

12 May 2019: UPSC Exam Comprehensive News Analysis

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Category: INTERNATIONAL RELATIONS

1. Pulwama reference cut for UN listing of Azhar

What's in the news?

- Concessions were made to secure the designation of Jaish-e-Mohammad chief Masood Azhar as a UN Security Council-sanctioned terrorist.
- This was revealed recently by Britain's most senior diplomat Simon McDonald.
- Mr. Simon McDonald asserted that the United Kingdom had played a "central role" in ensuring that the listing went through after talks with New Delhi and Islamabad.

2. 'Give Pakistan time and space to act on terror'

What's in the news?

- The U.K.'s Permanent Under Secretary, Foreign and Commonwealth Office, Simon McDonald says that the U.K. is consistently engaged in speaking to India and Pakistan about de-escalating tensions following February's Pulwama terror attack and the subsequent Balakot strikes.
- Simon McDonald was in Delhi this week for Foreign Office Consultations.

Below are excerpts from an interview Mr. Simon McDonald gave:

The Central Role which the U.K. Played:

- The U.K. played a central part in the designation of Masood Azhar at the UN Security Council 1267 committee.
- This was a collective effort, but the U.K. played a central part in the designation. It was the right thing to do and the U.K. are proud to play that central part.
- In India, there has been a controversy over the wording of the designation. The original proposal from the U.S., the U.K. and France included a reference to the Pulwama attacks and to terror attacks in Jammu and Kashmir carried out by Masood Azhar as leader of the JeM, but the final listing did not mention them.
- The detailed rubric is secondary to the fact that he has been designated. That was an Indian priority, and it has been achieved. So focus on the prize rather than the rubric.

Reference to Pulwama dropped as a concession to China?

- Anything that comes out of the UN is a negotiation and in a negotiation, a side has to make concessions in order to achieve the prize.
- It is the U.K.'s clear view that the prize has been achieved and the prize is what India was most focused on. The detail of the negotiation is now historical. The focus should not be on the detail of the negotiation.

Scaling down tensions between India and Pakistan: A possible U.K. hand?

- The U.K. — with very good links and lines to Delhi and Islamabad — was able to play a role.
- Only the U.S. and U.K. have the strength of relationship in Pakistan to get the access at the time of the tensions and the attention of the senior leadership that is necessary.

Has Pakistan taken the action it needed to take against groups such as the Jaish-e-Mohammad?

- This present government in Pakistan, knows that this is something which Pakistan has to tackle.
- Terrorism takes time to tackle.
- India may judge that action is not being taken quickly enough, but the journey has been started.

- There are a series of actions the Pakistanis need to take.
- They know they need to take them, and we are talking to them about the detail.
- The Pakistani government should be given some space. The fact that it doesn't happen on the turn of a dime is not a surprise, but what the present government in Pakistan is saying, is worth working with.

Another Balakot strike?

- The fear would be, that in the time it takes for this action, there could be another attack, and India may feel it needs to carry out more strikes like the ones on Balakot.
- The U.K. are in touch with both sides (India and Pakistan).
- The escalation ladder has the ultimate end and the U.K. doesn't want to see incidents that lead to an escalation- this is a message being conveyed on both the sides.
- The U.K. knows that Pakistan has to take action and they are talking to Pakistan about that action.

Khalistani separatist groups in the U.K:

- The U.K. is a country of law, and one of those laws is around freedom of speech and freedom of assembly.
- But there are laws around incitement. The U.K. is talking to India and has some good exchanges about this issue.
- The mutual understanding between the two governments has improved, and this was a constructive part of the foreign office consultations.

3. India, Australia to adopt classified communications: official U.S. positions Patriot missile off Iran

What's in the news?

- The United States is deploying an amphibious assault ship and a Patriot missile battery to bolster an aircraft carrier and B-52 bombers already sent to the Gulf.
- This move ratchets up pressure on its arch-foe Iran.
- The Pentagon recently announced that in response to alleged threats from Iran, the USS Arlington, which transports marines, amphibious vehicles, conventional landing craft and rotary aircraft, and the Patriot air defence system will join the Abraham Lincoln carrier group.
- The carrier and a B-52 bomber task force were ordered towards the Gulf, as Washington reiterated that intelligence reports suggested Iran was planning some sort of attack in the region.

The arrival of B-52 bombers:

- CENTCOM, the U.S. forces for West Asia and Afghanistan, said on Twitter that the B-52 bombers arrived at the area of operations on May 8, 2019 without saying where they had landed.
- National Security Advisor John Bolton has said that the deployment aimed to send a "clear and unmistakable" message to Iran about any attack against the U.S. or its partners in the region.
- Further, **Washington has not elaborated on the alleged threat, drawing criticism that it is overreacting and unnecessarily driving up tensions in the region.**
- There was no immediate reaction from Tehran.
- However, recently, Iran's Supreme National Security Council spokesman Keyvan Khosravi shrugged off the carrier deployment. He said, "Bolton's statement is a clumsy use of an out-of-date event for psychological warfare,".

4. Baloch separatists target Gwadar hotel, kill guard

- Four insurgents armed with rifles and grenades attacked a luxury hotel in the southwestern coastal

town of Gwadar, triggering an hours-long shoot-out.

- In the shoot-out, one hotel guard and all the attackers were killed.
- In a statement, the military said troops quickly responded to the attack on the **Pearl Continental hotel** and that all the guests were evacuated.
- The hotel guard was killed as the assailants opened fire with small arms.

