvents for dry-cleaning, refrigerants, and fumigants, are a source of ODS.

What is Stratospheric Aerosol Injection (SAI)?

- Stratospheric Aerosol Injection (SAI) is an unknown geoengineering method which could help limit rising temperatures that cause climate change.

Working:

- It involves the making use of large cannons, hoses or specially-designed aircrafts to spray large amounts of Sulphate particles in the air's upper layer in order to form an anti-glare barrier.
- The study suggests that a specific aircraft could be developed that can fly for around 20 km , and to carry a weight of 25 tonnes.

Topic 18. GROUNDWATER IN 12 INDIAN STATES FOUND TO BE CONTAMINATED WITH URANIUM

Important for subject: Environment

12 Indian States have Uranium levels that exceed acceptable limits in their groundwaters The latest analysis of the condition of groundwater published from the Central Groundwater Board has revealed.

- Uranium concentrations in America's shallow groundwaters range from 0 to 532 parts of billion (ppb).
- Uranium content is within the safe limits of thirteen States in 13 states, and no of the sample from Kerala contained it..

Uranium contamination:

- Uranium is an an nephrotoxic component and may cause negative impact when in very high levels.
- That means that those who depend on groundwater that has this element have a greater risk of having impaired kidney function and kidney disease.

- The exposure to uranium can cause bone poisoning.
- The maximum permissible amount of the amount of uranium present in groundwater
- 30 ppb is the recommended amount recommended by Bureau of Indian Standards (BIS) as well as the World Health Organization (WHO).

Worst affected states:

- Punjab is the most affected, with uranium levels being higher than 17.7 times the limit prescribed. Nearly 29 percent of the wells in Punjab are contaminated by Uranium.
- The 12 states that are affected include Punjab, Haryana, UP, Rajasthan, Tamilnadu, MP, Odisha, Delhi, Telangana, Chhattisgarh and Bihar.
- 2019 vs 2022; a comparison
- In the review in 2019, groundwater in 18 states was discovered to be contaminated by the element uranium.
- Of these, the levels of uranium within six states including Andhra Pradesh, Himachal Pradesh, Maharashtra, Goa, Karnataka and West Bengal The levels are being upgraded to within the limits prescribed' zone.

The causes for contamination

- Geogenic procedures are the cause of contamination with uranium.
- The high levels of uranium in the ground are predominantly due to the natural uranium content of Aquifer rocks, the state of oxidation and the chemistry of groundwater.
- Extreme levels of bicarbonate were also observed at locations with high levels of uranium. Bicarbonates aid in bringing the uranium from the source rock.
- Anthropogenic causes may include:
 - Groundwater overexploitation
 - Groundwater-table decline
 - Nitrate pollution

Solution:

- Reverse Osmosis (RO) is one of the most recent membrane-based technology utilized

to purify water systems that remove Uranium.

Topic 19. DAILY HEAT STRESS MORE DANGEROUS TO CORALS THAN OCEAN ACIDIFICATION

Important for subject: Environment

Global Coral Reef Monitoring Network (GCRMN) has published a report on the condition of coral reefs around the globe.

Research details:

- Global warming poses a greater important threat to the growth of coral and reef growth over ocean acidification (OA) as per the findings of a recent study.
- As temperatures increase, massive bleaching events of coral and diseases are increasing in frequency.
- carbon dioxide that is absorbed by the ocean by the atmospheric pressure has already started to lower the rate of calcification the reef building as well as the reef associated organisms by altering the seawater's chemistry through a decrease in pH.

About the Global Coral Reef Monitoring Network (GCRMN):

- The Global Coral Reef Monitoring Network (GCRMN) is an operational network that was established by the International Coral Reef Initiative (ICRI) in 1995 which aims to provide the most accurate scientific data about the state and trend in coral reef ecosystems to aid in their protection and management.
- The GCRMN is an international network of managers, scientists and other organizations that monitor the health of coral reefs across the globe. It operates by way of 10 regional hubs.

International Coral Reef Initiative (ICRI):

- The International Coral Reef Initiative (ICRI) is an informal collaboration between Nations and other organizations that strive to conserve coral reefs as well as their associated ecosystems across the globe.
- GCRMN is the implementation part of ICRI, supporting its efforts via a global network to provide the most up-to-date scientific information about, and dissemination of the state and developments for coral reef ecosystems to ensure their

protection and management.

Topic 20. PRAVASI BHARATIYA DIVAS 2023

Important for subject: International relations

Minister for External Affairs S Jaishankar inaugurated the Youth Pravasi Bhartiya Divas 2023 in Indore, Madhya Pradesh on Sunday. He also said that the passions of the youth of India are becoming more visible.

