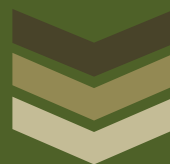


WEEKLY CURRENT AFFAIRS MAGAZINE for



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16 May to 22 May



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Success is born of action...

Topic 1. WINCHCOMBE METEORITE

Importance for Prelims: Geography



The National History UK located in London is to show a bit of the meteorite that touched down the city of Winchcombe in Gloucestershire within the UK. The meteorite touched the UK soil in February 2021.

- The Winchcombe meteoroid is 103 grams in weight. It's a fraction of black rock resembling coal. It had been analysed by a team from University of Oxford.
- On Gregorian calendar month 28, 2021, around many folks noticed a fireball blazing across the sky. The flash of sunshine lasted for 6 seconds.

Significance

- The meteoroid is four.5 billion years recent. Thus, the meteoroid is believed to offer clues about the start of the scheme.
- This meteoroid is rare because it may be a carbonaceous meteoroid. Out of the 65,000 meteorite types identified to man, only thousand are of this kind.
- The Winchcombe meteoroid is comparable to it retrieved by the Hayabusa 2 mission.

Carbonaceous meteorites

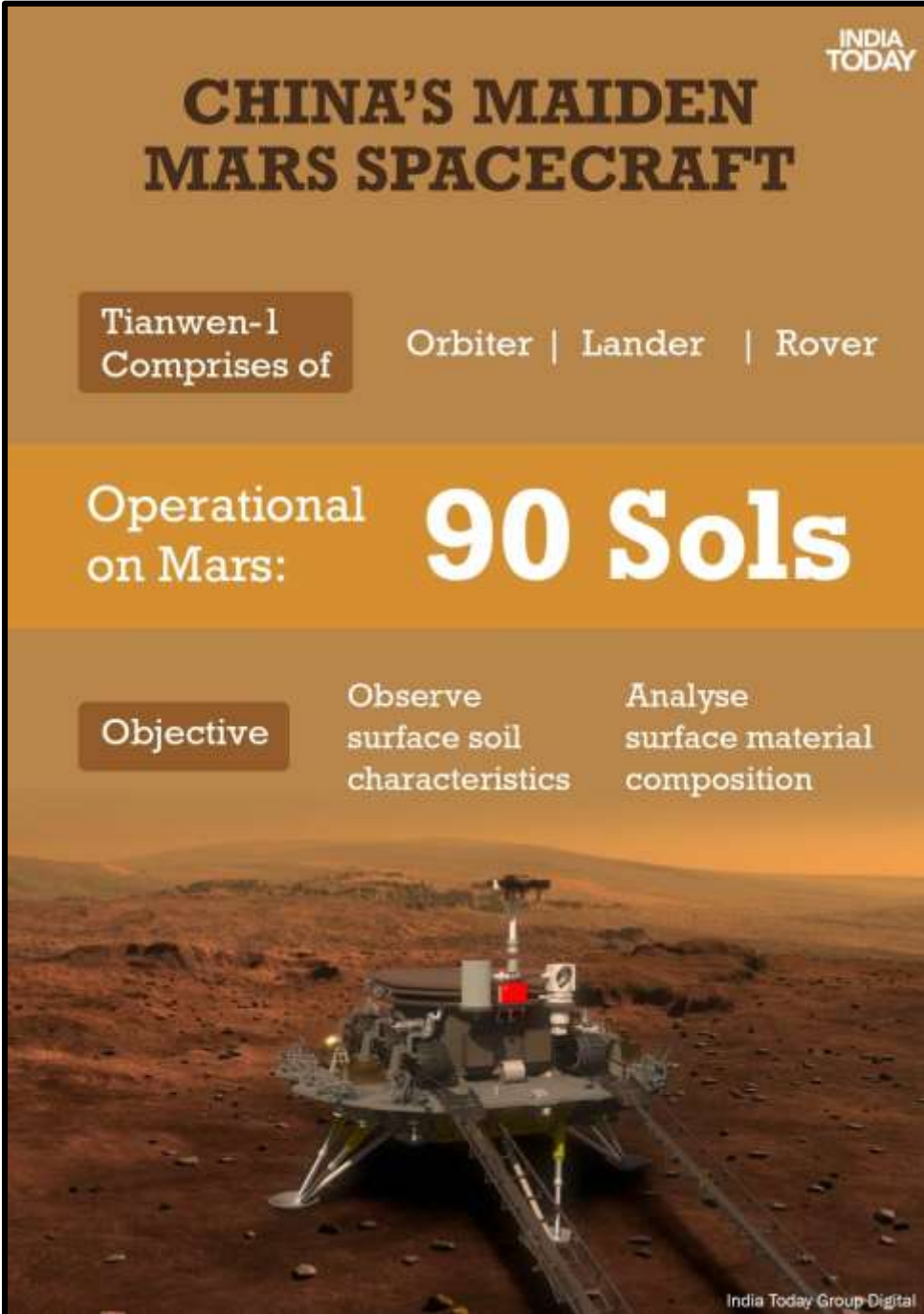
- They contain high proportion of carbon that is up to three. The Allende meteoroid is the largest carbonous meteoroid found on the earth.
- They contain silicates, sulphides, oxides and 3 to 22nd of water. The presence of organic compounds in these meteorites say that they need not undergo heating since they were fashioned. Their compositions are getting ready to the solar nebula. The solar system condensed from solar Nebula.

Meteorites, Meteors and meteoroid

- The Meteoroids are objects that aim size from dirt grains to small asteroids.
- When these meteoroids enter the earth atmosphere, they're referred to as meteors. When the meteors hit the ground, they're referred to as meteorites.

Topic 2. MARS LANDING BY CHINA

Importance for Prelims: Science & tech



INDIA TODAY

CHINA'S MAIDEN MARS SPACECRAFT

Tianwen-1
Comprises of Orbiter | Lander | Rover

Operational on Mars: **90 Sols**

Objective

- Observe surface soil characteristics
- Analyse surface material composition

India Today Group Digital

China landed a ballistic capsule on Mars carrying its initial Mars rover during a huge boost to its space ambitions.

- China had in July last year launched its initial Mars mission, known as Tianwen-1, meaning inquiries to Heaven, carrying a lander and rover.

- Tianwen-1 had been in orbit since February, and recently, a lander descended successfully on to the surface of the Red Planet.
- Only the soviet union and also the U.S. had antecedently applied a successful landing on Mars.
- China had antecedently tried to launch a Mars satellite along with Russia in 2011, but that did not enter orbit. This try, on its own, hit the target.

Zhurong Rover

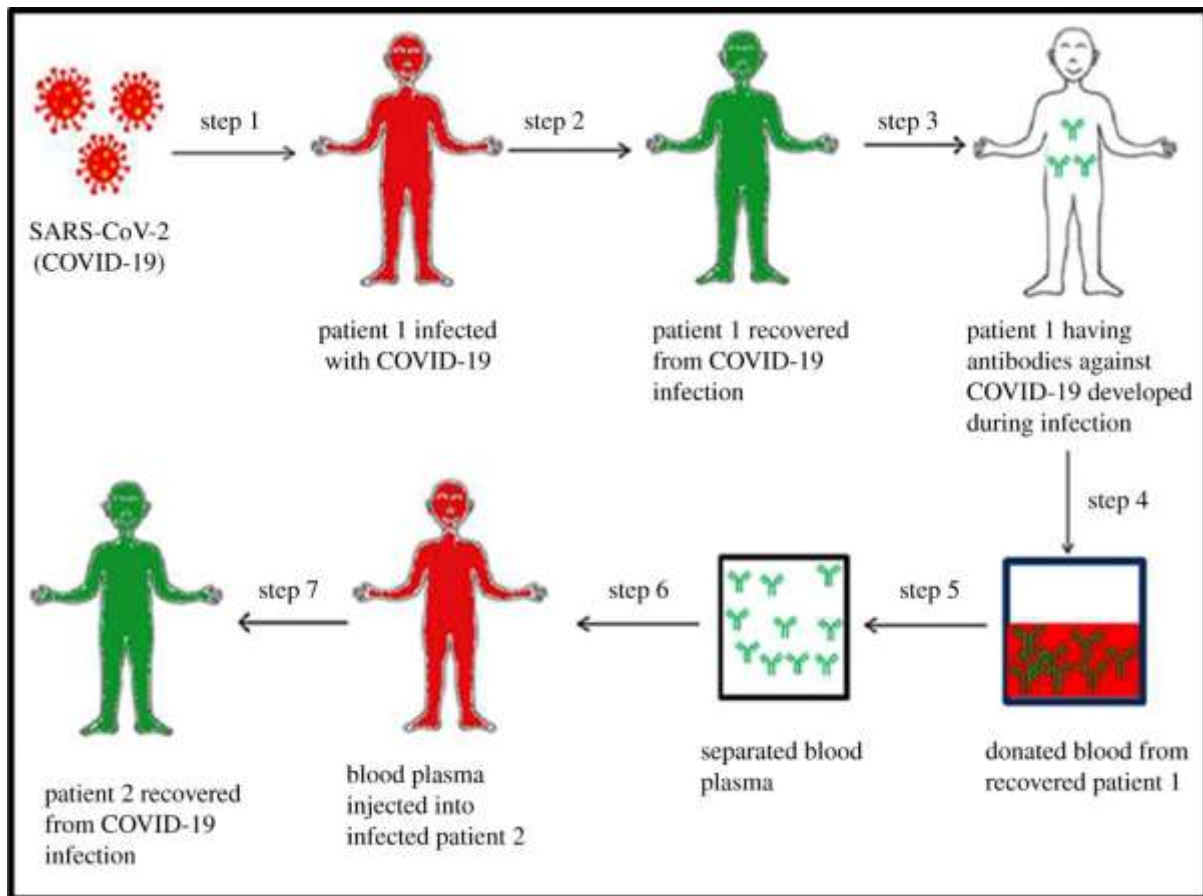
- China's initial Mars rover are named Zhurong once a standard fire god.
- The rover is aboard the Tianwen-1 probe that arrived in Mars orbit on February 24 and is thanks to land in might to seem for proof of life.
- The rover can offer "first-hand materials for analysis on the planet's space environment, surface topography, and soil structure".

About Tianwen-1:

- China's first Mars probe is termed Tianwen-1 (formerly Huoxing 1).
- The ballistic capsule consists of an orbiter, a lander and a rover. Launched in 2020 on an extended March 5 rocket from Xichang, China.
- Landing site: Somewhere in Utopia Planitia, a massive plain in Mars' northern latitudes and constant place NASA's viking 2 mission landed within the 1970s.

Topic 3. CONVALESCENT PLASMA THERAPY

Importance for Prelims: Science & tech



Plasma therapy not found effective, likely to be dropped from clinical management guidelines.

- The convalescent plasma therapy seeks to make use of the antibodies developed in the recovered patient against the corona virus.
- The whole blood or plasma from such people is taken, and the plasma is then injected in critically ill patients so that the antibodies are transferred and boost their fight against the virus.
- A study in The Lancet Infectious Diseases stated that a Covid patient usually develops primary immunity against the virus in 10-14 days.
- Therefore, if the plasma is injected at an early stage, it can possibly help fight the virus and prevent severe illness.
- The plasma can be infused into two kinds of Covid-19 patients, those

with a severe illness or individuals at a higher risk of getting the virus.

- However, while plasma transfers immunity from one person to another, it is not known if it can save lives in Covid-19 infection.
- The treatment could be effective for patients in the age group 40-60, but may be less effective for people aged beyond 60 years.

Previous Application:

- The United States used plasma of recovered patients to treat patients of Spanish flu (1918-1920).
- Hong Kong used it to treat SARS (Severe Acute Respiratory Syndrome) patients in 2005.
- In 2009, the Swine flu (H1N1) patients were treated with plasma.
- It has also been used to treat critically ill patients during Ebola as well.

Topic 4. TORNADOES

Importance for Prelims: Geography

Twelve individuals were killed and over 300 dislocated once 2 powerful tornadoes walloped Chinese cities of Wuhan and Suzhou on Friday night, leaving a path of destruction of homes and factories.

- A tornado could be a slender, violently rotating column of air that extends from a thunderstorm to the ground.
- Because wind is invisible, it's hard to examine a tornado unless it forms a condensation funnel created of water droplets, dirt and debris.
- Tornadoes is among the most violent phenomena of all part storms we experience.

Tornadoes are available several shapes and sizes, and that they are often visible within the kind of a condensation funnel originating from the bottom of a cloud, with a cloud of rotating rubbish and dirt beneath it.

- It is usually accompanied by extreme weather like serious downpours, hailstorms, and lightning.

Topic 5. SUBDOLUSEPS NILGIRIENSIS

Importance for Prelims: Science & tech



Researchers have discovered an Asian gracile skink species from Western Ghats.

- Named Subdolusepsnilgiriensis, the vertebrate features a slender body of close to 7 cm and is sandy brown in color.
- The new species is closely related to Subdolusepspruthi found in elements of the Eastern Ghats.
- The new species was found during a dry deciduous area, showing that even the dry zones of our country are home to unrealised skink diversity.
- This species is simply the third skink species discovered from land India in the last millennium.
- Skinks are non-venomous. They agree snakes owing to the usually inconspicuous limbs and also the method they locomote land. Such likeness has crystal rectifier to confusion typically leading to humans killing this harmless creature.
- Subdolusepsnilgiriensis is presently considered a vulnerable species as there are potential threats from seasonal forest fires, housing constructions and brick kiln industries within the area.

Topic 6. BIOLOGICS

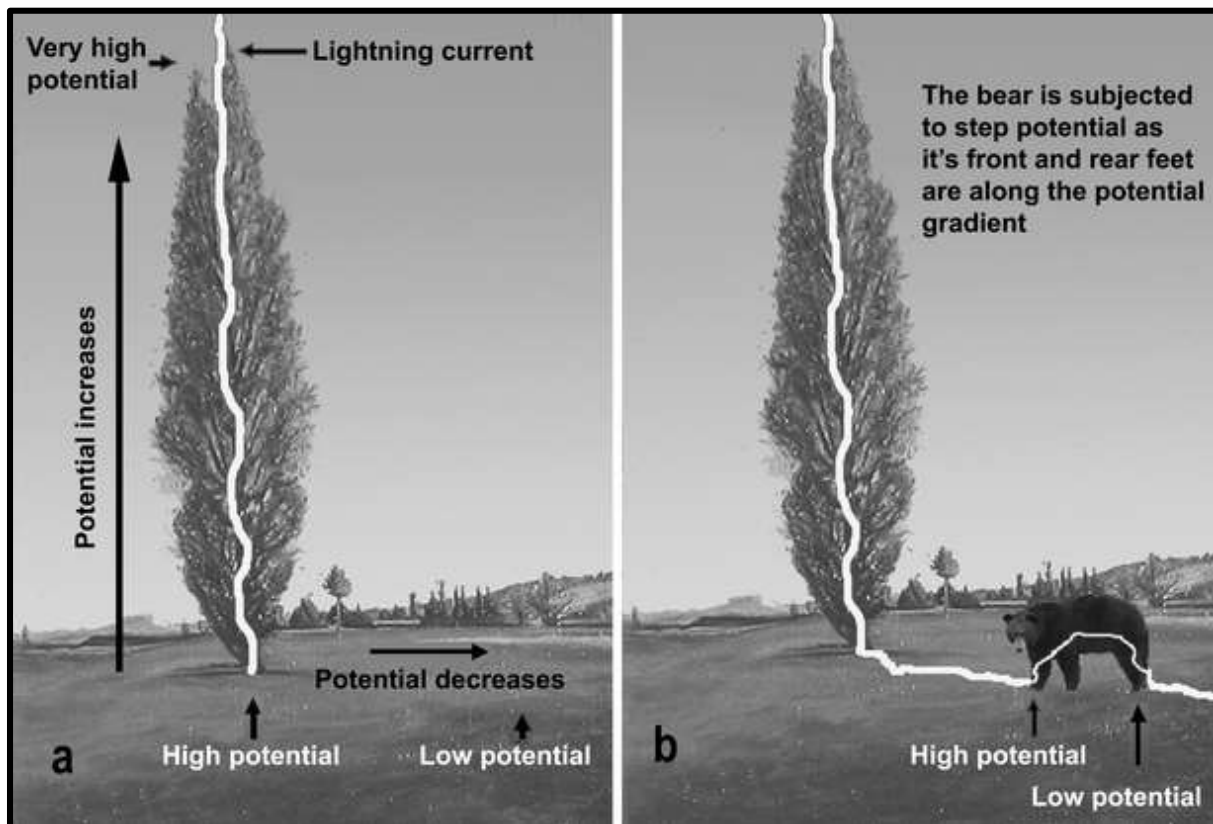
Importance for Prelims: Science & tech

A nano particle designed by researchers from University of Massachusetts, Amherst, in the U.S., offers a new, potentially revolutionary approach to treating diseases.