The Baloch Liberation Army:

- A Baloch separatist group, **the Baloch Liberation Army**, claimed responsibility, saying its four fighters were involved.
- In a statement, the group released pictures of the attackers, who authorities say were killed in the ensuing gun battle.
- “All four of the terrorists have been killed,” said a senior security official.
- **The region has been the scene of a low-level insurgency by separatists who demand a greater share of the province’s natural gas and mineral resources.**

5. Nasheed calls for screening of preachers visiting Maldives

What’s in the news?

- Mohameed Nasheed, former President of the Maldives, has called for thorough screening of Islamic priests visiting the island nation.
- In a recent tweet, he mentioned, “While we are not certain if Zahran Hashim came to the Maldives in 2016 as a preacher, we should screen well before allowing people to come here posing as sheikhs and preachers,” referring to the alleged mastermind of the Sri Lanka Easter attacks.
- Following the incident, and subsequent reports of the suspects’ movement in the region, security and intelligence agencies in the neighbourhood have enhanced scrutiny of travellers.
- As a matter of fact, Sri Lanka has expelled around 200 clerics for overstating their visas.
- The Maldives has remained on high alert since the terror attacks shook Sri Lanka and is working on a coordinated response mechanism, involving the military and police, to face any contingency.
- The National Counter Terrorism Centre in identified 69 individuals who joined foreign wars.
- In addition to **developing a rehabilitation programme for radicalised individuals**, the government is closely monitoring potential links that radicalised individuals might have with Islamist militant groups abroad.
- **Security forces and Immigration have heightened scrutiny, though authorities have said no imminent threat has been detected.**

Category: SOCIAL JUSTICE

1. A.P. plans to place 1,000 children for adoption

What’s in the news?

- In good news for couples looking to adopt children, the Women Development and Child Welfare (WD&CW) Department has set itself a target of ensuring 1,000 adoptions this year (2019).
- Nearly 1,350 applications for adoption are pending in Andhra Pradesh, it is learnt.
- The move will benefit hundreds of orphans and half-orphans living in Child Care Institutions (CCIs) in the State. About 32,000 children are living at more than 900 registered CCIs (shelter homes) in Andhra Pradesh.
- A few months ago, officials of the WD&CW and the Juvenile Welfare Department conducted special drives on CCIs and identified about 2,700 children, who were fit for adoption, but were staying at shelter homes for the last few years.

- **Unconfirmed reports state that many unregistered homes were illegally operating as children's homes, without furnishing any information to the government.**
- "Every year, we are giving about 120 to 150 children for adoption from 14 Sishu Gruhas, also known as Specialised Adoption Agencies (SAAs), run by the WD&CW Department. Now, we want to place the children staying in CCIs, who are legally fit for adoption, under foster care," said WD&CW Special Commissioner H. Arun Kumar.
- Recently, the government had issued a paper notification with the list of some children who are ready for adoption, and some couples had selected them.
- The children were given adoption as per Central Adoption Resource Authority guidelines.

C. GS3 Related

Category: INTERNAL SECURITY

1. IS claims it set up a 'province' in India

What's in the news?

- For the first time, the Islamic State said it has established a "province" in India, after a clash between militants and security forces in Kashmir killed a militant with alleged ties to the group.
- Its Amaq News Agency recently issued a statement, announcing the province "Wilayah of Hind".
- It also claimed that the IS inflicted casualties on soldiers at Amshipora in Shopian district.

Motive behind the statement issued by the Islamic State:

- The IS's statement appears to be designed to bolster its standing after the group was driven in April, 2019 from its self-styled "caliphate" in Iraq and Syria, where at one point it controlled thousands of miles of territory.
- **The IS has stepped up hit-and-run raids and suicide attacks, including taking responsibility for the recent bombings in Sri Lanka that killed at least 253 people.**
- Some experts opine that the establishment of a 'province' in a region where it has nothing resembling actual governance is absurd, but it should not be written off.
- The world may roll its eyes at these developments, but to jihadists in these vulnerable regions, these are significant gestures to help lay the groundwork for rebuilding the map of the IS 'caliphate'.

2. Ban on NLFT, ATTF to continue for five years

What's in the news?

- A recent notification of the Ministry of Home Affairs said that the ban on the National Liberation Front of Tripura (NLFT) and the All Tripura Tiger Force (ATTF) will continue for five years.
- The notification was issued by the Joint Secretary to the department.
- The notification said that there was sufficient cause to declare the NLFT and the ATTF as unlawful associations with effect from October 3, 2018, for a period of five years.
- A tribunal was constituted on November 15, 2018, for adjudicating the matter but no one appeared on behalf of either the NLFT or the ATTF during the proceedings on February 25, 2019.

Agencies that were consulted:

- The Tripura government, Ministry of Defence, Intelligence Bureau, Cabinet Secretariat (Research and Analysis Wing) and the CRPF were consulted. It was recommended that the ban on the outfits continue.

- The Border Security Force too recommended declaration of the NLFT as an unlawful association, the notification said.
- The notification said that the two outfits had indulged in killing of civilians, police and security forces personnel in the State, extortion of people, including businessmen and traders.

3. Gadchiroli attack probe indicates SOP lapses

Background:

- Recently, in one of the worst retaliatory attacks, Maoist insurgents blew up an Improvised Explosive Device (IED), killing men of the Quick Response Team (QRT) of the Gadchiroli police.
- The unit was proceeding from the police station in Kurkheda taluka, nearly 60 km north of Gadchiroli, when the blast was triggered.
- The Naxals had torched 36 vehicles meant to assist road work the previous night.

What's in the news?

- A preliminary probe into the Naxal attack that killed 15 personnel of the Gadchiroli police earlier this month, has found lapses in adherence to the Standard Operating Procedure (SOP) for the red zones of the State.
- The report of Maharashtra Director General of Police (DGP) S.K. Jaiswal was forwarded to the State Home Department this week.

What did the probe find?