- The 17th Pravasi Bharatiya Divas Convention is being held in collaboration together with Madhya Pradesh Government in Indore.
- The focus for this PBD Convention is "Diaspora: Reliable partners for India's progress in Amrit Kaal"

It will comprise three sections:

- The Youth Pravasi Bharatiya Divas will begin on the 8th of January 2023. The event will be hosted by Ms. Zaneta Mascarenhas, Member of the Australian Parliament Australia is the Guest of Honour for the celebration.
- The Prime Secretary Shri Narendra Modi will inaugurate the PBD convention on the 9th of January 2023.
- The ceremony will include speeches by the Chief Guest, the Dr. Mohamed Irfaan Ali, President of the Cooperative Republic of Guyana, and the Special Honorary Guest the Honourable Mr. Chandrikapersad Santokhi, President of the Republic of Suriname.
- President of India, Smt. Droupadi Murmu will present Pravasi The Bharatiya-Samman awards 2023 as well as preside on the Valedictory Session on January 10, 2023.

About Pravasi Bharatiya Divas (PBD)

- Pravasi Bharatiya Divas (PBD) is celebrated on the 9th day of January each year to celebrate the contributions to those from the Overseas Indian community in the growth of India.
- 9th January was selected as the day to commemorate PBD because it was the 9th January in 1915 when Mahatma Gandhi was the greatest Pravasi was able to return in India after his return to South Africa, led India's liberation struggle, and changed life

of Indians forever.

- The first day of the celebration was in 2003. However, in 2015, it was redesigned and it was set to be celebrated every two years.
- Then it was an annual theme-based conference held every year during the interval.
- PBD Conventions are scheduled every two years.
- PBD 2021 16th PBD Convention was held virtually in New Delhi. This year's topic included "Contributing to Atmanirbhar Bharat".
- This day the government also awards Pravasi Bharatiya Saman Award.
- This is considered to be the most prestigious award given to non-resident Indian or a person who is of Indian Origin or an institution or organisation that is run and managed by non-resident Indians or people of Indian Origin who have made a significant contribution to better understanding India outside of India, who support India's issues and causes in a tangible and tangible way.

Significance:

- This day plays a crucial function in that the international Indian community is given a platform to engage with the authorities and indigenous peoples of the country.
- Conventions can be very beneficial for networking between the international Indian community living in different areas of the globe and allow them to discuss their experiences in various areas.

Topic 21. INDIANS ABROAD: HISTORY, SPREAD, REMITTANCES

Important for subject: International relations

Premier of India recently opened the 17th Pravasi Bharatiya Divas (PBD) convention in Indore (Madhya Pradesh) in the state of Madhya Pradesh. He said that Indians who live in other countries are ambassadors of India's foreign lands.

The history of Indian diaspora' Girmitiya' arrangement:

- It is believed that the Indian diaspora has exploded since the very first group of Indians were transported to the counties of the eastern pacific region along with the Caribbean islands as labourers indentured to work.
- They were transported to these countries during the early and 19th century to help plants in British colonies, which were suffering from a labor crisis after the

abolishment of slavery 1833 and 1834.

The waves of migration:

- In the 2nd wave more than 20 lakh Indians were sent in Singapore as well as Malaysia to farm, while The 3rd as well as 4th waves saw professionals moving to the west and workers heading into the Gulf and the west Asian countries following the onset of the oil boom.

Classification of Indian Diaspora

- International Indians fall into three groups 3 categories: Indians who are not resident Indians (NRIs include Indians who reside in other countries) People with Indian Origin (PIOs), Overseas Citizens of India (OCIs).
- According to the MEA, PIO refers to a foreign citizen (except a national of Pakistan, Afghanistan Bangladesh, China, Iran, Bhutan, Sri Lanka and Nepal) - who at any time held an Indian passport, or who or either of their parents/grandparents/great grandparents was born and permanently resided in India as defined in Government of India Act, 1935, or who is a spouse of a citizen of India or a PIO
- A distinct segment of OCI was established in the year 2006. OCI cards were issued to foreign nationals in 2006. OCI card was made available to foreign nationals who was eligible to become an Indian citizen India as of January 26, 1950, who was citizens of India anytime following January 26 1950, or belonged to a country which became part of India on or after July 15, 1947.. Minor children of these individuals with exception to those who were citizens or a citizen of Pakistan or Bangladesh could also be qualified for OCI cards.
- It was in 2015 that the PIO category was eliminated in 2015 and then merged with OCI. OCI category.