- The new concept, Protein–Antibody Conjugates or PACs, combines two different approaches to drug delivery.
- One is biologics, where the idea is to target a defective protein in the system by delivering proteins to it. An example of this is the case of insulin treatment.
- If a person is short of insulin, which is a protein, they are given a shot of this to balance the system.
- The other approach is to use antibodies for drug delivery. Antibodies are something the body produces to detect a foreign substance inside the body.
- Protein–antibody conjugates or PACs, developed by the group, which have a protein attached to the antibody, can zero in on, say, pancreatic cancer cells.
- This could have impact on incurable diseases, so-called undruggable ones like pancreatic cancer.

Topic 7. LIGHTNING IMPACT ON ANIMALS

Importance for Prelims: Science & tech



Recently, 18 elephants died on a peak in Assam and therefore the preliminary post-mortem report indicates that they had been affected by lightning.

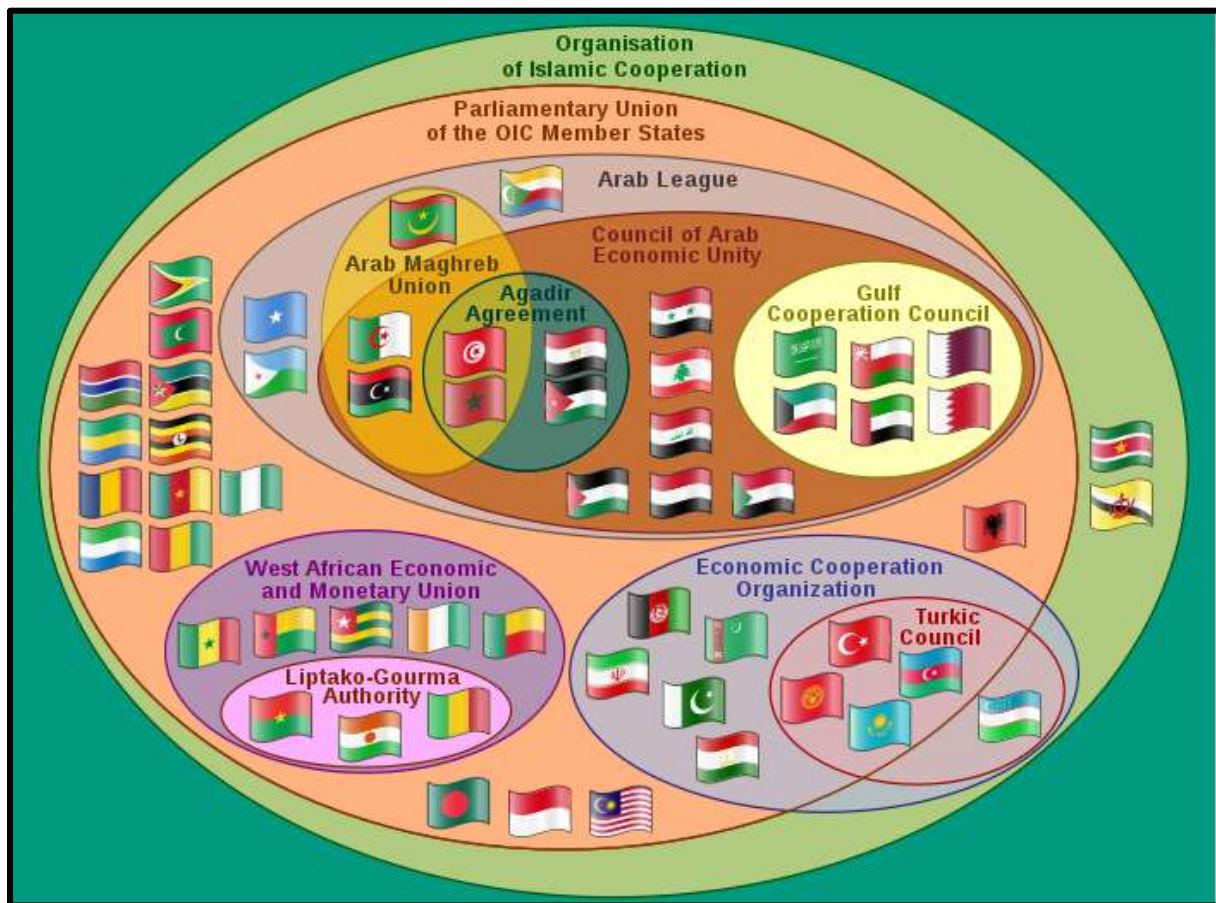
How will lightning kill animals?

- When current flows through the bottom following a lightning strike, the electric potential (voltage) is highest at the purpose of the strike, and reduces with distance along the direction of the flow.
- If an elephant is facing the strike purpose, the present can be due the front feet (higher potential) to the hind feet (lower potential), electrocuting it within the method.
- **Direct Flash:** an animal in an open field could also be affected directly by lightning if half of its body protrudes over alternative objects within the section.
- The taller animals are more vulnerable.

- **Side Flash:** once lightning strikes a tall object like a tree, it's going to generate a side flash which will strike an animal standing beneath the tree.
- **Touch Potential:** If one part of a tall animal's body is in touch with the ground while another part, at the next elevation, comes in touch with a lightning-struck object, a partial current could pass through its body.
- **Step Potential:** the foremost common lightning hazard among four-legged animals.
- When an animal's front and hind feet are far enough apart, a partial current may pass through the body in bound circumstances.

Topic 8. OIC

Importance for Prelims: International Organisations

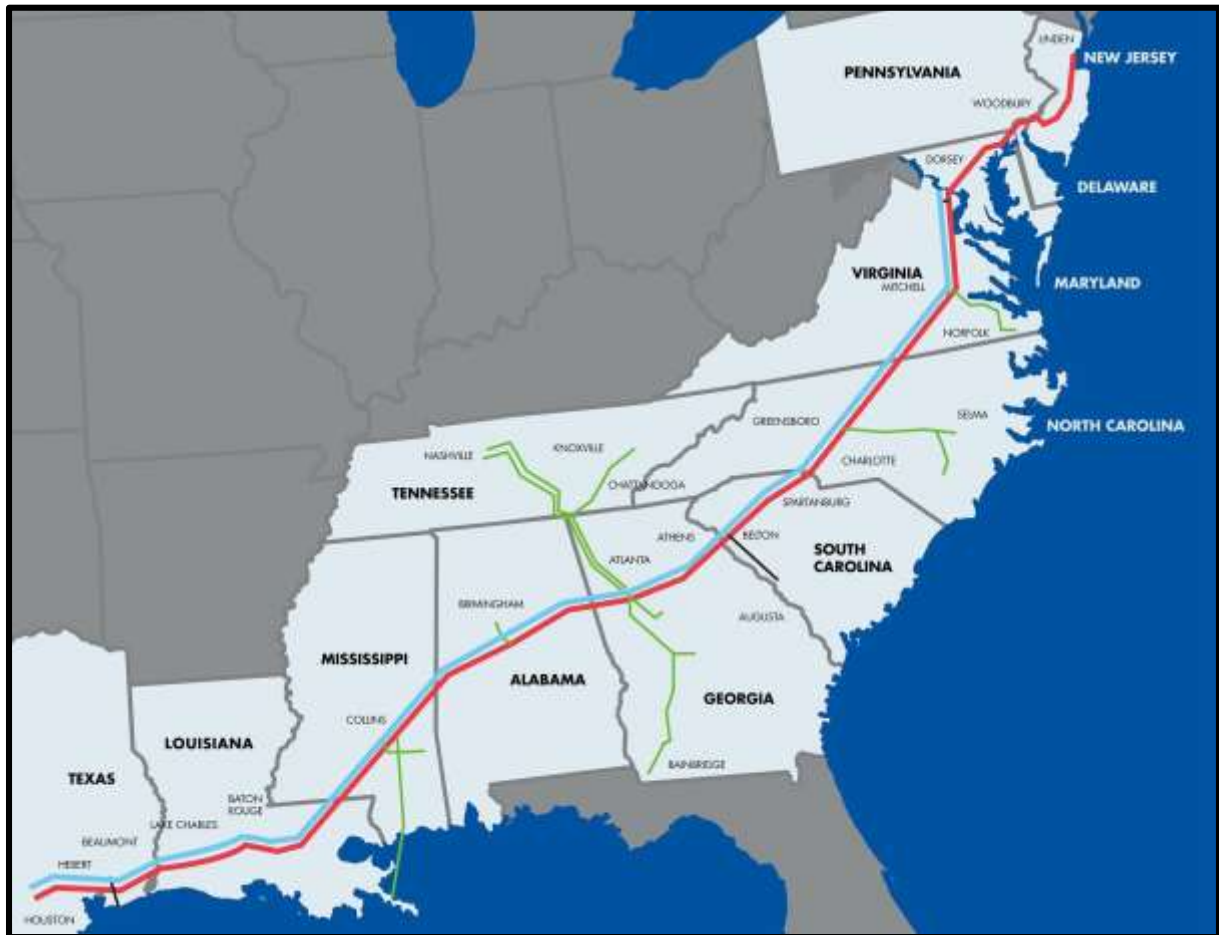


Saudi Arabia has called for foreign ministers of the world's largest body of Muslim nations to carry a gathering Sunday.

- The Organisation of Islamic Cooperation (OIC) is that the second largest intergovernmental organization once the UN with a membership of 57 states.
- It is that the collective voice of the Muslim world. It endeavors to safeguard and protect the interests of the Muslim world within the spirit of promoting international peace and harmony among varied people of the world.
- It was established upon a choice of the historical summit that took place in Rabat, Kingdom of Morocco on the 25th of September 1969. Headquarters: Jeddah, Saudi Arabia. India isn't a member of the OIC.

Topic 9. COLONIAL PIPELINE ATTACK

Importance for Prelims: International Relations



The Colonial Pipeline on Saturday announced that it's came its systems to "normal operations" when a cyberattack forced the company to finish off last week, leading to gas shortages within the us.

- The Colonial pipeline company, that transports regarding 45 per cent of all petrol and diesel consumed on the East Coast of the U.S., was forced to finish off operations after a cyberattack.
- The US Federal Bureau of Investigation has confirmed that a criminal gang called Darkside was answerable for compromising the Colonial Pipeline network.
- The shutdown led to the us national declaring a regional emergency to allow transportation of fuels through tanker trucks to answer the

impact of shortages.

What is a ransomware attack?

- A ransomware attack may be a cyber-attack victimization malware that encrypts the victim's files and needs users pay a ransom to decrypt the files.
- The hackers will then threaten to leak the information if the ransom isn't paid.
- It takes advantage of human, system, network, and software vulnerabilities to infect the victim's device.

Impact of cyberattack on oil costs

- The oil costs rose in response to the attack on Colonial Pipeline, with the worth of Brent crude rising to \$69 per barrel before falling to \$67.8.
- The consultants noted that a protracted closure of the operations of the pipeline could push up gasoline costs within the US as demand peaks throughout the summer.
- The disruption has already led to an increase in international purification margins, pushing up the worth of machine fuels.
- An increase within the value of crude product in Asia might offer an additional push to gasoline and diesel costs in India, that are already at record high levels.
- The oil costs have up over the past time period despite a surge in Covid-19 infections in Asia because of expectations of increasing oil demand from the US and Europe.

Topic 10. NDRF & SDRF

Importance for Prelims: Disaster Management



Cyclone Tauktae hurtles towards Gujarat; groups of NDRF, SDRF deployed.

- The National Disaster Response Force (NDRF) is an Indian specialised force constituted “for the aim of special response to a threatening disaster situation or disaster” beneath the Disaster Management Act, 2005
- The “Apex Body for Disaster Management in India is that the National Disaster Management Authority (NDMA).
- The Chairman of the NDMA is that the Prime Minister.
- The head of the NDRF is selected as Director General. The Director Generals of NDRF are IPS officers on deputation from Indian police organisations. Director General may be a three-star officer.
- The NDRF may be a unstable organisation that additionally to the Director General has several Inspector Generals (IG) and Deputy IGs, who are flag officers and wear badges of rank. The ‘Nodal Ministry’ within the central government for management of natural disasters is the Ministry of Home Affairs (MHA).

- The responsibility of managing disasters in India is that of the government.
- When ‘calamities of severe nature’ occur, the Central Government is accountable for providing aid and help to the affected state, as well as deploying, at the State’s request, of militia, Central Paramilitary Forces, National Disaster Response Force (NDRF), and such communication, air and different assets, as are accessible and needed.

Composition of National Disaster Response Force (NDRF)

- National Disaster Response Force (NDRF) may be a force of twelve battalions, organized on para-military lines, and manned by persons on deputation from the para-military forces of India: 3 Border security force, 3 Central Reserve personnel, two Central Industrial security force, 2 Indo-Tibetan Border Police and two Sashastra Seema Bal.
- The total strength of every battalion is around 1149. every battalion is capable of providing 18 self-contained specialist search and rescue groups of 45 personnel each as well as engineers, technicians, electricians, dog squads and medical/paramedics.

State Disaster Response Force

- As per of National Policy on Disaster Management 2009, the State Governments are needed to boost their own SDRF for quickly responding to disasters.
- As per data accessible, twenty four State/UTs have raised their SDRF.
- These SDRF are placed strategically at appropriate locations well connected to the airport, rail heads and roads for his or her immediate readying at the disaster sites.
- The SDRF also are to be used for Community capability Building and Awareness Generation programmes at intervals the State.
- During these programmes, SDRF will familiarise themselves with

parcel, critical buildings and different existing infrastructure for prompt responses at the time of disasters and at the same time work with the community, as well as school children, village volunteers and different stakeholders on what to try and do throughout disasters.

Topic 11. HELMAND

Importance for Prelims: International Relations



Fighting between the Taliban and Afghan government forces resumed in the restive southern province of Helmand, ending a three-day ceasefire agreed by the warring sides to mark the Id-ul-Fitr holiday.

- Helmand is also known as Hillmand or Helman and, in ancient times, as Hermandand Hethumand.
- It is one of the 34 provinces of Afghanistan, in the south of the country.
- It is the largest province by area. The province contains 13 districts.
- Lashkargah serves as the provincial capital. The Helmand River flows through the mainly desert region of the province, providing water used for

irrigation. The Kajaki Dam, which is one of Afghanistan's major reservoirs, is located in the Kajaki district.

- Helmand is believed to be one of the world's largest opium-producing regions, responsible for around 42% of the world's total production.
- Since the 2001 War in Afghanistan, Helmand Province has been a hotbed of insurgent activities. It has been considered to be Afghanistan's "most dangerous" province.

Topic 12. TRIBUNAL REFORMS ORDINANCE 2021

Importance for Prelims: Governance

The Centre has abolished several appellate tribunals and authorities and transferred their jurisdiction to other existing judicial bodies through the Tribunals Reforms (Rationalisation and Conditions of Service) Ordinance 2021. This Ordinance has been challenged in the Supreme Court.

- The government, through the Tribunals Reforms Ordinance 2021, is seeking to dissolve some existing tribunals and transfer their functions to the existing judicial bodies.
- Through the Ordinance, the government seeks to amend the Finance Act 2017 to include provisions related to the composition of search-cum-selection committees and the term of office of members for 19 tribunals (such as Customs, Excise, and Service Tax Appellate Tribunal) in the Act itself.

Provisions Proposed in the Tribunals Reform Ordinance 2021:

Search-cum-selection committee

- The committee that is responsible to recommend the names of the chairpersons and the members for the appointment by the central government in the Tribunal is called the search-cum-selection committee.
- The composition of the committee as mentioned in the Tribunals Ordinance 2021 is: Chairperson – The Chief Justice of India, or a Supreme Court Judge nominated by him.
- He/She has the casting vote. Two secretaries – Central Government nominates them. The sitting or outgoing Chairperson, or a retired Supreme Court Judge, or a retired Chief Justice of a High Court, The Secretary of the Ministry under which the Tribunal is constituted. He/She has no voting right.

Term of Office for the Tribunals Members

- The Tribunals Reform Ordinance states the following term of office: Chairperson – 4 years or till he attains the age of 70 years [Whichever is earlier] Remaining Members- 4 years or till they attain the age of 67 years [Whichever is earlier]

National Consumer Disputes Redressal Commission (NCDRC)

- The ordinance seeks to include the NCDRC within the purview of the Finance Act 2017.
- The NCDRC has been set up under the Consumer Protection Act, 2019. Further, the Centre is yet to constitute a National Tribunals Commission (NTC), an independent umbrella body to supervise the functioning of tribunals, appointment of and disciplinary proceedings against members, and to take care of administrative and infrastructural needs of the tribunals.