- Fixing responsibility for the incident of May 1, 2019, the probe has found a sub-divisional police officer (SDPO) guilty of rushing the unit into an ambush, **without following the procedures or sending a road patrol party to do a recce.**
- The said SDPO and another senior unit in-charge have been asked to proceed on forced leave.

Fixing accountability:

- Among other preventive measures, the report also suggests changes to the existing SOP, and has fixed responsibility for its violation on the senior unit in-charge.
- The inquiry has found the SDPO in-charge made two calls asking the men to leave as early as possible to the spot where the Maoists had burnt vehicles just the previous night. Before pushing the unit out of Kurkheda, (SDPO) did not wait for the SOP to unfold.
- The report, which followed the DGP's two-day visit to the attack site, suggests changes to the existing SOP to avoid future incidents, officials said.
- The report has suggested postponing the filing of a panchnama soon after any incident has taken place to avoid ambushes in the future.
- The panchanama — as per the new changes — will now wait until anti-landmine vehicles or patrol parties have scanned the area. This is one of the many changes we have suggested to the existing SOPs for the red zone," said an official.

Centre's guidelines:

- Recently, Union Home Secretary Rajiv Gauba, while sharing details of the movements of the various Naxal units or dalams with the State government, urged the forces to follow the SOP on all possible occasions.
- The letter had stated the SOPs to be observed during long patrols and during the protection duty for burnt vehicles.
- "We have included contents of Union Government's letter into suggested SOP changes," a State

government official said.

Category: SCIENCE AND TECHNOLOGY

1. IAF receives first Apache attack copter from Boeing

What's in the news?

- The first AH-64E Apache attack helicopter built for India was formally handed over to the Indian Air Force (IAF) at the Boeing production facility in Mesa, Arizona in the U.S.
- The first batch of these helicopters is scheduled to be shipped to India by July, 2019.
- Selected aircrew and ground crew have undergone training at the training facilities at U.S. Army base Fort Rucker in Alabama. These personnel will lead the operationalisation of the Apache fleet in the IAF.
- **The Indian Air Force had contracted 22 Apache helicopters from the U.S. govt and Boeing in September 2015.**

Specifics of the helicopter:

- The helicopter has been customised to suit IAF's future requirements and would have significant **capability in mountainous terrain.**
- The helicopter has the capability to carry out precision attacks at standoff ranges and operate in hostile airspace with threats from the ground.
- The ability of the helicopters to transmit and receive the battlefield picture to and from the weapon systems makes them a lethal acquisition.

2. Kolkata researchers use novel compound to kill cancer cells

What's in the news?

- Researchers at Kolkata's the Indian Institute of Chemical Biology (CSIR-IICB) and the Indian Association for the Cultivation of Science (IACS) have designed and synthesised about 25 quinoline derivatives that show potent anticancer activity.
- The compounds were tested in vitro against human Topoisomerase 1 (topo1) activity and their efficacy to kill cancer cells was carried out using breast, ovarian, cervical and colon cancer cell lines.
- The results of topo1 inhibition activity, cellular mechanisms and the cancer cell line studies carried out at IACS and the compounds designed and synthesised by IICB researchers were published in the Journal of Medicinal Chemistry.
- Preliminary data based on cell line studies suggest that the compounds from IICB might be effective against breast and colon cancer.
- The success of the project is due to the years immaculate design by going back-and-forth with our hypothesis through computational analysis followed by synthesis and X-ray crystallography even before the biological validation began.

An Essential enzyme:

- Topoisomerase 1 is a fundamental enzyme that is essential for replication.
- DNA is in a supercoiled state and has to be unwound before replication can take place.
- For the DNA to uncoil, the topo1 enzyme has to first bind to the DNA and form a complex.
- Once the complex is formed, the topo1 enzyme cleaves one strand of the DNA thus allowing the DNA to uncoil. Once uncoiling is completed, the topo1 enzyme rejoins the cleaved DNA strand for replication to take place.

- It is important to note that existing drugs and the quinoline derivatives synthesised by the IICB team have the ability to trap the complex thereby not freeing the topo1 to rejoin the cleaved DNA strand.
- As the number of trapped complexes in the DNA increases, the amount of free topo1 enzyme available to repair the cleaved DNA strand reduces. Also, other enzymes involved in replication and transcription (where DNA is converted into RNA) come and collide with the trapped topo1 and this causes more DNA breaks.
- As a result, **replication gets affected leading to DNA break and cancer cell death.**
- The mode of action of the existing drugs and the synthesised compounds is the same. The difference lies in the time the complexes remain trapped when the drugs or the synthesised compounds are used and therefore the ability to kill cancer cells.
- Compared with normal cells, **topo1 enzyme is produced in far excess amount in cancer cells and so more complexes are formed.**
- As a result, though topo1 enzyme is found even in normal cells, there is greater likelihood of the drugs specifically targeting the cancer cells.
- The existing drugs bind to the complex and trap it only transiently. This is because the drugs can be easily removed by body fluids. So within about 20 minutes, all the DNA breaks are repaired. So the existing drugs have less ability to kill cancer cells.

Stable complex:

- It is important to note that **the existing drugs are not metabolically stable and so become inactive very fast.**
- Hence, using the existing drugs, the complexes can be trapped only for a brief period.
- However, the compound developed by this team of scientists can trap the complex for as long as five hours. All the 25 quinoline derivatives that this team synthesised show similar efficacy towards human topo1 inhibition.
- The ability of the synthesised derivatives to trap the complex for a much longer time might translate into better efficacy in killing cancer cells.
- The speciality of this compound is that they do not react with or bind to topo1 or the DNA when they are in isolation. They bind only when topo1 and the DNA form a complex.
- Thus, the compounds which have been designed by the team can be seen as targeted therapies.