Size and geographic spread of Indian diaspora

- According to the committee of the Parliamentary on foreign affairs There were seven million Indians (NRIs 1.35 crore, PIOs - 1.35 crore PIOs 1.87 crore, PIOs - 1.87 million, OCIs, and students) living abroad (as as of December 31st 2021). The number, excluding students, is 3.22 crore.
- Based on the World Migration Report, produced by the International Organisation for

Migration under the United Nations, India has the highest number of emigrants in the world, which makes India the most popular country of origin worldwide and is being followed by Mexico, Russian and China.

Topic 22. 'AAROGYA MAITRI' PROJECT TO PROVIDE MEDICAL SUPPLIES TO DEVELOPING NATIONS IN CRISIS

Important for subject: International Relations

Premier Secretary Narendra Modi has announced a new 'Aarogya Maitri' initiative under that India will supply essential medical equipment to any nation affected from natural disasters, or by a humanitarian crises.

- India will also set up an 'Global-South Center of Excellence for studies on solutions for development or best practices from any country in the developing world, that can be scaled up and implemented across other countries of the Global South.
- India will also introduce 'Global-South Scholarships' to students from developing nations to study in India.
- PM Modi has also proposed the idea of a Global South Young Diplomats Forum that will aid in connecting junior officers to Foreign Ministries.
- PM added in the Covid pandemic India's Vaccine Maitri Initiative supplied manufactured-in-India vaccines to more than 100 countries..

'Vaccine Maitri' Initiative

- It's an initiative from The Ministry of External Affairs.
- This is an initiative for humanitarian reasons that was taken by the Indian government India to distribute the COVID-19 vaccine to other countries.
- It has helped to strengthen India's position as the first responder in emergencies.

Topic 23. WOLF WARRIOR DIPLOMACY

Important for subject: International Relations

The Chinese Foreign Ministry spokesman Zhao Lijian popularly considered the "wolf warrior" diplomat is now in Ministry's Department of Boundary and Ocean Affairs.

- The appointment Zhao Lijian to an unimportant Boundary and Ocean Affairs Department has brought attention to China's diplomacy and also sparked the debate

over the need to recalibrate it.

- Zhao became famous by tweeting that he was accusing of the US Army of bringing corona virus to China in March 2020.

Wolf Warrior Diplomacy

- It's an innovative approach within China that bolsters the presumed shift in
- Chinese diplomacy varies from traditional active, passive, and low-key to aggressive activethat can go even to attacking or threatening those who are deemed to be infringing on China's rights.
- This strategy is in stark contrast to the previous Chinese diplomatic policies in the time of Deng Xiaoping of 1970s-80s, that had focused on working in the shadows in order to avoid controversy, and favoring an international collaboration ethos.
- 'Wolf-warrior diplomacy' describes offensives by Chinese diplomatsto defend China's national interests in combative ways.
- Many Chinese are of the opinion that China's Western media's image of China is biased, with a lot of prejudices based on ideology and racism.
- Wolf-warrior diplomacy is a part of Chinese government's effort to "tell the China story."
- Wolf wary diplomacy was extensively used in recent years, especially after the outbreak of the COVID-19 pandemic.
- Wolf warrior diplomacy has frequently received a hefty response and, in some instances, resulted in a backlash against China.
- This could have negative consequences in bilateral relations with other nations.

Concerns

- In the same way that Chinese society has evolved, so too have Chinese diplomats aren't all the same.
- There is no consensus in the Chinese international establishmenton whether it is appropriate to engage in confrontational diplomacy but there is no consensus that all Chinese diplomats are wolf-warriors.
- Traditionalistically minded Chinese diplomats have tried to curb the aggressive instinct and dismissed Zhao's theory regarding China's involvement in the US army

being "crazy."

- Wolf warrior tactics, paired with a strong military presence along the border between China and India has resulted in forcing India further away from China than the U.S., and alienating an economy of a billion people.
- Finding a balance between in defense of national interests and increasing the soft power of China is a huge problem for Chinese diplomacy due to ideological, political and cultural differences with Western powers.

Topic 24. AFTER JOS HIMATH, IT COULD BE KARNAPRAYAG, NAINITAL AND OTHER UTTARAKHAND TOWNS NEXT, SAY EXPERTS

Important for subject: Geography

The subsidence of land is an unnoticed calamity which is now affecting this region of the Himalayan region.

Subsidence to land:

- Land subsidence refers to the slow or sudden sinking of the surface of the earth due to the displacement or removal of subsurface earth material.
- It is considered a natural-anthropogenic hazard and is irreversible.
- It is predicted that in 2040, the subsidence of land will impact approximately 8 percent of the earth's top layer and about.
- 1.2 billion people reside in 21 percent of the world's largest cities.
- In India regions like Mumbai, Kolkata and Delhi are also experiencing land subsidence.
- Regions where the earth's substance is made up of tiny soil particles such as the alluvial deposits found in fertile Gangetic plains are more prone to.