Topic 13. UNSC

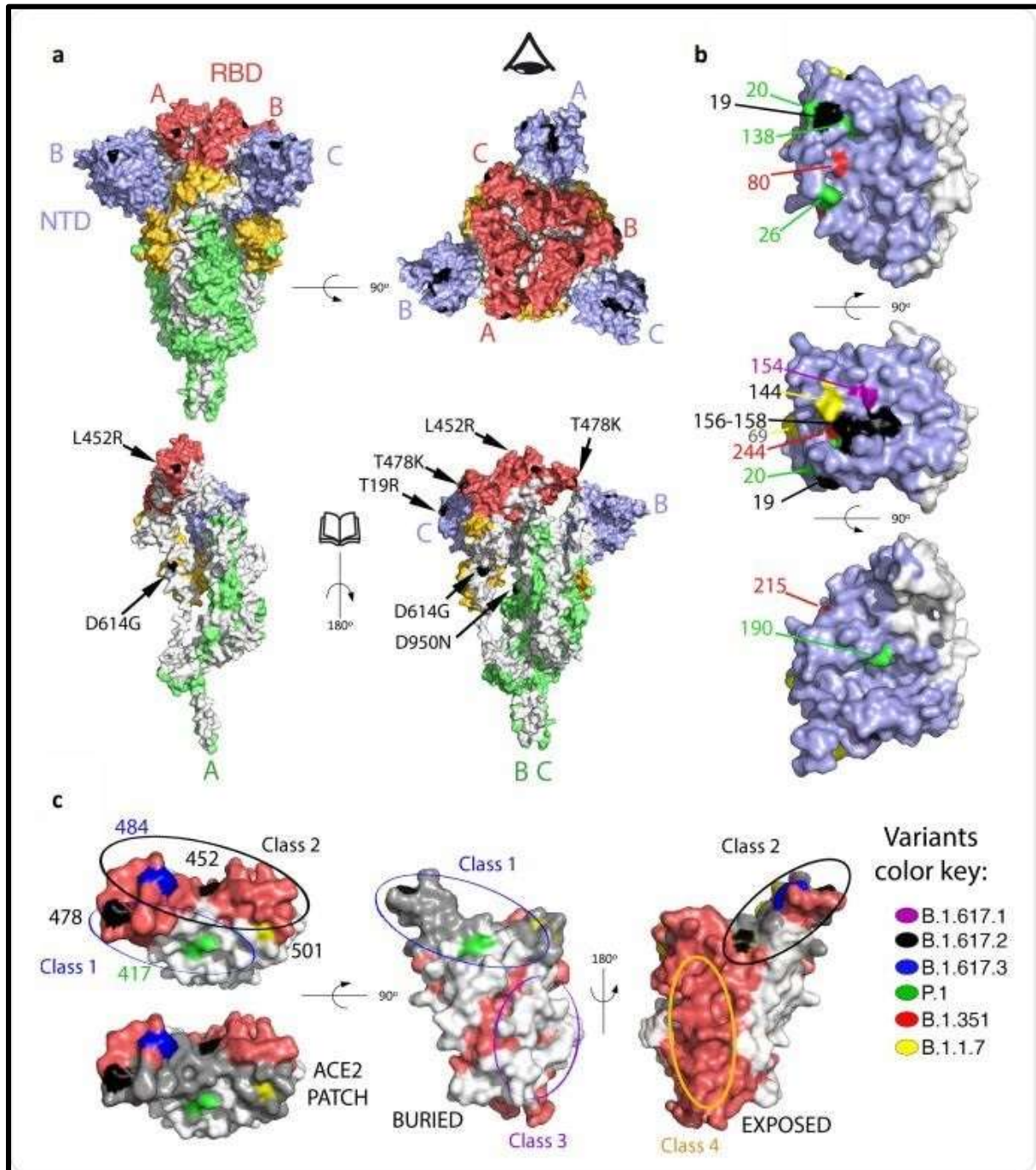
Importance for Prelims: International Organisations

TS Tirumurti, India's ambassador to the UN, outlined the country's position during an open debate at the UN Security Council early on Monday, saying both Israel and Palestinian authorities should show extreme restraint and desist from actions that exacerbate tensions

- The Security Council was established by the UN Charter in 1945. It is one of the six principal organs of the United Nations.
- The other 5 organs of the United Nations are—the General Assembly, the Trusteeship Council, the Economic and Social Council, the International Court of Justice, and the Secretariat.
- Its primary responsibility is to work to maintain international peace and security.
- The council has 15 members: the five permanent members and 10 non permanent members elected for two-year term
- The five permanent members are the United States, the Russian Federation, France, China and the United Kingdom.
- Each member of the Security Council has one vote. Decisions of the Security Council on matters are made by an affirmative vote of nine members including the concurring votes of the permanent members.
- A “No” vote from one of the five permanent members blocks the passage of the resolution.
- Any member of the United Nations which is not a member of the Security Council may participate, without vote, in the discussion of any question brought before the Security Council whenever the latter considers that the interests of that member are specially affected.
- The council's presidency is a capacity that rotates every month among its 15 members. The council is headquartered at New York.

Topic 14. B.1.617.2 VARIANT

Importance for Prelims: Science & tech



COVID vaccines nearly actually less effective against transmission of B.1.617.2 variant, says UK professional

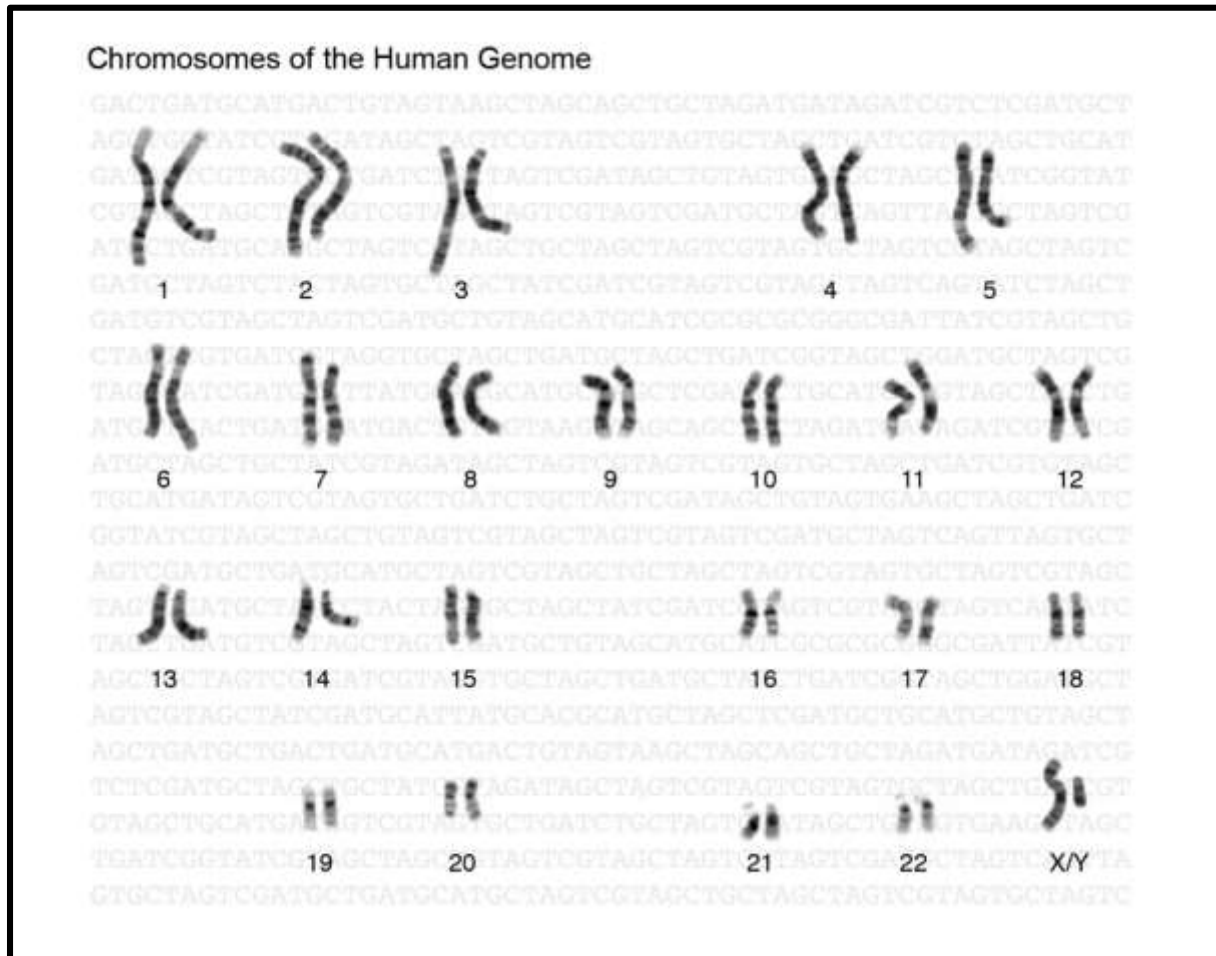
- While the world Health Organization (WHO) has classified B.1.617 variant of the coronavirus as a 'variant of concern', it appears that this

lineage consists of at least 3 sub-lineages — B.1.617.1, B.1.617.2 and B.1.617.3.

- The lineage B.1.617 was outlined by the mutations E484Q, L452R and P681R —along with D614G — within the spike macromolecule.
- B.1.617.2 is outlined by a lot of mutations within the spike protein, particularly T19R, DEL157/158, T478K and D950N.
- It is very important to notice that every one of those viral lineages have a lot of mutations, however the ones mentioned higher than are thought-about to be a lot of vital since they occur in the spike protein of the virus that facilitates the entry of the virus into the host cells.

Topic 15. GENOME

Importance for Prelims: Science & tech



Amid rising concerns regarding new SARS-CoV2 variants and a surge in Covid-19 cases, the government plans to feature 17 laboratories to the INSACOG (Indian SARS-CoV-2 Genomic Consortia) network to test genome

What is a Genome?

- Every organism's genetic code is contained in its deoxyribose nucleic acid (DNA), the building blocks of life.
- The discovery that DNA is structured as a "double helix" by Watson and Francis Crick in 1953, started the search for understanding how genes dictate life, its traits, and what causes diseases.
- A genome is all the genetic matter in an organism. It's outlined as "an organism's complete set of DNA, as well as all of its genes."

- Each genome contains all of the knowledge required to create and maintain that organism.
- In humans, a copy of the whole genome contains over three billion DNA basepairs.

Topic 16. BiPAP MACHINE

Importance for Prelims: Science & tech

A total of 50 BiPaP machines, clinically called bi-level positive airway pressure used for Covid patients with compromised lung health, have arrived from Hyderabad to Raigarh.

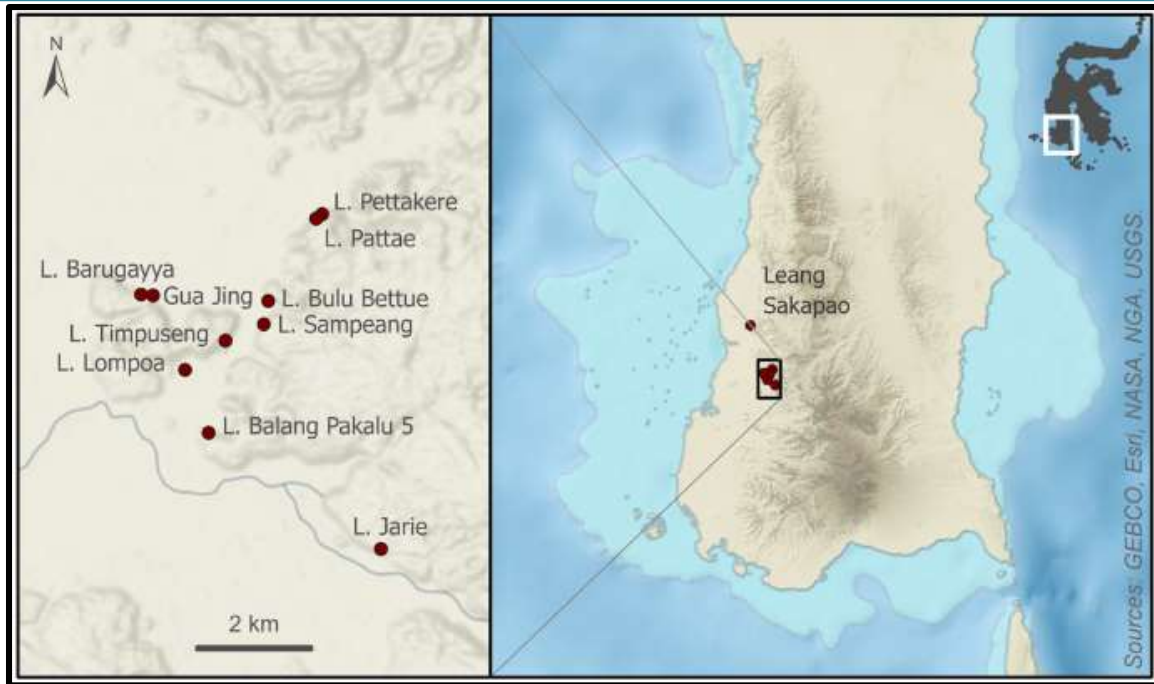
Bilevel Positive Airway Pressure Machines

- A BPAP may be a style of non-invasive ventilation (NIV) therapy wont to facilitate breathing.
- BPAP machines is employed in hospitals, and are on the market for those that need them reception.
- Home BPAP machines are compact — regarding the size of a toaster. The machine features a tube that connects to a mask that is worn over your nose and mouth.
- Like alternative ventilators, BPAP machines use pressure to push air into your lungs.
- Depending on the settings, this opens the lungs, up the amount of chemical element in the blood and decreasing the dioxide.
- These machines are referred to as “bilevel” as a result of they have 2 air pressure settings: When you inspire, BPAP machines deliver additional air pressure. this is often also known as breath positive airway pressure (IPAP).
- When you expire, the machine reduces the air pressure. this is often called expiratory positive airway pressure (EPAP).
- Some BPAP machines have a timer which will be programmed to take care of a certain number of breaths per minute.

Topic 17. IMPACT OF CLIMATE CHANGE ON OLDEST CAVE PAINTING

Importance for Prelims: Culture





Recently, the researchers within the on-line peer-reviewed open access journal 'Scientific Reports' have according that world's oldest cave art are weathering at an alarming rate thanks to climate change.

- The researchers studied flakes of rock that have begun to detach from cavesurfaces to search out that salts in 3 of the samples comprise calcium sulphate and sodium chloride.
- The artwork created with pigments was decaying thanks to a method noted ashaloclasty.
- It is triggered by the growth of salt crystals thanks to recurrent changes in temperatureand wetness, caused by alternating wet and dry weather within the region.
- Indonesia has also fully fledged many natural disasters in recent years, whichhave quickened the method of decay.
- The extreme patterns of inflated seasonal wet from monsoonal rains andworsening droughts are fast rock art deterioration.

World's Oldest Cave Art

- It could be a Pleistocene-era rock paintings qualitative analysis back to

45,000-20,000 years ago.

- It is found in cave sites in southern Sulawesi, on the Indonesian island of Sulawesi.
- The rock cave walls are adorned with hand stencils of red and mulberry tint, in addition to paintings of native mammals and human-animal hybrids.

Significance of the cave paintings

- A team of Australian and Indonesian archaeological scientists, conservation specialists, and heritage managers examined eleven caves and rock-shelters in the Maros-Pangkep region in Sulawesi.
- The design within the area includes what's believed to be the world's oldest hand stencil created by pressing the hand on a cave wall, and spraying wet red-mulberry pigments over it.
- A near cave options the world's oldest depiction of an animal, a wartlike pig painted on the wall 45,500 years past.
- The cave art of ago is far older than the prehistoric cave art of Europe.

Topic 18. RETAIL vs WPI INFLATION

Importance for Prelims: Economics

The wholesale price-based inflation shot up to an uncomparable high of ten.49 % in April, on rising prices of crude oil and made things. Also, a low base of April last year contributed to the spike in inflation in Apr 2021.

Wholesale Price Index

- It is that the most generally used inflation indicator in India. Published by the office of Economic consultant, Ministry of Commerce and business.
- All transactions at the primary purpose of bulk sale within the domestic market are included.
- Major criticism for this index is that the overall public doesn't purchase product at wholesale price.
- The base year of All-India WPI has been revised from 2004-05 to 2011-12 in 2017.