3. Fast neutrino oscillations may hold key to supernovae formation

What's in the news?

- A new theoretical study from Tata Institute of Fundamental Research finds that Neutrinos could be the driving force behind supernova explosions.
- The study which makes a fundamental advance in modelling neutrinos inside stars puts forth the idea that **“fast neutrino oscillations”** could hold the key to why some stars explode forming supernovae at the end of their lives.
- Neutrinos come in three flavours: electron neutrino, muon neutrino and tau neutrino, so named because of the corresponding leptons they are associated with (electron, muon and tau).
- There are several puzzles they have posed, including how they are ordered according to mass and this puzzle still remains to be solved.
- Earlier when measuring the number of neutrinos coming from the sun, experimentalists found that only a third of the number of solar neutrinos that was expected was being intercepted on earth.
- This was later explained by the understanding that they have a small mass and they can change from one flavour to another – a phenomenon named neutrino oscillations.

Fast neutrino oscillations:

- When the same neutrinos are in the presence of many other neutrinos and when the different flavours

are emitted slightly differently in various directions (anisotropy) the oscillations from one flavour to another happen at a higher frequency.

- This is called fast oscillation and is proportional to the density of neutrinos in the medium, and not the masses of the neutrinos.
- **Any star that collapses under its own gravity after having run out of its fusion fuel is called a supernova.**
- Usually stars more massive than eight times the Sun's mass enter this phase of explosive death.
- It is important to note that in earlier work, it was assumed that high density and anisotropy conditions were put in by hand, while the neutrinos were assumed to travel in straight lines without colliding.
- **In the present work the authors include collisions that lead to the high anisotropy conditions.**
- They show how in the presence of collisions the fast oscillations take place.

4. NBRI: Arsenic bioremediation using two soil bacteria

Analysis:

- Using two indigenous strains of bacterium isolated from arsenic-contaminated field, researchers from CSIR-National Botanical Research Institute (CSIR-NBRI), Lucknow and the University of Lucknow have shown that arsenic can be effectively removed from contaminated soil with the help of microbes.
- What adds value to these strains (*Bacillus flexus* and *Acinetobacter junii*) is the fact that they can promote plant growth too.

Different forms of arsenic:

- Several studies have pointed out that using arsenic-contaminated water for agricultural purposes can lead to increased concentration of arsenic in fruits and grains, proving toxic to humans.
- The researchers studied the two bacteria under different concentrations of arsenate and arsenite, the toxic forms of heavy metal.
- **Arsenic treatment did not stunt or delay the growth of both the bacterial strains.**
- *flexus* exhibited resistance to high levels (150 mmol per litre) of arsenate and *A. junii* to about 70 mmol per litre of arsenite. This is higher than previously reported arsenic tolerant bacteria and so were regarded as hyper-tolerant strains.
- Further gene detection studies pointed out that both the bacteria have a special *ars C* gene, which aids in arsenic detoxification.

Plant growth promoters:

- The bacterial strains were further scrutinised to understand if they can help in plant growth too. In studies carried out in the lab, both the bacteria were able to solubilise phosphorus. Phosphate solubilising bacteria have been reported to increase phytoavailability of phosphate, thus facilitating plant growth. These two bacterial strains were also found to produce siderophores and ACC deaminase enzyme.
- It is important to note that Siderophore increase the bioavailability of iron and other metal ions in polluted soil environment and ACC deaminase is a well known plant growth promoting enzyme.
- These bacteria can live symbiotically in the roots of plants in arsenic- contaminated soils and help them uptake the required nutrients without causing toxicity.
- The paper published in the Journal of Applied Microbiology notes that **these indigenous strains demonstrated the “potential to accumulate arsenic within the cells and transform it into less phytotoxic forms, making the strains more proficient candidate for bioremediation”.**

5. In deep trouble

What's in the news?

- A study published in Geophysical Research Letters has pointed out that **radioactive carbon from nuclear bomb testing has been detected in tissues of crustaceans living in deep ocean trenches, including the Mariana Trench.**
- The level of Carbon-14 in the atmosphere doubled after the tests and many organisms consumed this carbon.
- At present, scientists have shown evidence for increased levels of C-14 in marine organisms after the bomb tests began in 1950s.

Category: ECONOMY

1. U.S. FDA warns of faulty pacemaker batteries

Background:

- There has been a problem regarding the batteries in certain Medtronic implantable pacemakers draining more quickly than expected.
- As a matter of fact, this problem with the batteries in certain pacemakers has resulted in at least one death and one injury, the U.S. Food and Drug Administration (FDA) confirmed recently.
- Senior Indian cardiologists have said they had alerted the manufactures about the 'defect' as early as 2017 and had informed hospital authorities.

What's in the news?

- Following the U.S. Food and Drug Administration (FDA) alert about batteries in certain Medtronic implantable pacemakers draining more quickly than expected, **patients in India using the device claim that they are yet to be alerted about the issue.**
- While the exact number of these defective implants in use in India is not yet known, some experts opine that this will have a huge impact on patients in India.
- **As a precautionary measure, some doctors have advised their patients using this device to be called in for a check-up every three months instead of the normal six months.**
- The FDA said the affected Medtronic implantable pacemaker and CRT-P device models include Azure, Astra, Percepta, Serena and Solara.
- Some 2,66,700 devices have been distributed worldwide, with 1,31,889 in the U.S., according to the company and the FDA.

2. Trump orders tariff hike on remaining Chinese imports

Editorial Analysis:

- U.S. President Donald Trump ratcheted up the heat in a trade battle with China recently, ordering a tariff hike on almost all remaining imports from the world's second-biggest economy (China).
- However, Beijing said talks would continue to resolve the row.
- After tweeting that two days of trade talks in Washington had been "candid and constructive", Mr. Trump changed tack and followed through on a threat he had been making for months.