Principal causes of subsidence of land:

- Natural elements: Land subsidence happens due to sudden or gradual natural compaction or the collapse of soils due to causes such as --
- The tectonic activity (e.g. earthquakes and faulting).
- Volcanic activity.
- Landslide

- Sinkhole formation.
- Permafrost is melting.

The causes of anthropogenesis:

- Aquifer systems are progressively drained due to the extensive withdrawals of groundwater:
- When water is drawn from aquifers the clay between water pockets shrinks gradually, causing land sinking.
- The development of underground infrastructures like metros, tunnels and so on. Mining underground in excess of oils, minerals, and gas.
- Constructions with a high load, like high-rise buildings

Subsidy to land in the Uttarakhand Region:

- Some towns that may suffer the fate of Joshimath could be Karnaprayag along with Gopeshwar located in Chamoli district (where Joshimath is situated); Ghansali in Tehri district; Munsiri and Dharchula in Pithoragarh district; Bhatwari in Uttarkashi district; Pauri; Nainital and numerous towns in between.

Causes of subsidence on land in these regions:

- A rapid growth in the population of these regions.
- Streams and springs that are natural channels for discharge are shut off.
- Multistory buildings are constructed and unplanned constructions without taking into consideration the geographic sensitivity of the area in the mind.
- The expansion of roads, the unsustainable and non-scientific ruin of hill.

Topic 25. WHAT IS A COLD WAVE AND WHY NORTHWEST INDIA IS SHIVERING?

Important for subject: Geography

In Delhi in Delhi, the Safdarjung Weather station reported cold waves for five days straight so far this month, which is the longest period of cold weather in the last decade.

- The most low temperature recorded for this month recorded was 1.9 degree Celsius in January 8th, the second-lowest temperature during January in 15 years.

- Clouds and foggy cover created severe cold-day weather to parts of the area, as temperatures were lower than normal across areas of Delhi, Punjab, Haryana, Chandigarh, Himachal Pradesh, Rajasthan, Uttar Pradesh and Madhya Pradesh.

What is a cold-wave?

- The IMD is a cold wave by the minimum temperatures when the minimum temperature on the plains is 4°C or less, or when temperatures are lower than 10°C as well as 4.5 up to 6.4 degrees below normal.

The main factors are:

- Large-scale fog cover:
- Preventing sunlight from getting to the surface and affecting the balance of radiation.
- Low-lying winds and high levels of moisture close to the land's surface are causing the creation of a thick layer of fog over vast swaths across the Indo-Gangetic Plains.

Western disturbances:

- Western disturbances, also known as storms that originate from regions like the Mediterranean region linked with a shift in the direction of wind, bringing the easterly wind to northwestern India.
- Cold winds from the north-west have also contributed to the low temperatures.

Topic 26. GANGA VILLAS TO SAIL TODAY WHAT VARANASI-DIBRUGARH CRUISE TO OFFER

Important for subject: Geography

The Prime Secretary Narendra Modi will launch his Ganga River cruise in Varanasi the constituency of his Parliamentary seat. This five-week cruise described as the longest river cruise on the planet, is expected to arrive at its final destination-- Dibrugarh situated in Assam -on March 1.

The way:

- It begins at Varanasi, MV Ganga Vilas is scheduled to travel 3,200 kilometers over a period of 51 days and will traverse 27 rivers as well as several states before finishing its journey in Dibrugarh.

- The journey will visit 50 tourist destinations that include the major cities of Patna located in Bihar, Sahibganj in Jharkhand, Kolkata in West Bengal, Dhaka in Bangladesh and Guwahati in Assam.

Responsible ministry:

- The Ministry of Ports, Shipping and Waterways is the coordinator for the ship tourism project.
- While it is run by private operators, the Inland Waterways Authority of India (IWAI) under the Ministry of Shipping, Ports and Waterways (MoPSW), has backed the project.

Tourism on the river in India:

- In India Eight river cruise ships are operating in the region between Kolkata and Varanasi as cruise vessels are also being conducted along National Waterways 2. (Brahmaputra).
- The Indian government India has implemented a variety of initiatives to increase the nation's cruise tourism industry. This includes improvements to infrastructure and rationalisation of port fees and the elimination of charges for ousting and priority berthing for cruise ships, as well as the introduction of electronic visas.
- India hopes to boost the number of cruise passengers, from 0.4 million currently and up to 4 millions.
- The potential for economic growth of cruise tourism is anticipated to grow between \$110 million and \$5.5 billion over the next years.