Consumer indicant / Retail Inflation

- It measures value changes from the perspective of a retail client.
- The CPI calculates the distinction within the value of commodities and services such as food, treatment, education, physics etc, that Indian consumers purchase to be used.
- The CPI has many sub-groups as well as food and beverages, fuel and light, housing and article of clothing, bedding and footwear.

Four types of CPI are as follows:

- CPI for Industrial workers (IW).
- CPI for agricultural labourer (AL).
- CPI for Rural working person (RL).
- CPI (Rural/Urban/Combined).
- Of these, the first 3 are compiled by the Labour Bureau within the Ministry of Labour and Employment. Fourth is compiled by the National

statistical office (NSO) in the Ministry of Statistics and Programme Implementation.

- Base Year for CPI is 2012.
- The financial Policy Committee (MPC) uses CPI knowledge to manage inflation.

WPI Vs CPI

- While WPI keeps track of the wholesale value of goods, the CPI measures the average value that households (retail consumers) acquire a basket of various goods and services.
- Even as the WPI is employed as a key live of inflation in some economies, the RBI no longer uses it for policy functions, as well as setting repo rates.
- The central bank presently uses CPI or retail inflation as a key live of inflation to set the monetary and credit policy.

Topic 19. FDI vs FPI

Importance for Prelims: Economics

Net foreign direct investment (FDI) into the country hit a fresh high of \$43.366billion within the year all over March 2021 because it crossed the previous high of \$43.013 billion that it had reached last fiscal.

Foreign Direct Investment

- FDI is that the method whereby residents of 1 country (the home country) acquire ownership of assets for the aim of controlling the production, distribution and other activities of a firm in another country (the host country).
- It is different from Foreign Portfolio Investment wherever the foreign entity simply buys stocks and bonds of a corporation. FPI doesn't offer the capitalist with control over the business.
- Flows of FDI comprise capital provided (either directly or through different related enterprises) by a far off direct capitalist to an enterprise.
- FDI has 3 elements, viz., equity capital, reinvested earnings and intracompany loans.
- Equity capital is that the foreign direct investor's purchase of shares of associate enterprise in a country aside from its own.
- Reinvested earnings comprise the direct investors' share (in proportion to direct equity participation) of earnings not distributed as dividends by affiliates, or earnings not remitted to the direct capitalist. Such retained profits by affiliates are reinvested.
- Intra-company loans or intra-company debt transactions sit down with short- or long-term borrowing and loaning of funds between direct investors (or enterprises) and affiliate enterprises.

Routes through that India gets FDI:

Automatic Route:

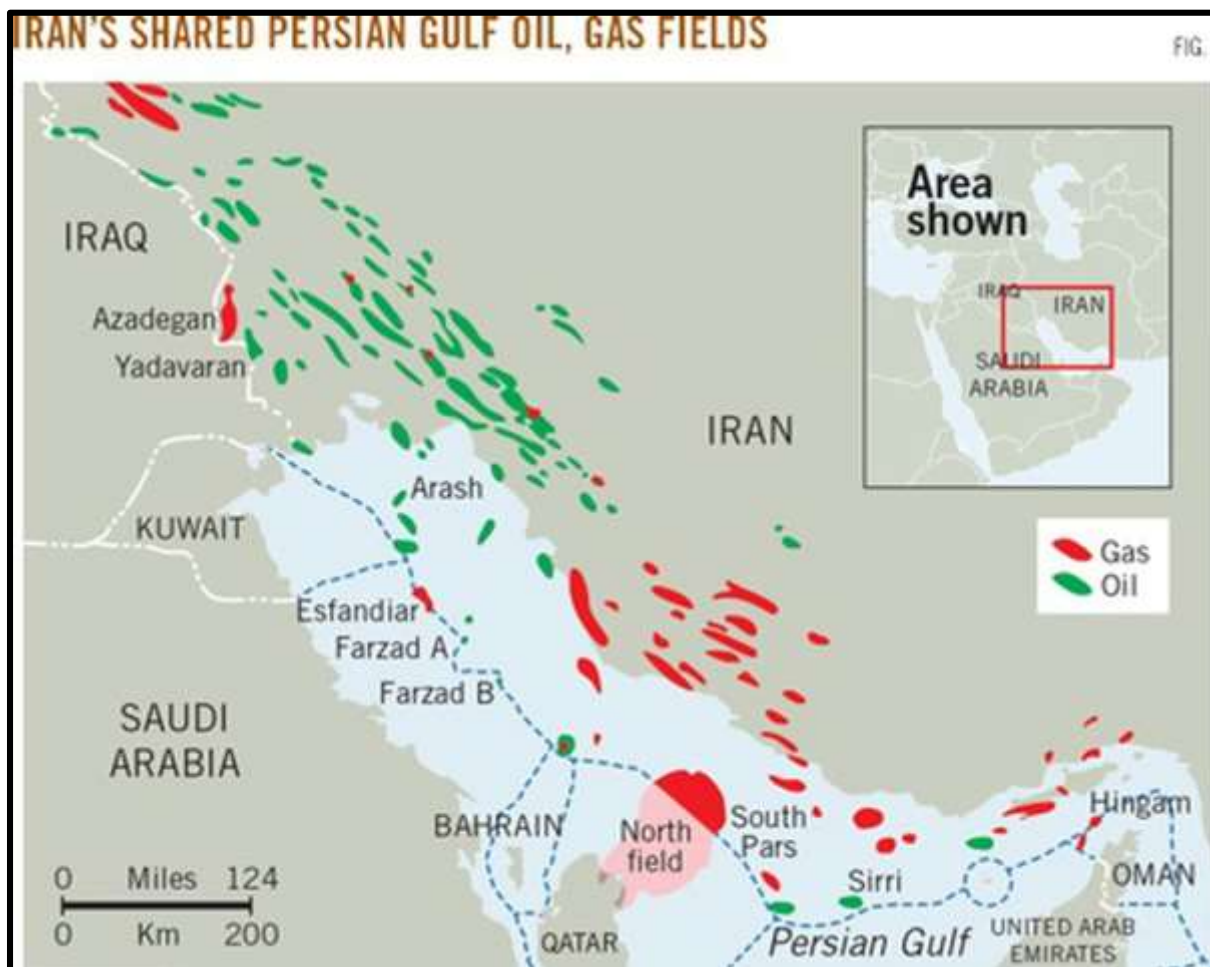
- In this, the foreign entity doesn't need the previous approval of the government or the RBI.
- Government route: during this, the foreign entity needs to take the approval of the government.
- The Foreign Investment Facilitation Portal (FIFP) facilitates the one window clearance of applications that are through approval route

Foreign Portfolio Investments

- Foreign portfolio investment (FPI) refers to investment within the money assets of a foreign country, like stocks or bonds accessible on an exchange.
- This style of investment is now and then viewed less favorably than direct investment because portfolio investments are sold off quickly and are now and then seen as short-term tries to form cash, instead of a semi-permanent investment in the economy.
- Portfolio investments generally have a shorter timeframe for investment come back than direct investments.
- As securities are simply listed, the liquidity of portfolio investments makes them much easier to sell than direct investments. With any equity investment, foreign portfolio investors sometimes expect to quickly understand a profit on their investments.
- Portfolio investments are a lot more accessible for the typical capitalist than direct investments as a result of they need a lot of less investment capital and analysis.
- Examples of foreign portfolio investments embody stocks, bonds, mutual funds, exchange listed funds, American depositary receipts (ADRs), and global depositary receipts (GDRs).

Topic 20. FARZAD B GAS FIELD

Importance for Prelims: International Relations



Recently, Iran gave the Farzad-B Gas Field to Petropars, a domestic gasproducer. this can be a setback for India's energy ties with Iran as ONGC Videsh Ltd (OVL) had discovered the gas field in 2008 and has been part of the ongoing cooperation on that front.

Farzad-B Gas Field:

- It is found in Persian Gulf (Iran).
- The contract for exploration of the field was signed in 2002 by Indian consortium comprising ONGC Videsh, Indian Oil Corporation and Oil India.
- The contract expired in 2009 when declaration of commerciality of the field, primarily based on the gas discovery.

- It has gas reserves of quite 19 trillion cubic feet.
- ONGC has invested with just about USD a hundred million.
- Since then, the consortium has been attempting to secure the contract for development of the sphere.
- The major dispute between India and Iran was over fixing of 2 pipelines, and also over money to be quoted on the event arrange.
- Around 75th of the deal was finalised by might 2018, once the America unilaterally withdrew from the nuclear deal and declared sanctions on Iran.
- In January 2020, India was knowing that within the immediate future, Iran would develop the sphere on its own and would love to involve India appropriately at a later stage.

Other Recent Developments:

- Indian merchants have nearly entirely stopped linguistic communication new export contracts with Iranian patrons thanks to caution regarding Iran's falling rupee reserves with Indian banks.
- Iran in 2020 dropped India's USD 2-billion provide and set to build the Chabahar railway link (Chabahar-Zahedan Railway Line) on its own.

Topic 21. GOLD EXCHANGE

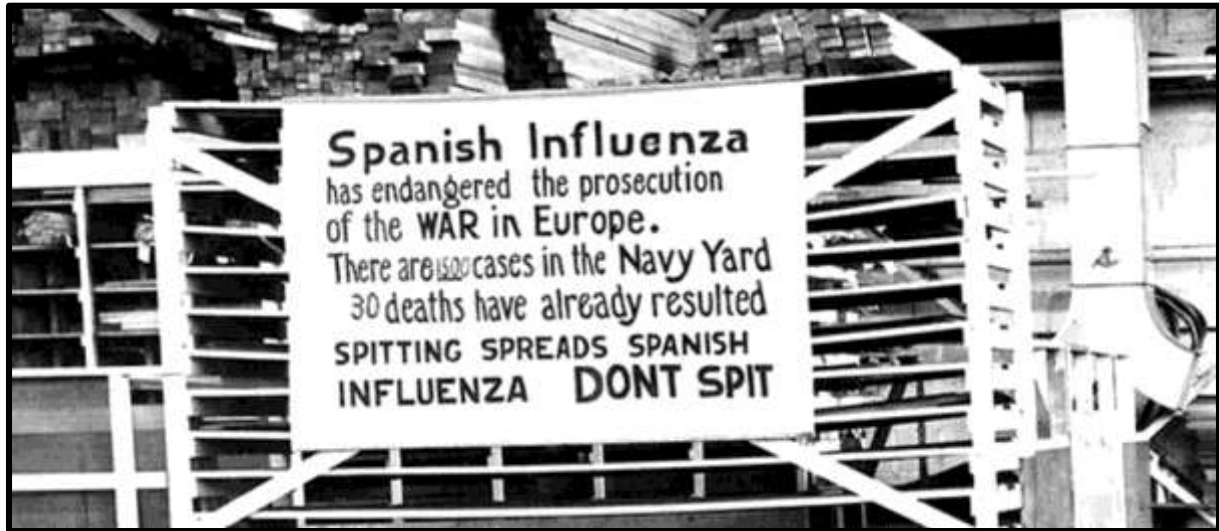
Importance for Prelims: Economics

The Securities & Exchange Board of India (SEBI) has floated a consultation paper on the proposed framework for Gold Exchange in India.

- The proposal was announced by Finance Minister Nirmala Sitharaman in her FY22 Budget speech.
- SEBI, entrusted with the task of regulating the proposed exchange, including for vaulting, assaying and gold quality and delivery standards, said the existing stock exchanges may deal in 'electronic gold receipt' (EGR) through a separate segment.
- The markets regulator has also suggested a new exchange exclusively for EGR that would have advantages such as better liquidity and single-price reference.
- As far as transactions are concerned, SEBI working groups have suggested that an entire transaction be divided into three tranches.
- It has been proposed that the vault manager should have a net worth of ₹50 crore and will be required to furnish security deposits.

Topic 22. SPANISH FLU

Importance for Prelims: Science & tech



In the beginning of COVID-19 last year, thousands of people around the world shared an image on social media depicting the three waves of the 1918 influenza pandemic, commonly known as the Spanish flu.

- Spanish flu was caused by an H1N1 influenza virus
- There is no universal consensus regarding where the virus originated. It is believed that World War I was partly responsible for its spread.
- Spain was one of the earliest countries where the epidemic was identified, but historians believe this was likely a result of wartime censorship.
- Spain was a neutral nation during the war and did not enforce strict censorship of its press, which freely published early accounts of the illness. As a result, people falsely believed the illness was specific to Spain, and the name “Spanish flu” stuck.

H1N1 Virus

- H1N1 influenza virus causes Swine Flu.
- Swine Flu is an infection of the respiratory tract characterized by the usual symptoms of flu — cough, nasal secretions, fever, loss of appetite, fatigue, and headache.

- It is called swine flu because it was known in the past to occur in people who had been in the vicinity of pigs.
- The virus is transmitted by short-distance airborne transmission, particularly in crowded enclosed spaces. Hand contamination and direct contact are other possible sources of transmission.

Topic 23. INS KOLKATTA

Importance for Prelims: Defence

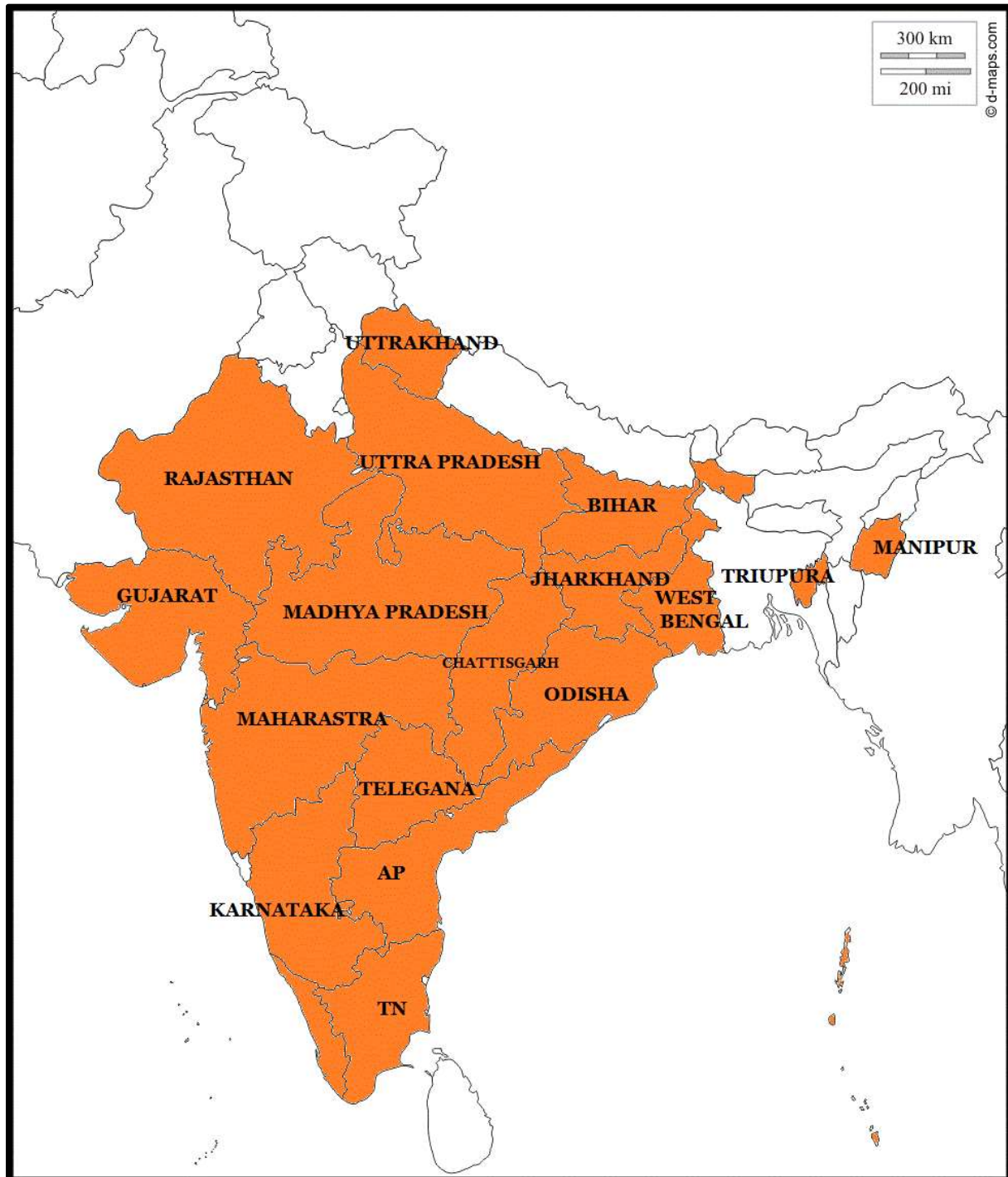


Cyclone Tauktae: INS Kolkata rushes to rescue barge with 137 onboard.