Recent Statement Issued:

- "The President... ordered us to begin the process of raising tariffs on essentially all remaining imports from China, which are valued at approximately \$300 billion," U.S. Trade Representative Robert Lighthizer said in a statement.

- It is important to note that the move came less than 24 hours after Washington increased punitive duties on \$200 billion worth of Chinese imports, raising them to 25% from 10%, days after the Trump administration accused Beijing of renegeing on its commitments.
- Details on the process for public notice and comment will be posted soon, ahead of a final decision on the new tariffs, Mr. Lighthizer said. They were not expected to go into effect for several months.
- China's top trade negotiator, Vice-Premier Liu He, had warned earlier that **Beijing "must respond" to any U.S. tariffs.**
- The developments came as two days of talks to resolve the trade battle ended recently with no deal, but no immediate breakdown either, offering a glimmer of hope that Washington and Beijing could find a way to avert damage to the global economy.
- Trump tweeted that "Over the course of the past two days, the U.S. and China have held candid and constructive conversations on the status of the trade relationship between both countries," He went on to add, "The relationship between President Xi (Jinping) and myself remains a very strong one, and conversations into the future will continue."
- The tariffs on China "may or may not be removed depending on what happens with respect to future negotiations!"

Three disagreements:

- Liu told reporters the talks had been "productive" and said the two sides would meet again in Beijing at an unspecified date, but he warned that China would make no concessions on "important principles".
- "Negotiations have not broken down, but rather on the contrary, this is only a normal twist in the negotiations between the two countries, it is inevitable," Mr. Liu said.
- Treasury Secretary Steven Mnuchin and Mr. Lighthizer met for about two hours with Mr. Liu recently and then headed for the White House to brief Mr. Trump, who had said he was in no hurry to reach a deal, arguing the U.S. was negotiating from a position of strength.
- "We have a consensus in lots of areas but to speak frankly there are areas we have differences on, and we believe these concern big principles," Mr. Liu said.
- **It is important to note that Mr. Liu pointed to three major areas of disagreement: whether to cancel all trade war tariffs when an agreement is reached, the exact size of Chinese purchases of U.S. goods, and a "balanced" agreement text.**
- "Any country needs its own dignity, so the text must be balanced," Mr. Liu said.
- Liu and his backer Mr. Xi cannot be seen as giving in too much with trade concessions to the U.S. in fear of triggering comparisons to past "unequal treaties" forced on China in the 19th and 20th centuries.
- "Every country has important principles, and we will not make concessions on matters of principle," Mr. Liu said.

Category: ENVIRONMENT AND ECOLOGY

1. A global deal for postponing pralaya

Analysis:

- The Earth and the atmosphere surrounding it receive radiation from the Sun, and get "heated".
- Some of the gases in the atmosphere, notably carbon dioxide (CO₂) absorb this heat radiating from the earth's surface and bounce it back.
- This is what keeps the earth- land and seas- at a temperature range "comfortable" for us humans and the other organisms inhabiting the earth today. We thus live in a large "green house".
- However, an important question arises: **What happens when the level of these greenhouse gases increases?** The temperature will rise. And this rise has been due to increases in the levels of CO₂

and other gases, produced upon burning carbon-rich fuels (coal, wood, petroleum products).

- It is important to note that over the last 100 years alone, the global temperature has risen by close to 2 degrees. And if we do not reduce or stop these fuels and use alternate sources of energy (solar, wind and others), the global temperature will rise further.

A Two degree rise has been dangerous:

- We already see it in the form of the melting of ice caps and glaciers, causing a rise in sea level. This can submerge small island countries such as Maldives and Mauritius. It has also led to a change in the global climate, causing errant monsoons, cyclones, tsunamis, El Nino and so on, affecting life on earth and in the oceans (fish, algae, coral reefs).
- Temperature rise and climate change affect not just some countries but the entire globe, on which all species live- humans, animals, plants, fish, microbes. And if it is left uncontrolled, disaster looms for all life across the globe.
- Climate change, plus relentless industrial farming and fishing are leading to the extinction of 1 million species from Mother Earth within decades.

Paris Agreement 2015

- It is for acting against this catastrophe that the UNO brought countries across the world, and in 2015 came up with what is called the Paris Agreement 2015 wherein they decided to make all efforts contain the temperature rise to no more than 1.5 degrees.
- While 195 countries across the globe signed the Paris Agreement and promised to take steps towards it, some oil producing/ importing) countries such as Turkey, Syria, Iran and USA have not.

Steps that need to be taken:

- We need to do two urgent things.
- One is to reduce, indeed replace carbon-based fuels, with other forms of energy generation that do not generate greenhouse gases; hence solar power, wind power and others.
- The second is to enhance all natural methods which absorb CO₂. Forests and plants do this best. Photosynthesis is done by all varieties of plants- algae in water, mangroves on the coast, crops and forests on land.
- They absorb atmospheric CO₂ and produce oxygen for us to breathe.
- Tropical forests do this best; hence, **deforestation in the Amazon, tropical Africa and in India must end.**
- These regions also house over 200 million species of plants, animals and fungi.
- They are thus termed as **Key Biodiversity Areas (KBAs)**; likewise are **Marine Protection Areas (MPAs)**. They restore and protect biodiversity, increase yields and enhance ecosystem protection and defense.
- They alone help us preserve over 17% of land realm and 10% of marine areas by 2020, and preserve millions of species from extinction. However, experts opine that we need to do more beyond next year.