Topic 27. FSSAI SETS STANDARDS FOR BASMATI RICE; TO BE ENFORCED FROM AUGUST

Important for subject: Geography



To help increase the popularity of basmati rice in India, The Food Safety and Standards Authority of India (FSSAI) has issued the standards for basmati rice on 12 January 2023. The rules will be implemented starting on August 1st 2023.

Need:

- FSSAI is the standard for HTML0:
- To protect consumer interest
- To create an environment of fair trade practices for the sale of basmati
- Make sure that the basmati rice you purchase in the marketplace has the distinct aroma that is associated by this particular variety.
- To ensure that the market is free from synthetic fragrances and colouring.

Parameters are:

- The authorities have set standards for parameters like the size of grains as well as their lengthening ratio after cooking.
- It has established the maximum levels for amylose, moisture levels, uric acid content

damaged grains, and the presence of non-basmati rice.

It is applicable to:

- Brown basmati rice milled basmati rice, cooked brown basmati rice, milled and parboiled basmati rice

About Basmati rice:

- It is among the most well-known kinds of rice all over the world.
- It is a long grain of rice that comes from India as well as some areas of Pakistan.
- Basmati rice has a unique fragrance and flavour due to the presence of a chemical called 2-acetyl-1-pyrroline.
- The chemical is present in basmati rice, at around 90 parts for million (ppm) which is twelve times higher than non-basmati varieties.
- Basmati rice requires certain climate conditions to flourish, and that is the reason it is grown in a few regions in India.

Production of Basmati Rice in India:

- India is among the biggest manufacturer of Basmati rice with around 70% part of global production.
- Basmati rice is one of India's most important exports with regard to soft power as well as hard currency.
- It is grown across the States that include Himachal Pradesh Punjab, Haryana, Delhi, Uttarakhand, Madhya Pradesh, Jammu and Kashmir and in western Uttar Pradesh.
- In May of 2010 the GI status was granted to basmati only exclusively in Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand and areas in west Uttar Pradesh and Jammu & Kashmir.
- A large portion of India's basmati is shipped in Gulf countries which include. Saudi Arabia, Iran, United Arab Emirates, Iraq and Kuwait.

Topic 28. CHINA + 1 TO EU+1

Important for subject: Economy

China + 1

- China-plus-one is an approach in which businesses do not invest solely into China and expand their business to other destinations.
- China was a popular investment destination due to the low cost of labour, production, as well as an expanding consumer market in the country.
- Businesses began to consider different locations to invest in because of interruptions to supply chains in the past year, caused by influenza and the Chinese's zeroCovid policies.
- This was caused by a container shortages which created confusion and disrupting the flow of supplies.
- The China-plus-one model provided an EU, Mexico, Taiwan and Vietnam an edge because businesses began investing in these alternative places.
- India was also an advantage when multinational companies began investing in emerging economies and India was an attractive option due to its low production costs and favorable business climate.

EU+1

- There is a risk that businesses could begin to reduce their investments across Europe due to the lack of gas supplies.
- This could cause blackouts and shortages throughout winter. Factory shutdowns can be another result. Europe is also planning to set an obligatory goal for cutting down on the use of electricity.
- It will ultimately result in lower production levels and supply chain disruptions, leading to losses for businesses with manufacturing units in Europe.

Impact on India

- This is what makes India an attractive place to investment. The enormous investment made from the state in the field of infrastructure is likely to be beneficial since it will increase the flow of foreign capital.
- India could be a good location for manufacturing and production units of big firms if

they take measures to encourage investment in these areas.

Topic 29. WORLD BANK

Important for subject: Economy

The World Bank has retained growth projections of India at 6.9 percent for FY23, and 6.6 percent for FY24.

- This is in spite of the most recent Global Economic Prospects report, released on Saturday, presenting negative outlook for the world economics

About the Report

- The World Bank produces the GEP two times a year, between the months of January and June. It is part of its comprehensive analysis of major macroeconomic trends and their effects on the member nations.
- The GEP offers intelligence to support of the achievement of development goals. It is a reliable resource for the member countries, stakeholder including civil societies, researchers and civil organizations.

Topic 30. ROLE OF INDIAN DIASPORA IN INDIAN NATIONAL MOVEMENT

Important for Subject: History

The Indian diaspora's contribution to the fight for freedom of India is not as well known.

- It is crucial to acknowledge its efforts as a nation and we'll not be able to pay the proper tribute towards our heroes of freedom throughout.