- INS Kolkata is the lead ship of the Kolkata-class stealth guided-missile destroyers of the Indian Navy.
- Ship was constructed at Mazagon Dock Limited (MDL), and was handed over to the navy on 10 July 2014 after completing her sea trials.
- The ship was officially commissioned by Prime Minister Narendra Modi in a ceremony held on 16 August 2014.

Topic 24. PVTG'S

Importance for Prelims: Society



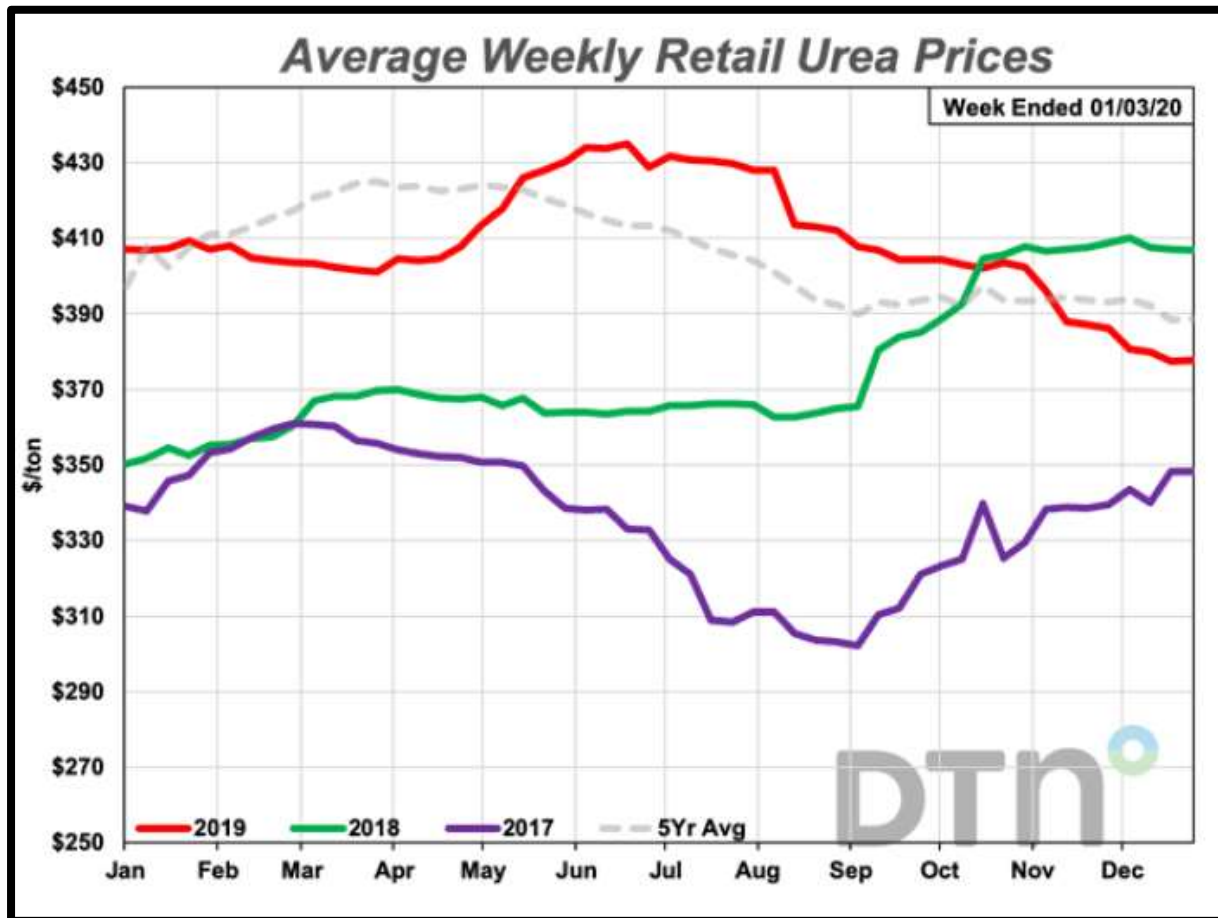
Concern for PVTGs in Odisha as check hesitancy poses hurdle. Thirteen of the 62 tribal teams in Odisha are known as PVTGs, that are given special protection because of their dwindling population. Their current population is 2.14 lakh, spread across 11 districts.

Particularly vulnerable cluster} group

- 75 tribal teams are categorized categorized by Ministry of Home Affairs asParticularly Vulnerable tribal teams (PVTG)s.
- The criteria for identifying significantly Vulnerable tribal groups are: –
- Pre-agricultural level of technology
- Low level of skill
- Economic backwardness
- A declining or stagnant population.
- PVTGs reside in eighteen States and UT of A&N Islands.
- Besides variety of schemes of presidency of India and also the State Governmentswhere PVTG population also are benefitted along with different population, Ministry ofTribal Affairs administers a theme particularly ‘Development of significantly VulnerableTribal teams (PVTG)’specifically for the PVTG population.
- The theme covers the seventy five known PVTGs in eighteen States, and Union Territory ofAndaman & Nicobar Islands.
- The theme aims at coming up with their socio-economic development in acomprehensive manner whereas holding the culture and heritage of the communitiesby adopting environment level development approach.
- The comes haunted under this theme are demand driven.

Topic 25. FERTILIZER PRICING

Importance for Prelims: Economy



Govt considering subsidy to offset rise in global prices of P&K fertilisers' rawmaterial.

- Farmers buy fertilisers at MRPs (maximum retail price) below their normal supplyand-demand-based market rates or what it costs to produce/import them.
- The difference between the retail price and production cost/domestic price is givenas subsidy to manufacturers.

Present regime – Partial DBT (Since April 2018)

- The subsidy goes to fertiliser companies, although its ultimate beneficiary is thefarmer who pays MRPs less than the market-determined rates.
- Manufacturers of fertilizers (urea) receive 100% of subsidy after fertiliser

is delivered to the farmer, and the latter's identity viz. Aadhaar is captured on the point of sale (PoS) machine at the dealer's shop.

- Therefore, the subsidy continues to be routed through manufacturers even though the sale of fertilizer is being verified using Aadhaar ecosystem
- The manufacturers sell urea at the maximum retail price (MRP) controlled by the Centre, which is kept at a low level. They also get subsidy reimbursement on unit specific basis under the new pricing scheme (NPS).
- The MRPs of non-urea fertilizers' are decontrolled or fixed by the companies. The Centre, however, pays a flat per-tonne subsidy on these nutrients to ensure they are priced at "reasonable levels (based on Nutrient based Subsidy scheme)

Recent proposal:

- At present, the Centre is following a "no denial" policy. Anybody, non-farmers included, can purchase any quantity of fertilisers through the PoS machines. It leads to bulk purchase of urea that is used for non agri purposes.
- Hence, government is considering to put a cap on the maximum amount of fertilisers anybody can buy during kharif/rabi seasons.

Topic 26. CAIRN ENERGY – AIR INDIA DISPUTE

Importance for Prelims: Economy

Recently, the British oil company Cairn Energy Plc is suing Air India in New York to seize its assets to enforce the \$1.2 billion arbitration award it won against the Indian government in a retrospective tax dispute.

Cairn Energy-Air India dispute

- In 2020, a three-member international arbitral tribunal had ruled an unanimous verdict that the Indian government was in breach of the guarantee of fair and equitable treatment.
- It was against the India-UK bilateral treaty and that the breach caused a loss to the British energy company.
- It awarded Cairn \$1.2 billion in compensation that India was liable to pay.
- The Cairn has moved a court in the South District of New York against Air India and India has also challenged the arbitration award in Netherlands.

Retrospective tax demand

- The arbitration was initiated by Cairn, similar to what Vodafone did for a breach relating to India's 2012 retrospective amendments to tax laws.
- Retrospective Taxation is a combination of "retrospective" and "tax" where "retrospective" means taking effect from a date in the past and "tax" refers to a new or additional levy of tax on a specified transaction.
- It effectively allows a country to pass a rule on taxing certain products, items or services, and deals, and charge companies from a time before the date on which the law is passed.

Permanent Court of Arbitration (PCA)

- It was established in 1899 to facilitate arbitration and other forms of dispute resolution between states.

- It is an intergovernmental organization dedicated to serving the international community in the field of dispute resolution.
- The PCA has a three-part organizational structure consisting of: Administrative Council that oversees its policies and budgets, Panel of independent potential arbitrators known as the Members of the Court, and Secretariat, known as the International Bureau, headed by the Secretary-General.

Topic 27. G 20

Importance for Prelims: International Organisations





Leaders of the world's largest economies back "voluntary licensing" of Covid-19 vaccine patents, the draft conclusions of a summit show, watering down a US push for waivers and earlier commitments to supply more funds to the World Health Organization.

- The G20 is an informal group of 19 countries and the European Union, with representatives of the International Monetary Fund and the World Bank.
- The G20 membership comprises a mix of the world's largest advanced and emerging economies, representing about two-thirds of the world's population, 85% of global gross domestic product, 80% of global investment and over 75% of global trade.

G20 Members

- The members of the G20 are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.
- Spain as a permanent, non-member invitee, also attends leader summits.

Structure and Functioning of G20

- The G20 Presidency rotates annually according to a system that ensures a regional balance over time.
- For the selection of presidency, the 19 countries are divided into 5 groups, each having no more than 4 countries. The presidency rotates between each group.
- Every year the G20 selects a country from another group to be president.
- India is in Group 2 which also has Russia, South Africa, and Turkey.
- The G20 does not have a permanent secretariat or Headquarters. Instead, the G20 president is responsible for bringing together the G20 agenda in consultation with other members and in response to developments in the global economy.
- **TROIKA:** Every year when a new country takes on the presidency (in this case Argentina 2018), it works hand in hand with the previous presidency (Germany, 2017) and the next presidency (Japan, 2019) and this is collectively known as TROIKA. This ensures continuity and consistency of the group's agenda.

Topic 28. COLOMBO PORT CITY

Importance for Prelims: International Relations



Leaders of the world's largest economies back "voluntary licensing" of Covid-19 vaccine patents, the draft conclusions of a summit show, watering down a US push for waivers and earlier commitments group a lot of funds to the world Health Organization.

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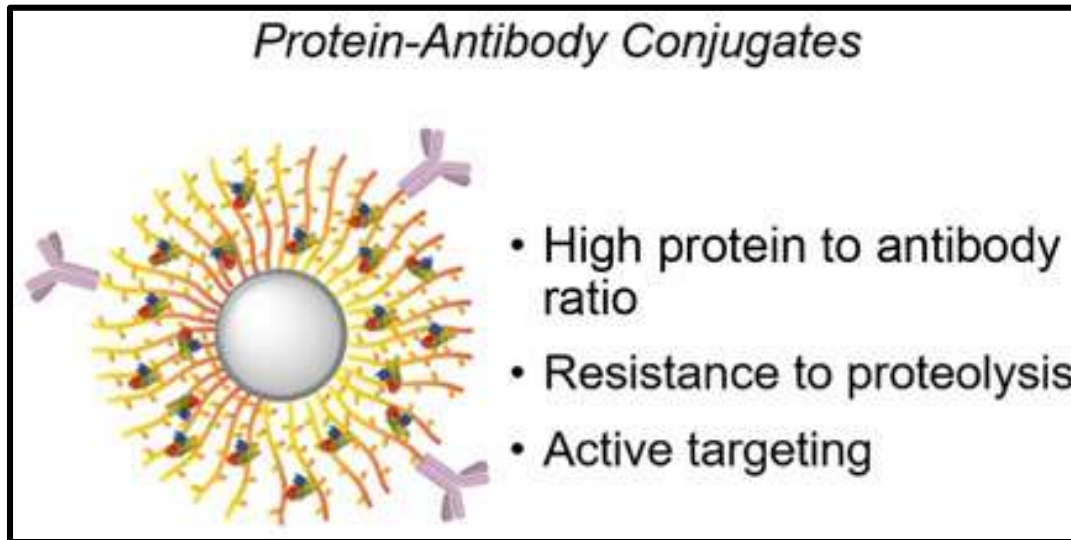
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Topic 29. PROTEIN – ANTIBODY CONJUGATES

Importance for Prelims: Science & tech



Recently, the researchers from University of Massachusetts have tested the mechanism 'Protein–Antibody Conjugates' in cell lines in the lab.

Protein–Antibody Conjugates

- The new concept, Protein– Antibody Conjugates or PACs, combines two different approaches to drug delivery:
- One is biologics, where the idea is to target a defective protein in the system by delivering proteins to it.
- The other approach is to use antibodies for drug delivery.
- The antibodies are something the body produces to detect a foreign substance inside the body.
- The Protein–antibody conjugates or PACs, developed by the group, which have a protein attached to the antibody such as pancreatic cancer cells.

Significance of Protein–Antibody Conjugates

- The antibody plays the role of the address and indicates the cell where the drug should precisely be delivered.
- The biology involves complexity and this method may well fail if it is not

tuneable.

- It combines concepts of biologics and antibody–drug conjugates to produce protein– antibody conjugates that can be used for targeted drug delivery.

What is antibody conjugation?

- Antibody conjugation, also known as antibody labeling, is a technique for modification of antibodies which involves with the attachment of a specific tag to an antibody.
- These labeled antibodies can be used to isolate and purify a protein of interest from a complex mixture, usually cells, tissues or whole organisms.
- Horseradish peroxidase (HRP) is a commonly used enzyme for conjugation of antibodies.

Topic 30. PALEOART

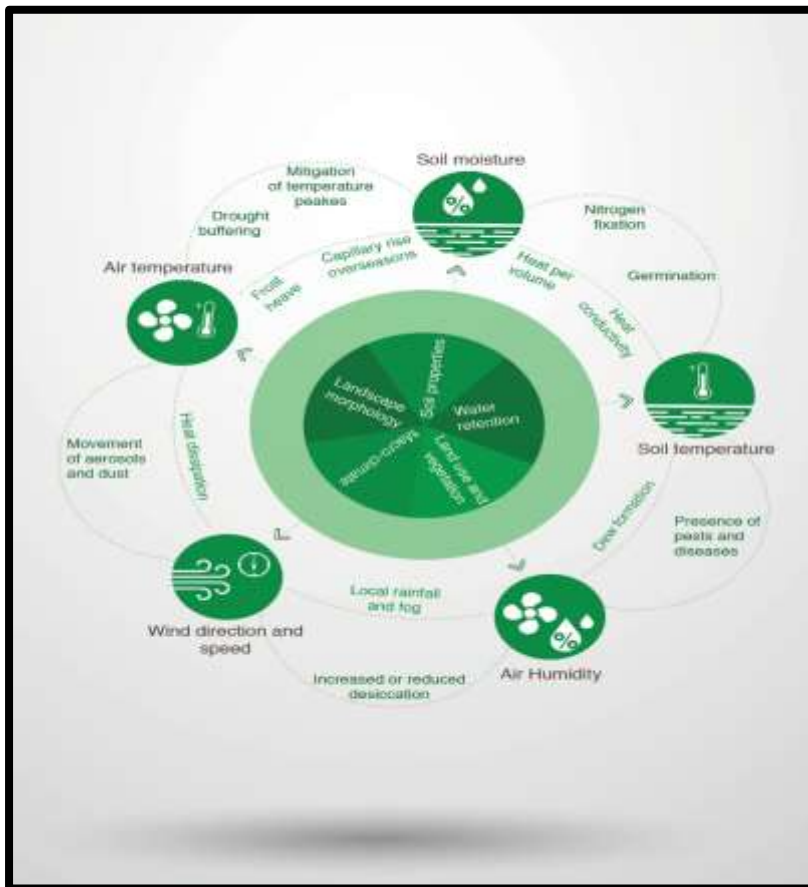
Importance for Prelims: Art & Culture

In the early nineteenth century, artists mingled science with fantasy to recreatedinosaurs for in style creativeness, often exhibiting them in apocalyptic forests with anerupting volcano within the background.

- It is a genre of art in which the artist depicts prehistoric life based on scientificevidence.
- It began in 1800s, with the discovery of the first fossils from the Mesozoic era.
- The Paleoart is continuously adjusting to new evidence, as one small discovery cancompletely distort the dinosaurs we have imagined for so long.
- While paleoart is typically defined as being scientifically informed, it is often thebasis of depictions of prehistoric animals in popular culture, which in turn influencespublic perception of and fuels interest in these animals.
- The term “paleoart” which is a portmanteau of paleo, the Ancient Greek word for“old,” and “art” was introduced in the late 1980s by Mark Hallett for art that depictssubjects related to paleontology.