Global Deal for Nature

- It is with all this in mind that a diverse group of scientists and ecologists from across the world have come up with a companion pact to the Paris Agreement, called: **“A Global Deal for Nature: Guiding Principles, Milestones and Targets”**.
- This policy document is published on 19 April 2019 in the journal Science Advances, which should be read by every concerned citizen and government.
- Global Deal for Nature (or GDN) has five fundamental goals:

- (1) representation of all native ecosystem types and stages across their natural range of variation;
 - (2) maintain viable populations of all native species in natural pattern of abundance and distribution – or “saving species”;
 - (3) maintain ecological functions and ecosystem services;
 - (4) maximize carbon sequestration by natural ecosystems and
 - (5) address environmental change to maintain evolutionary processes and adapt to the impact of climate change.
- It is important to note that these five goals of GDN have three Priority themes.
 - Theme 1 is on protecting biodiversity. Towards this, they have listed a total of 846 ecoregions across the world and given milestones on how to protect as much as 30% of them by the year 2030.
 - Theme 2 is on mitigating climate changes by conserving carbon storehouses or climate stabilization areas (CSAs) and Other Effective area- based Conservation Measures (OECMs).
 - These involve saving about 18% of existing areas across the world (e.g., tundra, rainforest) as CSAs and about 37% of the areas as OECMs (indigenous peoples’ lands, such as in the Amazon Basin, Congo Basin, Northeast Asia, Continental India).
 - Theme 3 is on reducing threats to ecosystems, and concerns reducing major threats (such as overfishing, wild life trade, laying new roads cutting across forest lands, and building major dams).

Concluding Remarks:

- In order to do all this, the gross cost is estimated to be \$ 100 billion per year.
- Considering that these are over 200 nations across the world (plus the private sector, which too should also be involved), this is a sum well worth achievable if we are to leave the world livable for our children, and all the flora and fauna that have enriched our earth since the last 550 million years.

D. GS4 Related

Nothing here for today!!!

E. Editorials

Category: ECONOMY

1. Should Big Tech’s dominance be checked?

Editorial Analysis:

- The debate over how to control the world’s powerful tech companies is growing.
- On March 8, 2019, Elizabeth Warren, Massachusetts senator and Democrat presidential contender for 2020, shared her plan to break up the big technology companies, which dominate the world from their base in the U.S.
- She wrote, “Today’s big tech companies have too much power — too much power over our economy, our society, and our democracy,”
- It is important to note that while the idea of forced breakups in corporate America might sound radical, given that there have been only a few such instances in its history, Elizabeth Warren has given political weight to a proposal which until then has resonated largely in the academic world.

- By doing so, Ms. Warren has also brought the issue of antitrust action, or action that promotes competition, into the mainstream at a time when the 2020 presidential race is set to pick up pace.
- The plan has put the Big Tech, as the big technology companies are referred to, on the backfoot.
- In a television interview a few days ago, Apple CEO Tim Cook said he disagreed with Ms. Warren's plan and mentioned that he is "frustrated that tech is painted as monolithic"
- There are many questions that arise: What is at stake? What lies ahead?

What is the criticism against Big Tech?

- Warren, while specifically referring to Google, Amazon, and Facebook in her post, wrote that American tech companies have built dominance because of two strategies.
- One involves purchase of potential competitors. As examples, she pointed at:
 1. Facebook's acquisition of Instagram and WhatsApp, and
 2. Google's purchase of mapping service Waze and ad company DoubleClick.
- The second strategy is the use of "proprietary marketplaces to limit competition".
- In the post, she wrote, "Amazon crushes small companies by copying the goods they sell on the Amazon Marketplace and then selling its own branded version."
- Her point is that Big Tech has "bulldozed competition, used our private information for profit, tilted the playing field against everyone else. And in the process, they have hurt small businesses and stifled innovation".
- Warren later clarified that Apple, which doesn't find a mention in her written proposal, also needs to be broken up. This triggered Mr. Cook's response, mentioned above.

How big is Big Tech, really?

- If you go by market capitalisation (or the value of a company's outstanding shares), as per data in May, Amazon and Apple were worth well over \$900 billion each.
- Google's owner Alphabet was worth over \$800 billion while Facebook had a value of well over \$500 billion.
- The tech company that's more valuable than all the above four is Microsoft, which has seen a resurgence in recent years.
- Interestingly, Microsoft, was sued about two decades ago for antitrust violations and barely escaped being broken into two. These tech giants are among the world's top companies by market capitalisation.
- Market research company eMarketer estimates Google and Facebook control about 60% of the digital ad spending in the U.S.
- Warren wrote that "nearly half of all e-commerce goes through Amazon. More than 70% of all Internet traffic goes through sites owned or operated by Google or Facebook".
- Many of Google's properties — including the video platform YouTube, the Android platform, Play Store, Maps, the Chrome browser, the search site, as also Gmail — each have a billion plus users.
- Facebook has over 2 billion users and its arms Messenger and WhatsApp have more than a billion users each.

What is the reason for this dominance? What is Ms. Warren's plan?

- Warren puts weak antitrust enforcement as the reason for the "dramatic reduction in competition and innovation in the tech sector".
- She wants to take two major steps: one involves legislating to ensure companies don't end up being both a platform and a player. This pertains to companies with annual global revenues of at least \$25 billion.

- The second step involves “reversing illegal and anti-competitive mergers”.
- According to her, acquisitions of Whole Foods and Zappos by Amazon, of WhatsApp and Instagram by Facebook, and of Waze, Nest and DoubleClick by Google come under that category and need to be unwound.