Leadership of Indian Diaspora in Indian National Movement: Mahatma Gandhi

- Mahatma Gandhi traveled in South Africa in 1893 as an attorney. A lot of Indians were being abused by Colonial government. Between 1894 and 1906,
- Gandhi directed his movement within South Africa like moderates. But, in 1906,
- Gandhi began the Satyagraha movement throughout South Africa against Black Act where each Indian required registration. Gandhi was able to force the colonial officials to relax for Indians. Indians free of Black Act.
- Gandhi developed some principles and methods in his political career including satyagraha Ahimsa, and non-cooperation. Gandhi utilized these principles and

techniques for the first occasion in South Africa

Lala Har Dayal

- Lala Har Dayal was born in the family of a Hindu Kaisth from Delhi in 1884.
- The newspaper he published was named 'Bande Mataram'.
- He inspired many students at California University to join Indian nationalism.
- He was a resident of Western America and became the general secretary of the Ghadar Party. He was determined to take on the role of leading Indians across America to ensure the liberation in India.
- In May of 1913, the 'Hindi Association in 1913, a Hindi Association formed at Portland. In the initial meeting of this group, Lala Har Dayal urged Indians to stop fighting against Americans but rather to fight British.
- Indian people took his advice and created a committee and released a newspaper called 'Ghadar'. The publication gained fame across the world and prompted Indians to united and fight the colonial administration.
- Lala Har Dayal successfully led Indian nationalists from America however, in March 1914, the leader was detained. Thus, Ghadar movement slowed down.
- Subhas Chandra BoseSubhas Chandra Bose was among the most prominent leaders of the Indian liberation struggle. He was a member of in 1921 the Indian National Congress in 1921.
- He was later elected general secretary of the Bengal presidency. In 1938, he was elected head of the Indian National Congress in 1938 and
- 1939. However, when Mahatma Gandhi refused to accept the presidency in 1939, he resigned from the Indian National Congress and formed the Forward Block.
- Through his entire professional career in the political arena, Bose had only one objective, which was to free India of British rule. To accomplish his aim, Bose went to Singapore in July 1943, and had a meeting with Rash Bihari Bose.
- Rash Bihari Bose handed his control over the Indian Independence League.
- Subhas Chandra Bose for the first time, led his first time in the Indian national army with the aid of thirteen thousand personnel from the army.
- He was in contact with many of the leaders from different countries like Hitler,
- Mussolini along with Stalin and demanded their assistance in the cause of freedom for

India.

- He spoke to students at Tokyo University in 1944 where he showed the true picture of India. He claimed it was India was a country with a rich culture and is famous for its deep philosophy.

Swami Vivekananda

- Narendranath Datta, also known as Swami Vivekananda, was born on January 12th 1863 in Bengal.
- He was a member of Brahma Samaj, and was in contact with Swami Ramakrishna Parmahansa in 1881. Vivekananda is believed to be the founder of Indian spiritual nationalism.
- He traveled throughout Asia, America and Europe. He was a participant in the World's Columbian Exposition in Chicago in the autumn of 1893.
- The 11th of September, 1893 Vivekananda gave his most renowned speech in the Parliament of Religions in Chicago.
- He spent longer than three years in the United States of America and England. He gave many talks throughout these two countries.
- In 1897, he re-entered India. He created the Ramakrishan Mission and served Indian citizens.
- He returned into West West in 1899 to spend a year. He died in 1902, at the age of 39.
- Vivekananda taught the lessons of spirituality and peace to India and the rest of the world.
- Vivekananda brought the world to Indian religion. He provided moral and spiritual basis to the Indian nationalism.

Mohan Singh

- Mohan Singh was an officer in the British Indian army.
- He was a soldier in the battle against Japanese army during the Second World War but when he realized that the British army was heading towards be defeated, he backed the Japanese army. Over than 45 000 Indian soldiers were detained in the hands of Japanese army during the Second World War.
- Mohan Singh was the one who arranged the personals of these soldiers and created

Indian National Army.

- Quit India movement provided a new energy for the Indian national army as a lot of young Indians were recruited to the movement.
- Then, in the month of December 1942 Mohan Singh was arrested. After him, Subhas Chandra
- Bose was made the commander of the Indian Army of the nation.

Shyam ji Krishna Varma

- Shyam J. Krishna Varma was one of the top leaders who were actively involved in the struggle to free India from foreign lands.
- He was a leader in the Indian fight for freedom in Europe between 1893 until 1914..
- He established The India House in London in 1904 which was later the home for Indian revolutionary leaders like Savarkar, Madam Cama and Madan Lal.
- Dhingra Shyam Ji Krishna Varma was deeply inspired by Swami Dayananda Saraswati and was the first president of the Bombay Arya Samaj. He served as the assistant professor of Oxford University.
- Shyam Krishna Varma was the author of the monthly magazine titled "Indian Socialist" from 1905.
- It was the time that Swadesi movement was in full swing against the colonial administration in Bengal. Through his journal, Krishna Varma published criticisms of the British Government within India.
- A group called 'Indian Home Rule Society' established in the name of Krishna Varma.
- He had the residence in Highgate that is also known as "India House". It was a mess-cumhostel that was used by Indian students. Many of the revolutionary leaders, like Vinayak Damodar Savarkar staying in this India House.