Topic 31. MICRO CLIMATIC SHIFTING

Importance for Prelims: Geography



Gujarat districts to experience droughts while another faces floods in the same season. Drought-prone districts like Jamnagar, Rajkot, Surat, and Valsad have witnessed a shift towards extreme floods and storm surges in the last decade. These changing patterns are due to microclimatic changes.

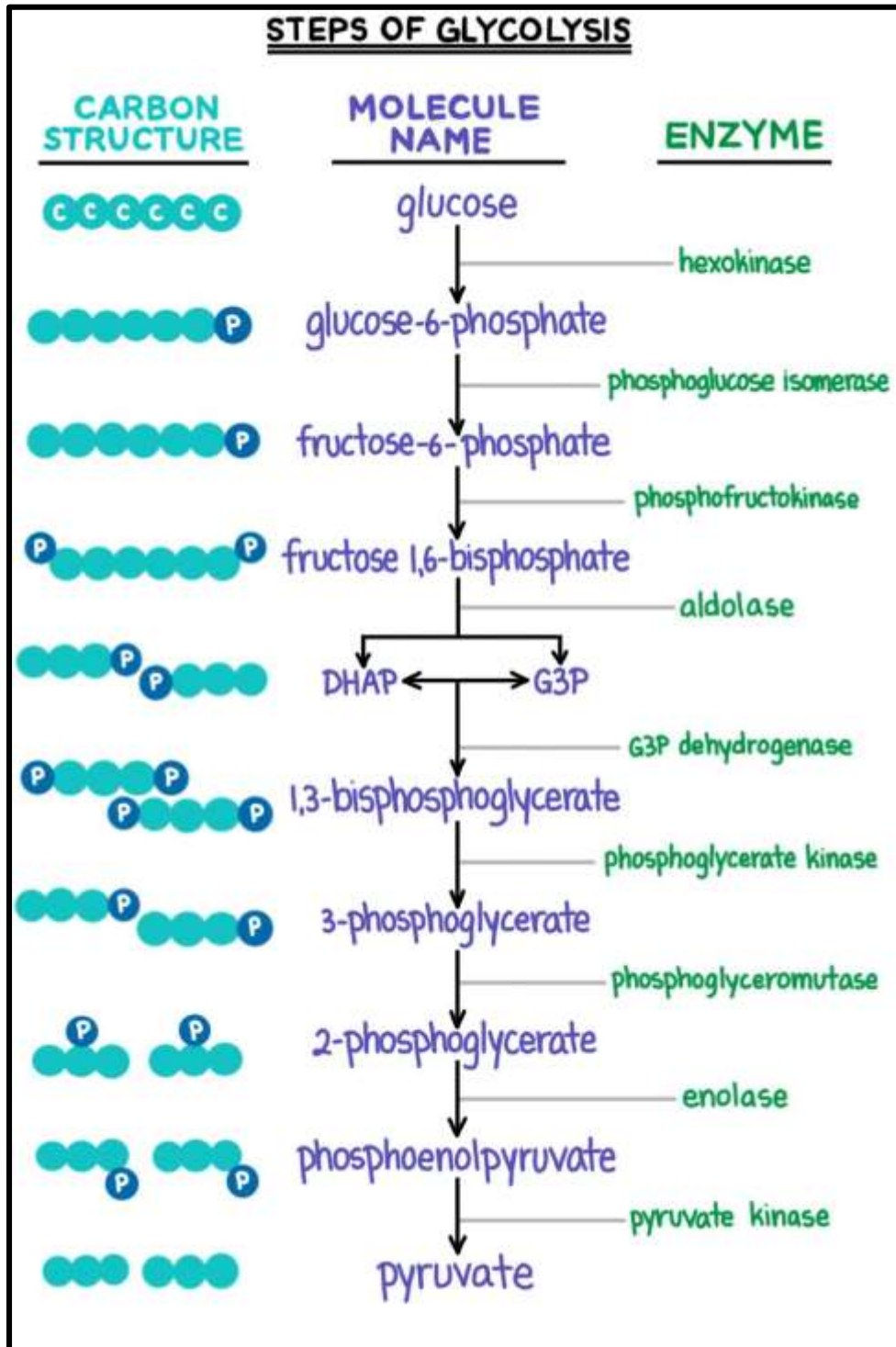
Micro climatic zone shifting

- The micro climatic zones are regions where the weather is different from the surrounding areas.
- The major reasons identified for the micro climatic zone shifting are disappearing wetlands, change in land use patterns, encroachment on natural ecosystems and urban heat Island.
- The urban heat Island occurs when a city or region experiences high temperatures as compared to its nearby rural areas.

- These urban heat Island traps heat locally and is a major cause of micro climaticzone shifting

Topic 32. GLYCOLYSIS

Importance for Prelims: Science & tech



Top doctors in key Covid wards are guarded in their reception to the 2-DG (2-deoxy-D-Glucose) drug the Centre launched Monday granting emergency use approval and saying it'll cut back recovery time and oxygen dependency for

Covid-19 patients.

- Their accord is that the principle behind 2-DG, historically used as a cancerdrug, is well-established. It inhibits glycolysis.

Glycolysis

- Glycolysis is that the method within which aldohexose is broken down to provide energy.
- It produces 2 molecules of pyruvate, ATP, NADH and water. the method takes place within the cytosol of the cell living substance, within the presence or absence of chemical element.
- Glycolysis is that the primary step of metastasis. within the absence of oxygen, the cells take tiny amounts of ATP through the method of fermentation.
- This metabolic pathway was discovered by 3 German biochemists- Gustav Embden, Otto Meyerhof, and Jakub Karol Parnas within the early 19th century and is known because the EMP pathway (Embden–Meyerhof–Parnas).

Topic 33. AMPHOTERICIN- B

Importance for Prelims: Science & tech



An anti-fungal drug used in the treatment of a rare infection called mucormycosis, or “black fungus”, is in short supply across states in India.

- It is fungistatic or fungicidal depending on the concentration obtained in body fluids and the susceptibility of the fungus.
- The antibiotic is without effect on bacteria, rickettsiae, and viruses.
- The drug acts by binding to sterols (ergosterol) in the cell membrane of susceptible fungi.
- It creates a transmembrane channel and the resultant change in membrane permeability allowing leakage of intracellular components.
- Amphotericin B, a polyene, binds irreversibly to ergosterol, resulting in disruption of membrane integrity and ultimately cell death.

Importance of Amphotericin B

- It shows a high order of in vitro activity against many species of fungi.
- Histoplasma capsulatum, Coccidioides immitis, Candida species, Blastomyces dermatitidis, Rhodotorula, Cryptococcus

neoformans, *Sporothrix schenckii*, *Mucormucedo*, and *Aspergillus fumigatus* are all inhibited by concentrations of amphotericin B.

- It is a polyene antifungal antibiotic produced by *Streptomyces nodosus*, with antifungal activity.

Topic 34. C.K.SUBRAMANIA MUDALIAR

Importance for Prelims: Important Personalities

The province government has decided to alter papers regarding properties and assets closely-held by temples across the state — estimated to range over 44,000 — and build them on the market within the public domain, in line with a poll promise made by Chief Minister M K Stalin.

- K.Subramania Mudaliar (1878 – 1961) is renowned for his treatise on Periya Puranam. However, he was also a national who supported the freedom movement from his student days. When Swadesamitran G.Subramania Iyer came to Coimbatore, CKS and his friends wanted to require him in a very procession. They participated in many meetings addressed by Surendranath Banerjee and also Bipin Chandra Pal in Madras. Later, the lawyer CKS joined the boycott of foreign merchandise by adhering to the clarion call of Aurobindo Ghosh and V.O.Chidambaram Pillai. UN agency was popularly famed as the Kappalottiya Tamilan. He was concerned within the Swadeshi Steam Navigation Company and once Chidambaram Pillai was incarcerated and placed within the Coimbatore prison, CKS fought with the authorities and delivered to light the sufferings endured by him. A grateful V.O.C Pillai named his third son as Subramaniam and his female offspring as Meenakshi once the patriotic CKS couple. K.S used nationalistic songs to hold out his info throughout those days. He was always enamoured by the magnetic speeches of Bipin Chandra Pal. His wife Meenakshi was terribly supportive and stood shoulder to shoulder with him in the Independence struggle.

Topic 35. CRPTOCURRENCY

Importance for Prelims: Economy

The price of the famously volatile digital currency fell nearly 30% at one point after the China Banking Association warned member banks of the risks associated with digital currencies. The decline narrowed to below 10% in the afternoon, but Bitcoin had still lost about \$70 billion in market value in 24 hours.

- A cryptocurrency or crypto, is a virtual currency secured by cryptography. It is designed to work as a medium of exchange, where individual ownership records are stored in a computerised database.
- The defining trait of a cryptocurrency is that they are not issued by the government agency of any country making them immune against any interference and manipulation from them.
- As per computer experts, any system that falls under the category of cryptocurrency must meet the following requirements.:
- Absence of any centralised authority and is maintained through distributed networks. The system maintains records of cryptocurrency units and who owns them. The system decides whether new units can be created and in case it does, decides the origin and the ownership terms. Ownership of cryptocurrency units can be proved exclusively cryptographically.
- The system allows transactions to be performed in which ownership of the Cryptographic units is changed.

Types of Cryptocurrency

- The first type of crypto currency was Bitcoin, which to this day remains the most used, valuable and popular. Along with Bitcoin, other alternative cryptocurrencies with varying degrees of functions and specifications have been created. Some are iterations of bitcoin while others have been

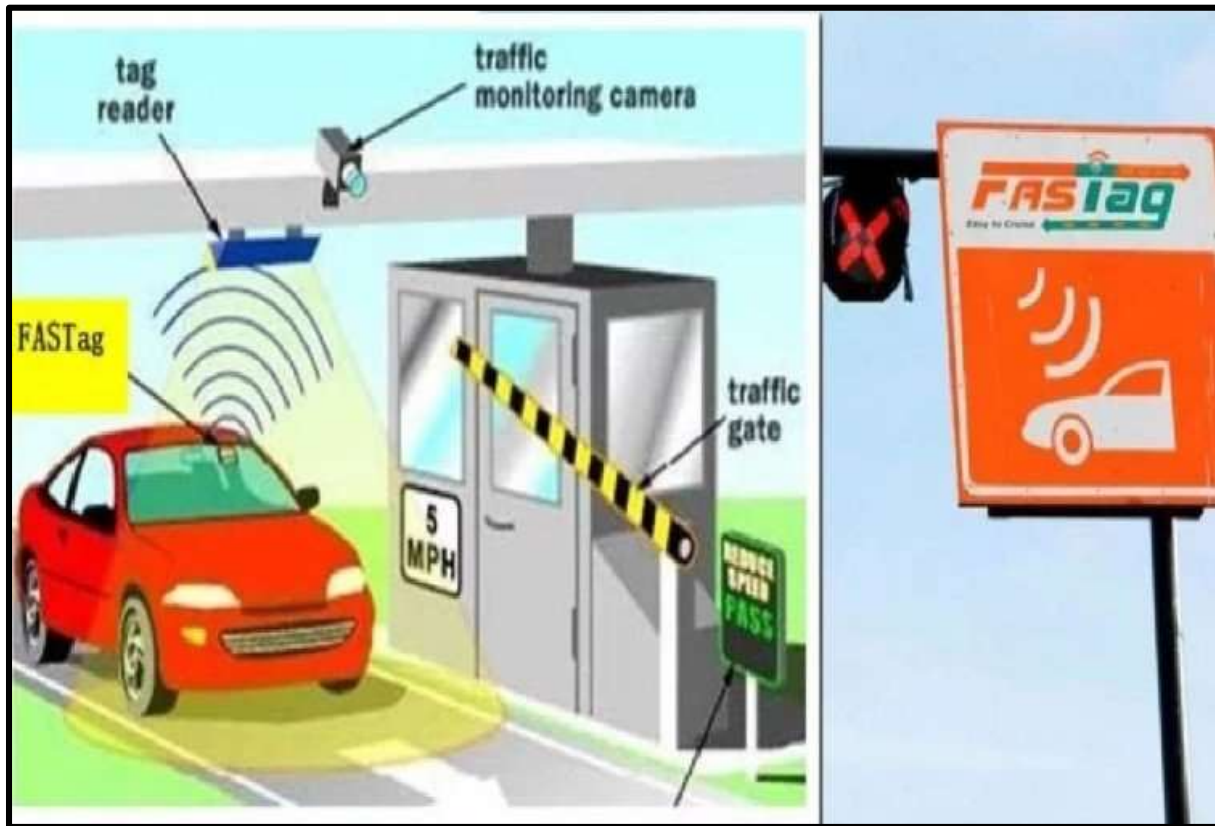
created from the ground up Bitcoin was launched in 2009 by an individual or group known by the pseudonym “Satoshi Nakamoto. As of March 2021, there were over 18.6 million bitcoins in circulation with a total market cap of around \$927 billion.

- The competing cryptocurrencies that were created as a result of Bitcoin’s success are known as altcoins. Some of the well known altcoins are as follows:

- ✓ Litecoin
- ✓ Peercoin
- ✓ Namecoin
- ✓ Ethereum
- ✓ Cardana

Topic 36. FASTag& RFID

Importance for Prelims: Science & tech



E-way bill integrated with FasTag, RFID; GST authorities to induce period data of commercial vehicles.

- The FASTag could be a reloadable tag that enables automatic deduction of toll without having to prevent for polishing off the money dealings.
- The tag uses radio frequency identification (RFID) technology and is mounted on the windscreen of the vehicle once active.
- The tag is valid for 5 years and comes in seven totally different colours — violet, orange, yellow, green, pink, blue, black. every colour is assigned to a selected class of vehicles.
- It was extended in April 2016, and the Government created it obligatory from December one, 2017 for all new cars and trucks to be fitted with a FASTag before they were sold .
- To encourage the employment of FASTags, the National road Authority of India (NHAI) refunds five-hitter of the overall monthly transactions.
- Indian Highways Management Company restricted (IHMCL) (a company incorporated by National Highways Authority of India) and National Payment Corporation of India (NPCI) square measure implementing this program.
- FASTag is presently operational at each, national and state highways.

Radio-Frequency Identification (RFID)

- Radio-Frequency Identification (RFID) is that the use of radio waves to read and capture information hold on on a tag connected to an object.
- A tag may be browse from up to many feet away and doesn't need to be withindirect line-of-sight of the reader to be tracked.

Topic 37. UNESCO WORLD HERITAGE SITES

Importance for Prelims: Environment



Six sites have been added to India's tentative list of UNESCO world heritagesite

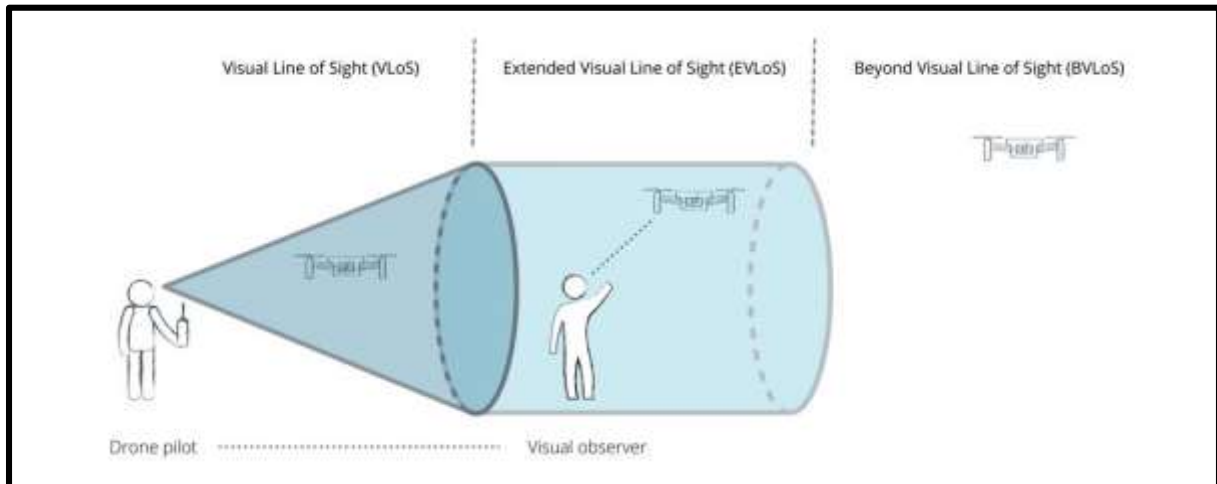
- Six of the nine sites submitted by the Archaeological Survey of India had been accepted by UNESCO for inclusion in the tentative list, which is a requirement before the final nomination of any site.
- The recently-included proposals are, Maratha military architecture in Maharashtra, Hire Bengal megalithic site in Karnataka, Bhedaghat-Lametaghat of Narmada Valley in Madhya Pradesh, Ganga ghats in Varanasi, Temples of Kancheepuram and Satpura Tiger Reserve in Madhya Pradesh.
- These proposals will remain in tentative list for a year after which the government will decide which one of them to push for in their final dossier to UNESCO, officials said.
- With the addition of these six sites, the UNESCO has 48 proposals in tentative list of India.
- As per Operational Guidelines, 2019, it is mandatory to put any

monument/site on the Tentative List (TL) before it is considered for the final nomination dossier.