Voices in favour of a breakup:

- Fellow presidential contenders Pete Buttigieg, Julián Castro, John Hickenlooper, and Tulsi Gabbard have spoken about stronger antitrust enforcement, much in line with Ms. Warren’s reasoning.
- Republican Senator Ted Cruz, retweeting Ms. Warren — for the first time ever — who criticised Facebook for taking down posts calling for its breakup, said, **“Big Tech has way too much power to silence Free Speech.”**
- Others like Senator Josh Hawley have also spoken about how the dominance of a few in the tech world is threatening competition.
- **Chris Hughes**, who co-founded Facebook with Mark Zuckerberg and was his roommate once upon a time, wrote an opinion piece in The New York Times recently **calling for the social media company to be broken up into three**. Mr. Hughes had exited the company many years earlier.
- Facebook lost no time in responding to this. Its spokesman Nick Clegg said, “Facebook accepts that with success comes accountability. But you don’t enforce accountability by calling for the break-up of a successful American company.”

Voices against a breakup:

- Interestingly, the EU’s Competition Commissioner, Margrethe Vestager, who has successfully taken on the tech giants, imposing record fines on them for abuse of dominant market position in the process, has said that the idea of breaking up tech giants should be used as a last resort.
- She has been quoted as saying that the idea is to “change the marketplace to make it a fair place where there’s no misuse of dominant position but where smaller competitors can have a fair go”.
- Meanwhile, antitrust experts have opined that it won’t be easy to implement Ms. Warren’s proposal not just because it would involve years of litigation.
- There is also the background of how antitrust violations have been viewed more from the prism of how monopolies can affect pricing.
- In the tech world, many successful giants have come about on a zero-pricing model.

Haven’t the tech companies been under pressure from policymakers in recent years?

- In a way, yes. In the last few years, discontentment with tech companies has increased following incidents such as the Cambridge Analytica scandal.
- This has led to many voices calling for regulation of tech companies.
- The U.S. historically has taken a much lenient approach, compared to say the European Union, to penalising abuse of a dominant market position.

The case concerning Microsoft:

- The last big charge on monopolisation was on Microsoft about two decades ago.
- Microsoft was first ordered to break up into two entities — one that ran an operating system business and the other the rest.
- It appealed, and was eventually saved from the break-up.
- The settlement came about finally, after it agreed to make it easier for rivals to integrate their software with its operating system. Some believe the scrutiny itself worked to check excessive market power.

Steps taken by the EU:

- The EU in recent years has imposed antitrust fines to the tune of over \$9 billion on Google.
- The latest one was a result of, as the EU antitrust agency put it, Google's abuse of its dominance "to stop website using brokers other than the AdSense platform".
- The fines amounted, as one report put it, to a small slice of its cash reserves.
- Spotify has now complained to the EU's investigators alleging misuse of Apple's App Store in favour of the latter's own streaming service.
- Regulations on data privacy and copyright standards have also been tightened in the EU.
- The world seems to be waking up to the possibility of more regulation.
- Bloomberg has reported that the Japan Fair Trade Commission is looking to examine Google, Apple, Facebook and Amazon for possible abuse of market dominance.

What will be the effect of Ms. Warren's proposal?

- It's tough to say what lies ahead.
- However, what it has surely done is triggered a debate on the regulation of technology companies which seemed to be having an easy ride to burgeoning growth all along.
- Privacy concerns were there but tech companies convinced lawmakers that they could fix it on their own.
- Warren has been seen as a "pace-setter" by many in this regard, given that the U.S. will shortly go into campaign mode in the coming months.
- Her plan, radical as it is, is on the table, and others may not be able to ignore it.

2. How is India driving to electric mobility?

What's in the news?

- Recently, Ola Electric Mobility Pvt. Ltd. said in a statement that Ratan Tata, Chairman Emeritus of Tata Sons, had invested an unspecified amount to support its ambitions to scale up electric vehicle deployment in India.
- Ola Electric is undertaking several pilot programmes including charging solutions, battery swapping stations, and deploying two-and three-wheeler electric vehicles.
- An important question arises: **Will Ola Electric's initiative provide the spark to meet India's ambitious goal of having 30% electric vehicles by 2030?**

Editorial Analysis:

What is India's policy for electric vehicles?

- While carmakers in the rest of the world have been focussing on electric cars in the premium segment (costing over ₹10 lakh), India is targeting smaller vehicles.
- The reason for this is, according to NITI Aayog, 79% of vehicles on Indian roads are two-wheelers, while three-wheelers and cars costing less than ₹10 lakh account for 4% and 12% of the vehicle population, respectively.
- Experts opine that concentrating on small electric vehicles will help meet domestic demand and place India in a "position of global leadership".
- **While China, the U.S. and a few European countries offer various subsidies up to 40% to encourage uptake of electric cars, India wants to offer non-fiscal incentives.**
- Credits will be offered based on carbon dioxide emissions per km as well as vehicle efficiency.
- While manufacturers exceeding the emission targets will be required to purchase credits, those meeting them will be rewarded.
- The price of the credit will be decided by the market. This approach will make electric vehicles and

those with low-emissions cheaper and the polluting vehicles expensive.

- In the next five years, India aims to have at least 15% of electric vehicles on the road. On February 28, India announced the second phase of the Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME-2) scheme with an outlay of ₹10,000 crore for a period of three years.
- To encourage faster adoption, incentives will be provided on purchase of an electric vehicle. The scheme will support 10 lakh two-wheelers, 5 lakh three-wheelers, 55,000 four-wheelers and 7,000 buses. While the focus will be on private vehicles for two-wheelers, incentives will be given for three and four-wheelers used for public transport and commercial purposes.
- The aim is to set up charging stations and other infrastructure under 'Make in India'.

What is the driving range of electric vehicles?