Madam Bhikaji Rustom Cama

- Madam Bhikaji Rustom Cama was a revolutionary woman from the Indian the national movement. Her birth date was September 24th 1861, in a wealthy Parsi family.
- She received an English education throughout her early years. Since her early years she was a nationalist thinker. Madam Cama was in the opinion of the British had

betrayal of India and had spread the most vile kind that of empire.

- Madam Cama was a participant in a variety of social events. She held the Indian tricolour flag at Germany on 1907 when she said "This flag is from Indian
- Independence! It is here! It is now sacred through the blood of the young Indians who gave their lives for the cause. I appeal to all gentlemen to stand and salute the Flag that represents Indian Independence.
- In honor of the flag I call on those who cherish freedom across the world to stand behind this flag"
- After Germany After Germany, she traveled to America and had a meeting the Indians.
- Her work introduced Indian diaspora to America as well as the oppression that was the voice for trained Indians from India.
- She was in England as well as continued her to move with the assistance of Shyam Ji Krishna Varma.
- Maharani Jinda Rani Kaur
- Maharani Jinda Rani Khan is believed to have been the first queen to be revolutionary in Punjab and because of her courage, she was known at the time as the "Lioness from Lahore'.
- She promised to take out the British only by repressing them. The most formidable adversary of the British was the youngest Maharaja of Punjab the Maharaja Kesari Ranjit Singh.
- After Maharaja Ranjit Singh died on June 27th, 1839, the Empress Jinda was seen emerging from the screen, formed her army, delivered an address before it, urged it on and named her son, five years old Dilip Singh as the king and took over the reins of government and was organized and working.
- Lord Dalhousie Admiring her bravery was astonished and said "Rani Jinda is more powerful than all the military power of the state".
- She was imprisoned for a time, but fled to Nepal as an sanyasi. She also came across Begum Hazrat Mahal as well as Nana Saheb. She planned a revolutionary plan but the plan was never completed due to her demise.
- Role of Overseas Organizations/incidents in Indian National Movement: Ghadar Party
- The concept of the Ghadar party was conceived of a few Indians who have settled in

America and Canada. On the month of July 1912 Indian millworkers gathered in Portland.

- They decided to create Pacific Coast Hindustan Association.
- On the 1st of November 1913 The Ghadar Party came into existence in San Francisco.
- Ghadar The Ghadar party was predominantly dominated by Punjabis. However it also had Indians from different parts of the India.
- Indian Muslims also joined the Ghadar party. Maulvi Barkatullah was an active Muslim participant in the Ghadar group from Central India.
- The name "Ghadar" became famous because Ghadar party released an online journal that bore the same name , 'Ghadar' (revolt). The headquarters for Ghadar party was called Ghadar Memorial. Ghadar the party's primary objective was to to instill Ghadar thinking into the minds of Indian people and to take on against British establishments.
- Ghadar protests in India was unsuccessful due to the fact that in February 1915, more than 100 members of the Ghadar group were killed. The Ghadar party's 100 members were detained for a lengthy period and transferred to the 'Kalapani' prison.

Komagatamaru Incident

- The Komagata Maru incident was a result of an incident involving the Japanese steamship Komagata Maru that an group of immigrants of British India attempted to immigrate to Canada in April 1914. Most of the ship's passengers were refused entry to Canada and were forced to return home to Calcutta.
- The Indian Imperial Police attempted to capture the leaders of the group. The group was enraged and the leaders were sprayed by police officers which resulted in the death of 22 persons.
- British Government issued instructions that passengers were not allowed to embark anywhere along the journey, not even at the point from which they had gotten on the ship, but only at Calcutta.
- It caused a tsunami of anger and resentment in members of the Indian population and was the catalyst for anti-British protests.
- A several Ghadar leaders such as Barkatullah as well as Tarak Nath Das took advantage of the angry emotions surrounding Komagata Maru as a trigger. Komagata Maru incident as a motivator and were able to bring many disgruntled Indians from

North America into the party's group.

Topic 31. IMBALANCE IN FERTILIZER USE

Important for subject: Agriculture

2022 saw the prices of fertilisers skyrocket in the lead-up to and following Russia's invasion of Ukraine on the 24th of February.