- India has 48 sites in the TL as of now.
- As per rules, any country can submit the nomination dossier after one year of it being on the TL.

Topic 38. MEDICINE FROM SKY PROJECT

Importance for Prelims: Current Events



Recently, the ‘Medicines from Sky’ project has received a shot in the arm, with the Ministry of Civil Aviation and the Director General of Civil Aviation according a conditional nod to the Telangana government for deployment of drones for delivery of Covid-19 vaccines.

Medicines from Sky Project

- The Telangana government, World Economic Forum and HealthNet Global, has signed a collaboration agreement for the ‘Medicine from the Sky’ project.
- A feasibility study is being planned to study drone-based delivery of blood, vaccines, medical samples and long tail medicine.
- The Central government, in exercise of powers conferred by Rule 70 of the UAS Rules, 2021, has granted conditional exemption to Telangana for the purpose of trying out drones for delivery.
- The consortiums shortlisted by Telangana will be able to start trials on ground to build a safety case for regulators for considering the Beyond Visual Line of Sight (BVLOS) range.

Key Highlights

- The permission has been granted for conducting experimental delivery of

Covid-19 vaccines within Visual Line of Sight (VLOS) Range.

- The permission exemption is valid for one year or until further orders, subject to the conditions laid out.
- It is proposed to take up BVLOS flights in Vikarabad district of Telangana with the Area Hospital as the take-off site and various PHCs and sub-centres as the landing sites.
- The programme will be for 24 days, where the eight selected consortia would be divided into four batches of two consortia, and each batch would perform the sorties for 6 days.

Topic 39. INDEPENDENT COLLEGIUM

Importance for Prelims: Governance

Recently, the Association for Democratic Reforms has filed a petition before the Supreme Court seeking formation of a “neutral and independent collegium or selection committee” for the appointment of members of the election commission.

- The petition cited the 255th Law Commission Report that recommended that the appointment of commission members ought to be created by the President.
- The president shall seek advice from a three-member collegium or choice committee, consisting of the prime minister, the leader of Opposition of the Lok Sabha and the chief justice of India.
- Dinesh Goswami Committee in its Report of 1990 counseled for the effective consultation with neutral authorities like justice of India.
- The fourth Report of the Second body Reform Commission also recommended for the constitution of a neutral and freelance collegium:
- It should be headed by the Prime Minister with the Speaker of the Lok Sabha, the Leader of Opposition within the Lok Sabha, the Law Minister and therefore the Deputy Chairman of the Rajya Sabha as its members.
- Justice Tarkunde Committee in its Report of 1975 counseled that the members of election commission should be appointed by the President on the recommendation of a Committee consisting of the Prime Minister, the Leader of the Opposition within the Lok Sabha and therefore the justice of India.

Current procedure for appointments in commission of India

- The commission shall consist of the chief election commissioner and such number of alternative election commissioners, if any, because the

president could from time to time fix.

- The appointment of the chief election commissioner and alternative election commissioners shall be created by the president.
- When the other election commissioner is therefore appointed, the chief election commissioner shall act because the chairman of the commission.
- The president may also appoint when consultation with the election commissions such regional commissioners as he could contemplate necessary to assist the election commission.

Topic 40. HAIYANG 2D

Importance for Prelims: Science & tech

Recently, China has launched a long March-4B rocket carrying the Haiyang-2D (HY-2D) satellite from the Jiuquan Satellite Launch Centre in northwest China.

- China has severally developed and launched seven Haiyang satellites.
- It is called after the Chinese word for “ocean” and given the “HY” designation for short.
- The country launched its 1st ocean observation satellite, the HY-1A, on May 15, 2002.

About Haiyang-2D (HY-2D) satellite

- It was developed by the China Academy of Space Technology, whereas the carrier rocket was developed by the Shanghai Academy of Spaceflight Technology.
- It can kind a constellation with the HY-2B associated HY-2C satellites to build an all-weather and uninterrupted dynamic ocean atmosphere observation system.
- The constellation can support the country's early warning and prediction of marine disasters, its property development and utilization of ocean resources.
- It can help in effective response to world climate change moreover as ocean analysis.
- The aboard equipment allows the new satellite to produce info on the identification of vessels, and to receive, store and transmit buoy measuring data in China's offshore and different marine areas.
- The planned satellite network are capable of completing 80 % of the world's ocean surface wind monitoring at intervals six hours.
- The follow-up network of HY-2 satellites can offer knowledge support marine disaster relief, meteorology, scientific applications.

Topic 41. NOTIFIABLE DISEASE

Importance for Prelims: Disaster Management

| Disease | Correct, n (%) | Incorrect, n (%) |
|---|----------------|------------------|
| MRSA | 15 (19) | 64 (80) |
| Chickenpox | 27 (34) | 50 (63) |
| Measles | 38 (48) | 39 (49) |
| Influenza | 61 (76) | 15 (19) |
| Glandular fever | 65 (81) | 11 (14) |
| Malaria | 69 (86) | 10 (13) |
| Food poisoning | 70 (88) | 7 (8) |
| Croup | 75 (94) | 1 (1) |
| Tuberculosis | 78 (98) | 2 (2) |
| Meningococcal disease | 79 (99) | 1 (1) |
| MRSA, methicillin resistant <i>S aureus</i> . | | |

Centre asks states and UTs to make black fungus notifiable disease under Epidemic Diseases Act.

- A notifiable disease is any disease that is required by law to be reported to government authorities.
- The collation of information allows the authorities to monitor the disease, and provides early warning of possible outbreaks.
- The World Health Organization's International Health Regulations, 1969 required disease reporting to the WHO in order to help with its global surveillance and advisory role.

Significance of Notifying Disease:

- Making a disease legally notifiable by doctors and health professionals allows for intervention to control the spread of highly infectious diseases.
- Registered medical practitioners need to notify such diseases in a proper form within three days, or notify verbally via phone within 24 hours depending on the urgency of the situation.
- This means every government hospital, private hospital, laboratories, and

clinics will have to report cases of the disease to the government.

- The process helps the government keep track and formulate a plan for elimination and control.
- In less infectious conditions, it improves information about the burden and distribution of disease.

Other Notified Diseases:

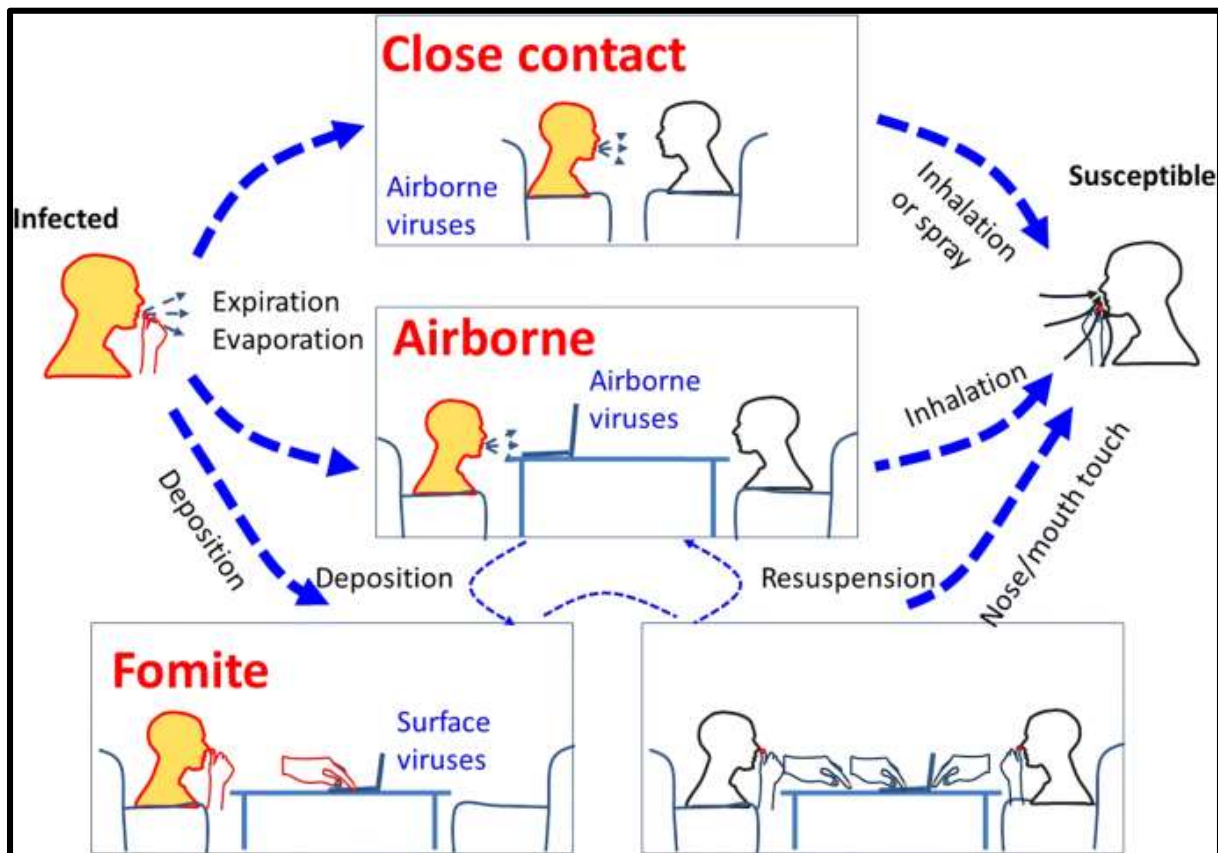
- The Centre has notified several diseases such as cholera, diphtheria, encephalitis, leprosy, meningitis, pertussis (whooping cough), plague, tuberculosis, AIDS, hepatitis, measles, yellow fever, malaria dengue, etc.

Epidemic Diseases Act (EDA)

- The Epidemic Diseases Act (EDA) was enacted by the colonial government in India to curb the spread of the bubonic plague in erstwhile Bombay.
- Provisions of the 1897 Epidemic Diseases Act: The Act, which consists of four sections, aims to provide “for the better prevention of the spread of Dangerous Epidemic Diseases.”
- Section 2 empowers state governments/UTs to take special measures and formulate regulations for containing the outbreak.
- The state may determine in what manner and by whom any expenses incurred (including compensation if any) shall be defrayed.
- It also provides penalties for disobeying any regulation or order made under the Act.
- It also gives legal protection to the implementing officers acting under the Act.

Topic 42. AEROSOL & DROPLET TRANSMISSION

Importance for Prelims: Science & tech



Aerosols and Droplets are Key Transmission Modes of COVID-19 Virus, Can Travel in Air Up to 10 Meters: Centre

- Aerosols and droplets are key transmission modes of the Covid-19 virus, associate degraded while droplets fall inside 2 meters from an infected person, aerosols is carried in the air up to ten meters.

Aerosol Transmission

- This new mode can be 'aerosols,' small liquid particles from the respiratory tract generated once somebody exhales, talks, or coughs.
- They will float within the air and may contain live viruses in contrast to droplets that do not float however relax on ground or any surface in one-two minutes after exhalation.
- When inhaled, these aerosols build everyone prone to virus infection.

- Confirmed presence of the virus in air-filters and ducts in hospitals with Covid-19 patients additionally implies that it predominantly transmits within the sort of aerosol.
- The widespread presence of the virus and its ability to unfold through aerosols suggest that a lockdown can have stripped to no impact on Covid-19 spread.

Aerosols

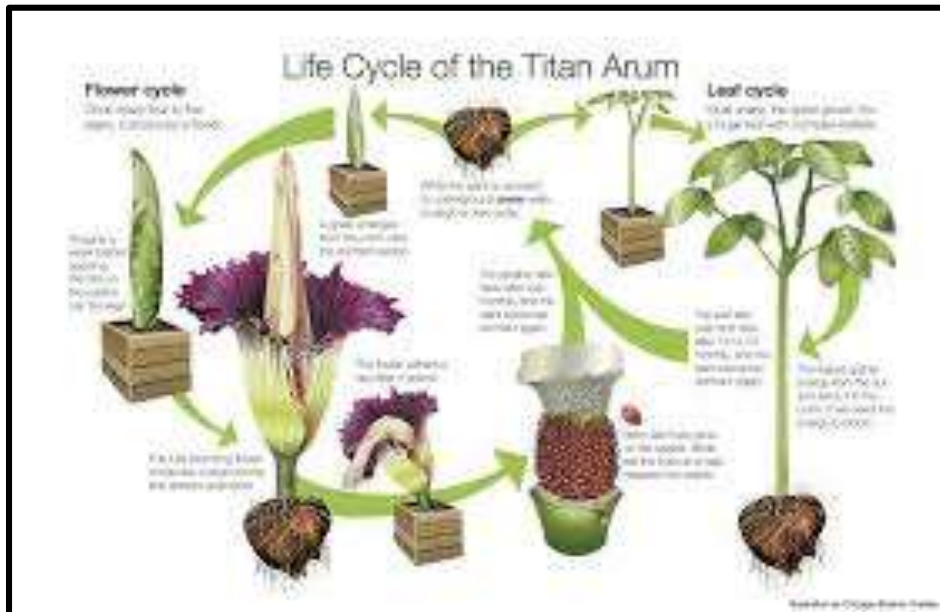
- Aerosols are outlined as a mix of liquid or solid particles suspended in a gaseous or liquid atmosphere.
- In the atmosphere, these particles are principally placed within the low layers of the atmosphere (< 1.5 km) since aerosol sources are placed on the terrestrial surface.
- However, sure aerosols will still be found within the layer, particularly volcanic aerosols ejected into the high altitude layers.

Droplet Transmission

- The droplets spread throughout inborn reflex, speaking, and coughing by an infected person can unfold infections.
- The infections may spread by touching the nose and mouth with the hands contaminated with infectious droplets.
- The droplets are therefore minute that they travel only a brief distance before falling. The people close may contract infections.

Topic 43. FOUL SMELLING CORPSE FLOWER

Importance for Prelims: Environment



Recently, over a thousand people queued up outside an abandoned gas station in San Francisco's Bay Area to catch a glimpse of the extremely rare and aptly named 'corpse flower'.

Corpse Flower

- It is known for its putrid smell, which is often compared to that of rotting flesh.
- It is a flowering plant, which is native to the rainforests of Sumatra in Indonesia.
- The scientific name of the rare plant, *Amorphophallus titanum*, quite literally translates to giant, misshapen phallus
- The plant is native to Indonesia but its saplings have been cultivated in zoos, botanical gardens and greenhouses around the world over the years.
- In about a decade, the 'corpse flower' can grow to be up to 10 feet tall and unveil two of its key components: A deep red skirt-like petal known as the spathe and a yellow rod-like 'spadix'
- The crucial component of the plant is the 'corm', a fleshy underground

plant stem which acts as a storage organ where the corpse plant's energy is stored.

- The corpse flower is known to be one of the world's largest 'unbranched inflorescence' or a stalk bearing a cluster of flowers.
- The plant emits the distinct smell only when it is in bloom, which happens once every 10 years or so and only for a brief period of time.

Why is corpse flower so rare?

- The plant population appears to be dwindling in its native land of Sumatra due to deforestation for crops and lumber.
- It was listed as an **endangered plant** in 2018 by the International Union for Conservation of Nature (IUCN).
- It is not easy to preserve the corpse flower outside its natural habitat.
- It requires a very specific level of heat and humidity to thrive.
- The lack of genetic variety leads to inbreeding, which means closely related plants are bred with one another.
- The seeds of the plant, known as recalcitrant seeds, are not easy to store either.

Topic 44. ICEBERG A 76

Importance for Prelims: Environment

World's largest iceberg breaks off in Antarctica as glaciers retreat.