- The prices of all fertilizers, excluding muriate of potassium (MOP) have come down. Russia and its Belarus and its ally Belarus together contribute around 40% of the world's MOP production and exports.
- The decline in global fertiliser prices coincides with the decrease in global food prices.
- The World Index of Food is an average weighted of the world prices for a representative range of food commodities for a specified period that is calculated at 100 for 2014-2016.

Issue:

- Two ambitious programs of the government in power -the the Soil Health Card and the requirement for neem-coating of the urea were conceived to ensure an appropriate use of fertilizers..

Urea:

- But, far from weaning farmers off urea however, the consumption of this fertiliser with nitrogen has increased by 30 to 35 million tons (mt) over the past five years.
- Urea contains 46 percent nitrogen (N) and DAP includes 46 percent Phosphorus (P) with 18% nitrogen. MOP is 60 percent potassium (K).

DAP:

- There is a different fertiliser called di-ammonium-phosphate (or DAP (DAP) which has seen a similar effect of application too much.
- Di-ammonium-phosphate or DAP: Raw materials/intermediates:Phosphoric acid, ammonia sulfur, rock phosphate, and sulphur.

All sales of other fertilizers:

- The sales of other fertilizers, including complexes that contain nitrogen (N) and Phosphorus (P) (potash), K (potash) and sulfur (S) in various quantities have decreased.
- Unbalanced use:
- That is instead of using a balanced amount of nutrients in plants based on soil tests and specific requirements for the crop, Indian farmers are effectively using only Urea and DAP -two high-analysis fertilizers that contain 46 percent N and P , respectively.

Outcome:

- The consequences of these ratios results - the current ratio of NPK is around 13:5:1 in contrast to the ideal ratio of 4:2:1and will result in lower yields for crops.
- Similar to humans, plants are not able to handle fertilisers when only two or three nutrients are provided in excess.

Impact:

- Significant improvement in the general availability of fertilizers , with the exception of MOP.
- Significant reduction in the government's subsidies bill for fertilizers.
- Government initiatives to rationalise fertiliser use:
- It is the Soil Health Card Scheme:The soil health card offers information to farmers about the the soil's nutrient levels and provides recommendations on the appropriate amount of nutrients to be applied to improve the health of soil and increasing its fertility.

Objectives:

- The goal is to give out soil health certificates every 2 years to farmers to serve as an opportunity to address any the deficiencies in nutrients that can be found when fertilizing practices.
- Neem Coated Urea (NCU) is a fertilizer, as well as an agriculture scheme that is supported by the Government of India to boost the expansion of paddy and wheat.
- In addition to the increased production, Neem Coated Urea application also has a

positive impact on wheat and paddy crop.

- Farmers have noticed that the frequency of white ants decreased through the use of Neem-coated Urea in wheat crops.
- This is due to the scent of Neem oil, which upon dissolution is released in the standing water within the water that was standing and the its insecticidal characteristics. Neem.
- The change will not only help the environment and improve the lives of farmers, it will also stop illegal urea diversion for industrial uses.

'One Nation, One Fertilizer' scheme:

- Under the new scheme that is in place, all fertiliser firms, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs) will be required to adopt one "Bharat" brand for fertilisers and logos under the supervision of the PMBJP.
- Its brand new "Bharat" brand name and the PMBJP emblem will be affixed to two-thirds of this front part of packet of fertiliser.
- Indian Farmers Fertiliser Cooperative (IFFCO) Limited has produced the nano-urea in liquid form.
- It's cheaper than traditional Urea.
- 80-85% more efficient.
- Its shelf life is of one year.

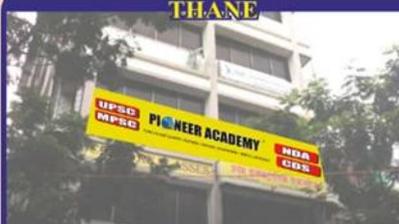
PIONEER ACADEMY

PUNE



PUNE Address :
204/5, 304/5, 2nd & 3rd Flr., Pinnacle Prestige (Near Durvankur Hotel), Above Cosmos Bank, Tilak Road, Sadashiv Path, Pune - 411 030
Mob : 91483 39324 / 25

THANE



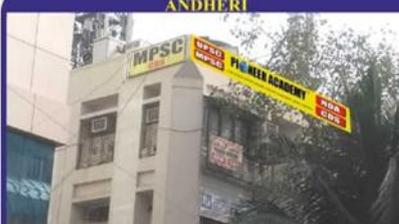
THANE Address :
201/202/203/204, 2nd Flr., Lalzer Arcade, Raghoba Shankar Road, Chendani, Thane (W) - 400 601
Mob : 75060 10635

DADAR



DADAR Address :
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Mob : 93241 69627 / 91375 41508

ANDHERI



ANDHERI Address :
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KALYAN



KALYAN Address:
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