- The Ice Berg A- 76 is 170 kilometres long and 25 kilometres wide. The ice berg was spotted by a European Space Agency satellite called Copernicus Sentinel. It is a two-satellite constellation that orbits the earth's poles.
- The Ice Berg is now floating on the Weddell Sea. Weddell Sea is a large bay in the Western Antarctic.
- The satellites confirmed the observations made by British Antarctic Survey.
- The British Antarctic Survey was the first to notice the breakaway.

Impact of the ice berg on sea level

- Every time an ice berg calves out from Antarctica, it adds up to the rising sea levels.
- However, in this case, the ice shelf from which this berg carved out was already floating on water.
- The Ice Shelf from which A-76 calved out is called **Ronne Ice Shelf**.

Topic 45. INS RAJPUT

Importance for Prelims: Defence

Recently, the Ministry of Defence has announced that the INS Rajput will bedecommissioned after 41 years of service.

About INS Rajput

- It is the first destroyer of the Indian Navy commissioned in 1980.
- It is the lead ship of the Kashin-class destroyers built by the erstwhile USSR.
- It was constructed in the 61 Communards Shipyard in Nikolaev (present-dayUkraine) under her original Russian name ‘Nadezhny’ meaning ‘Hope’.
- The ship had the motto “Raj Karega Rajput”, and participated in several operationsaimed at keeping the nation secure.
- The Operations include Operation Aman off Sri Lanka to assist IPKF, OperationPawan for patrolling duties off the coast of Sri Lanka, Operation Cactus to resolvehostage situation off the Maldives, and Operation Crowsnest off Lakshadweep.
- It was also the first Indian Naval Ship to be affiliated with an Indian Army regimenti.e. the Rajput Regiment.

Topic 46. WORLD BEE DAY

Importance for Prelims: Environment



On the occasion of World Bee Day, Union Agriculture Minister launched the project to establish a regional honey quality testing laboratory at the Indian Agricultural Research Institute (IARI), Pusa, New Delhi.

- It has been setup for quality testing of honey and other products of beekeeping under the National Beekeeping and Honey Mission. 300 crore has been approved for the overall promotion of **National Beekeeping & Honey Mission (NBHM)**, development of scientific beekeeping and achieving the target of “sweet revolution”.
- Besides, Rs 500 crore has been allocated to NBHM by the Centre under the Atmanirbhar Bharat Campaign.
- A world-class state of art Honey Testing Lab has been established at

National Dairy Development Board (NDDB), Anand with the help of Rs 5 crore.

- The UN has designated 20 May as World Bee Day. The fourth observance of World Bee Day was celebrated by the FAO on 20 May 2021 under the theme “**Beeengaged – Build Back Better for Bees**”.

Topic 47. INS MAKAR

Importance for Prelims: Defence

INS Makar, equipped with side scan sonars, to go looking for the missing

- INS Makar (J31) is that the lead ship of Makar-class of survey catamarans used for hydrographic survey by the Indian Navy. It had been built indigenously in India by Alcock Ashdown restricted, Gujarat.
- INS Makar is tasked with enterprise oceanography surveys for producing navigational charts and is capable of collection marine environmental information by conducting restricted oceanographic surveys.
- Equipped with four engines and 2 bow thrusters, Makar has an Integrated Platform Management System that mixes the vessel's power, navigation and propulsion systems.
- Makar is also fitted with a wide variety of survey equipment that has sounding systems, bottom profilers and a complicated electronic positioning system.
- Air conditioned processing facilities are obtainable on board Makar's caravan.

Topic 48. DALAI LAMA

Importance for Prelims: Important personalities

Dalai Lama's successor has to be approved by China: Beijing white paper on Tibet. The Dalai Lama is 85 years old now and the issue of his successor has gained prominence in the last couple of years due to his advanced age.

- Following the Buddhist belief in the principle of reincarnation, the current Dalai Lama is believed by Buddhists to be able to choose the body into which he is reincarnated.
- That person, when found, will then become the next Dalai Lama.
- According to Buddhist scholars it is the responsibility of the High Lamas of the Gelugpa tradition and the Tibetan government to seek out and find the next Dalai Lama following the death of the incumbent.
- If more than one candidate is identified, the true successor is found by officials and monks drawing lots in a public ceremony.
- Once identified, the successful candidate and his family are taken to Lhasa (or Dharamsala) where the child studies the Buddhist scriptures in order to prepare for spiritual leadership.
- But, According to China, there was a well-established procedure for recognizing the reincarnation of the Dalai Lama. One of the conditions was that the name of the successor was pulled out of golden urns found in the Jokhang Temple (one of the most sacred monasteries of Tibetan Buddhism situated in Lhasa) and the Potala Palace which was the residence of the Dalai Lama till he fled to India in 1959.
- The second was the reincarnation getting the approval of the Chinese government.

Dalai Lama

- Dalai Lama is a title given by the Tibetan people for the foremost spiritual leader of the Gelug or "Yellow Hat" school of Tibetan

Buddhism, the newest of the classical schools of Tibetan Buddhism.

- The 14th and current Dalai Lama is Tenzin Gyatso.
- The Dalai Lamas are believed to be **manifestations of Avalokiteshvara** or Chenrezig, the Bodhisattva of Compassion and the patron saint of Tibet.
- Bodhisattvas are realized beings inspired by a wish to attain Buddhahood for the benefit of all sentient beings, who have vowed to be reborn in the world to help humanity.

Topic 49. GHOLVAD SAPOTA

Importance for Prelims: Economy

Recently, a consignment of DahanuGholvad Sapota from Palghar district of Maharashtra was shipped to the United Kingdom in a major boost to exports of Geographical Indication (GI) certified products.

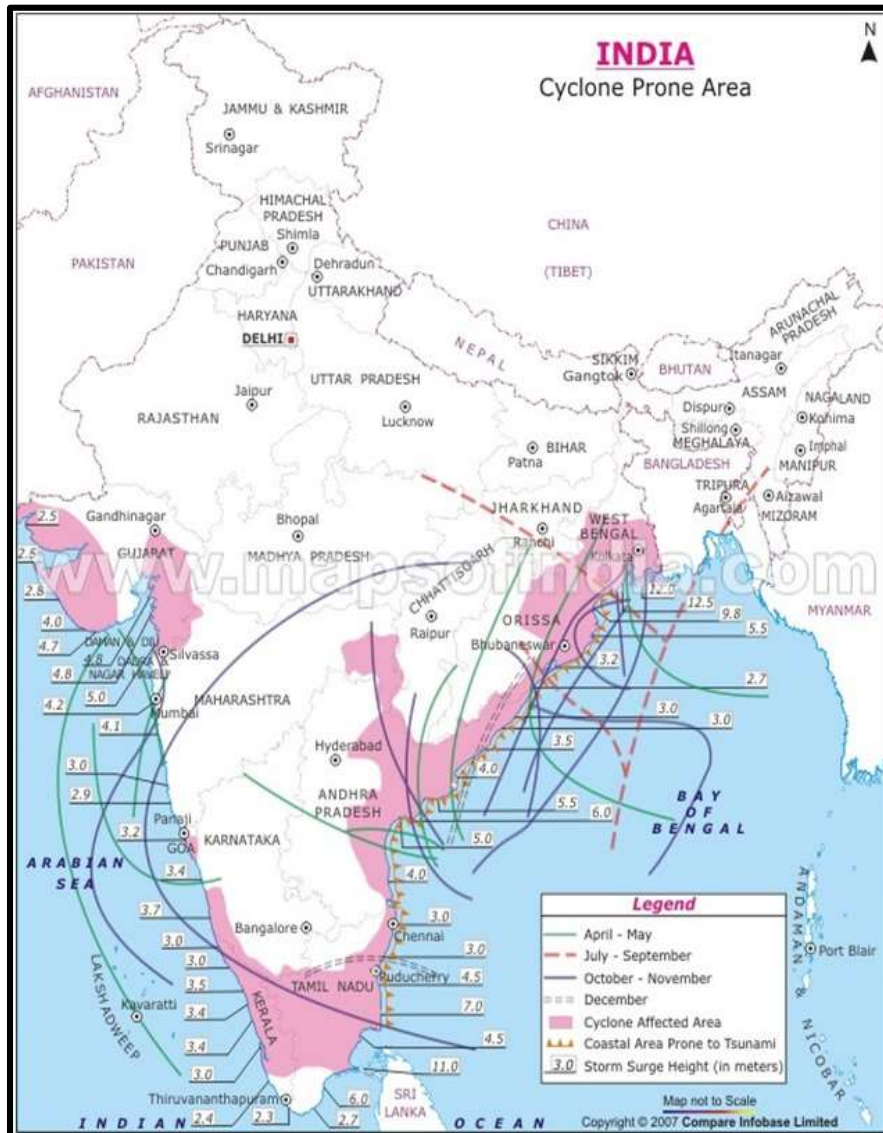
- The GI certification of Ghovad Sapota is held by Maharashtra Rajya ChikooUtpadakSangh.
- It is believed that the unique taste is derived from calcium rich soil of Gholvadvillage.
- The DahanuGholvad Sapota, sourced from the authorized GI users, were sortedand graded from the APEDA assisted and registered packhouse facility.

Cultivation of Sapota

- Sapota is grown in many states such as Karnataka, Gujarat, Maharashtra, TamilNadu, West Bengal and Andhra Pradesh.
- Karnataka is known to be the highest grower of the fruit, followed by Maharashtra.

Topic 50. PRE MONSOON SHOWER

Importance for Prelims: Geography



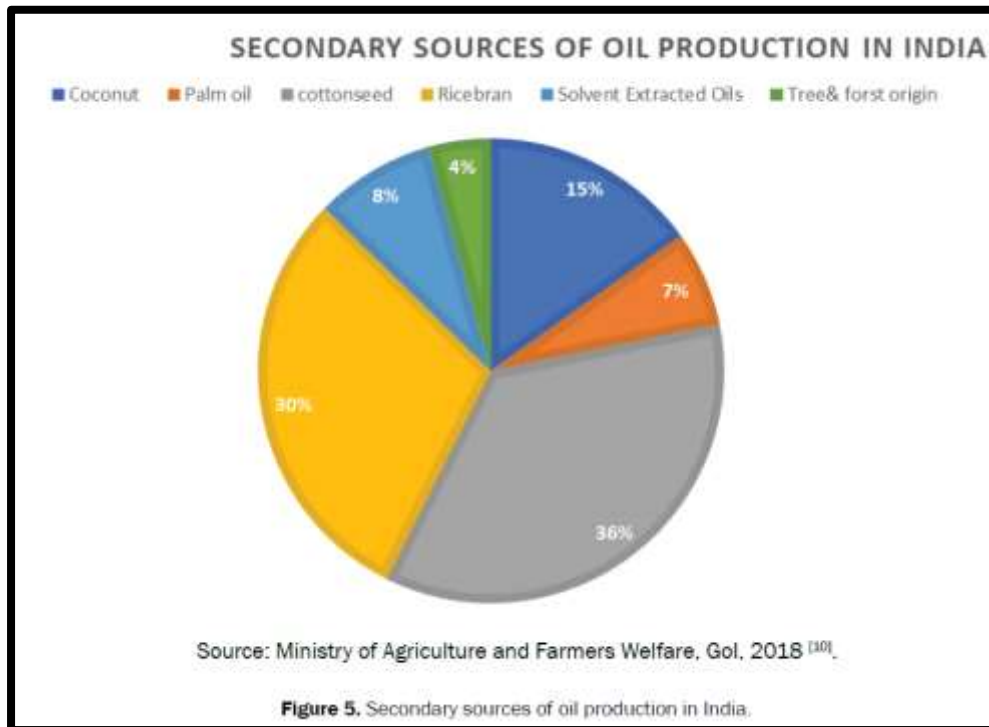
Good pre-monsoon showers and lower temperatures this month across the country will help retain soil moisture, helping kharif sowing which is expected to commence soon.

- Pre-monsoon shower or summer rain is formed due to the storm over the Bay of Bengal.
- It is a mixture of dry and moist winds. It at times gives rise to local storms, such as the occurrence of violent winds, heavy rain and hailstorms.

- These showers' effect can be seen in two ways such as in some states of northern India it reduces the intensity of heat waves, but it also comes with the blessing of showers in the Eastern and Southern India for the farmers.
- Different names of pre-monsoon showers are, Tea Shower in Assam, Kalbaishakh in West Bengal, Mango Shower in Kerala and Coastal areas of Karnataka, Cherry Blossoms/ Coffee showers in Kerala and some part of Karnataka.

Topic 51. OIL SEEDS PRODUCTION

Importance for Prelims: Economy



WTO member-countries are questioning India mainly concerning incentives to oilseed growers to spice up output. An incentive non-tariff based policy can boost oilseed output. It'll conjointly counter the US, the EU's objections in global organization.

- Country desires twenty five million tonnes of edible oils to satisfy its demand at current consumption level of 19 kilo per person p.a..
- Out of the whole demand, 10.50 million tonnes are made domestically from primary (Soybean, oilseed & Mustard, Groundnut, Sunflower, Safflower & Niger) and secondary sources (Oil palm, Coconut, Rice Bran, Cotton seeds & Tree Borne Oilseeds) and remaining half, is met through import. The seed production of the country has been growing imposingly.
- Despite this, there exists a niche between the demand and supply of oilseeds, which has necessitated sizeable quantities of imports.

Govt. Intervention:

- To increase domestic accessibility and cut back import dependency, a National Mission on Edible Oils (NMEO) is planned for next 5 years (2020-21 to 2024-25).
- NMEO covering 3 Sub-Missions to extend production of oilseeds and edible oils from Primary Sources (Annual Crops, Plantation Crops and Edible TBOs) Secondary Sources (Rice bran oil and Cotton seed oil)
- Consumer Awareness for maintaining edible oil consumption constant at 19.00 kg per person each year.
- The planned mission can aim to extend production from 33.88 to 47.80 million tonnes of oilseeds which is able to turn out 7.00 to 11.00 million tonnes of edible oils from Primary Sources by 2024-25. Similarly, edible oils from secondary sources can be doubled from 3.50 to 7.00 million tonnes.

National Food Security Mission on Oilseeds and feather palm

- During the 12th 5 Year plan, a replacement National Mission on Oilseeds and Oil Palm (NMOOP) was launched.
- Under NMOOP, mini Mission – II (MM – II) was dedicated to grease palm area expansion and productivity will increase.
- MM – II was enforced in 12 States – province, Telangana, Chhattisgarh, Tamil Nadu, Kerala, Gujarat, Karnataka, Odisha, Mizoram, Nagaland, Assam and Arunachal Pradesh w.e.f. 01.04.2014.
- Through NMOOP, the govt. aims to reinforce the provision of edible oils and cut back the import of edible oils by increasing the assembly and productivity of oilseeds and oil palm.
- It also aims to enhance the realm under plantation of Tree Borne Oilseeds (TBOs) – Olive, Mahua, Kokum, Wild Apricot, Neem, Jojoba, Karanja, Simaroba, Tung, Cheura and Jatropha.

Topic 52. PINK REVOLUTION

Importance for Prelims: Economy

Indonesia not suspended Indian buffalo meat imports, confirms Indian Embassy in Jakarta.

- The modernization of the meat and poultry processing sector in India is the Pink Revolution.
- Pink revolution is also denoted as a revolution for Onion production, pharmaceuticals and prawn production. Modernization is the mechanization and specialization of the standard of processes in the meat industry.
- Industrialization and upgraded technologies are necessary for the Indian entities to meet and maintain global standards. Also, adopting and developing mass production capacities help industries to be more productive.
- There is tremendous scope for the development of the domestic market because a significant number of the population of India still prefer to buy meat from the local shop instead of standard packaged meat.
- Furthermore, considering the increasing threat of zoonotic diseases, it is imperative that India maintains and builds quality facilities so that exports of the country do not get banned by other countries.

Topic 53. KALAKSHETRA FOUNDATION

Importance for Prelims: Culture

The Central government nominated 12 eminent artistes and musicians as members of the governing board of the Kalakshetra Foundation.

- Kalakshetra Foundation is an arts and cultural academy dedicated to the preservation of traditional values in Indian art and crafts, especially in the field of Bharatanatyam dance and Gandharvaveda music.
- It is based in Chennai.
- It was founded in 1936 by Rukmini Devi Arundale and her husband George Arundale.
- In 1994, an Act of the Parliament of India recognised the Kalakshetra Foundation as an “Institute of National Importance.”
- The Kalakshetra style of Bharatanatyam developed by Rukmini Devi Arundale is noted for its angular, straight, ballet-like kinesthetics, and its avoidance of Recakas and of the uninhibited throw (Ksepa) of the limbs.