- In electric cars using lithium ion battery (the most widely used battery worldwide), it is between 200 and 300 km per charge.
- The driving range in a city is typically 25-30 km per day. Battery technology to increase driving range and energy density has been, and will continue to be, the focus area in the coming years.
- The most important determinant will be the lifespan of the battery. As per current battery technology, its lifetime will be shorter than the rest of the vehicle.
- According to the European Academies' Science Advisory Council, some car manufacturers in developed countries are offering an eight-year or 1,60,000 km warranty on batteries.

How long will it take to charge the battery?

- Currently, batteries used in electric cars have capacities of 50 kWh (kilowatt hour) and can be charged overnight using the existing power supply available at home.
- Like in the case of mobile phones, batteries used in electric vehicles can be fast-charged using 7 and 22 kW supply. Charging stations at service stations have 50 or 120 kW supplies and the battery can be charged in 20-30 minutes.
- However, fast-charging causes overheating and degradation, and if done frequently reduces battery life.

Will electric vehicles reduce carbon emission?

- At nearly 55%, electricity generation in India is primarily using coal. Hydroelectric generation is 13% and renewable energy sources including small hydro projects, wind and solar, account for about 21%.
- So like in the case of the U.S. and China, net reduction in carbon emission will not be much even if there is large-scale adoption of electric vehicles in India.
- This is unlike France and the U.K., where non-fossil fuel is a major source of electricity generation. However, cities and town using electric vehicles in large numbers will see a reduction in exhaust-pipe emissions, particularly particulate matter.
- This will be important in the case of India which is home to 14 of the 20 most polluted cities in the world.

Can used batteries be recycled?

- Lithium ion batteries used in electric vehicles can be recycled.
- According to the Financial Times, China and the European Union have rules that make carmakers responsible for recycling their batteries.
- In July 2016, Elon Musk had tweeted that Tesla's Gigafactory battery factory in Nevada, U.S., will recycle lithium ion battery.
- Li-ion batteries use a "variety of chemical processes, making it difficult to develop standardised recycling".

- Battery recycling will become an industry by itself by 2025 when used batteries will become plentiful. Eaton, a U.K.-based company, is already selling used electric batteries for reuse as household batteries.

Is there enough cobalt to meet the demand?

- In lithium ion batteries, cobalt is a key component of the cathode (positive electrode).
- Cobalt plays a pivotal role in preventing overheating and provides stability to the battery thus allowing charging and discharging over many years.
- Cobalt is a by-product of mining nickel and copper.
- About 60% of the world's supply of cobalt comes from the Democratic Republic of Congo, the mining of which has been linked to human rights abuse including child labour.
- As battery technology evolves, the amount of cobalt used may reduce or even stop.
- In May, 2018 Tesla's battery cell supplier Panasonic Corp said it has already "substantially cut down" cobalt usage and is already "aiming to achieve close to zero usage of cobalt in the near future".

Category: POLITY

1. Trial in the Assembly

Background:

- On May 6, 2019, the Supreme Court of India stayed the proceedings initiated by Tamil Nadu Assembly Speaker P. Dhanapal for the disqualification of three MLAs of the ruling All India Anna Dravida Munnetra Kazhagam (AIADMK) — E. Rathinasabapathy (representing Aranthangi constituency), V.T. Kalaiselvan (Virudhachalam) and A. Prabhu (Kallakurichi) under the anti-defection law.
- Two of the MLAs had approached the Court. On May 10, 2019, Mr Prabhu, who had separately approached the Supreme Court, too got a stay order from the Court.

Editorial Analysis:

The course of events:

- The judicial intervention followed a series of events.
- On April 26, 2019, Chief Government Whip S. Rajendran complained that the MLAs had associated themselves with T.T.V. Dhinakaran, general secretary of the Amma Makkal Munnetra Kazhagam (AMMK).
- Three days later, the Speaker issued show-cause notices to them.
- The principal opposition party in the Assembly, the Dravida Munnetra Kazhagam (DMK) proposed a no-confidence motion against Mr. Dhanapal.
- The rebel MLAs made two arguments in the Supreme Court. These arguments are as follows:
 - One, they accused the Speaker of having "acted in a partisan and biased manner"
 - Two, they contended that Mr. Dhanapal should not act on the disqualification matter while a motion of no-confidence against him was pending.
- As on date, the three MLAs do not deny that their sympathies lie with Mr. Dhinakaran or, to be precise, with V.K. Sasikala, confidante of former Tamil Nadu Chief Minister Jayalalithaa and now serving a prison term in Bengaluru after being convicted in a disproportionate assets case.
- Rathinasabapathy and Mr. Kalaiselvan announced their support to Mr. Dhinakaran in August 2017 while Mr. Prabhu joined them six months later.
- But the three maintain they are not members of the AMMK.

- The AMMK, just a few days prior to the Government Whip's complaint to the Speaker, applied to the Election Commission of India for registration as a political party.
- Apparently, the AIADMK's plan was to establish that by supporting Mr. Dhinakaran, the three MLAs had "voluntarily given up" membership of the party. It was the same ground on which 18 pro-Dhinakaran MLAs were disqualified in September 2017.

Why does it matter?

- The show-cause notice was issued about 10 days after polling took place for 38 Lok Sabha constituencies and 18 Assembly seats, for which by-elections were held. Four more Assembly constituencies will also see by-polls on May 19, 2019.
- This means the Assembly will be at its full strength of 234 once the results are out. If all the 22 vacancies are filled, the ruling party has to show 118 members on its side.
- At present, it has 114 MLAs including the Speaker. Had the court not stayed the disqualification proceedings, the three MLAs could have been disqualified, and the House's strength brought down to 231. In that case, the AIADMK would need only 116 members, just two more than its present strength.
- But, the ruling dispensation dismisses the argument.
- The Government Whip told reporters, after handing over his complaint to the Speaker, that time was required to collect material against the rebel legislators to substantiate his charge.
- Law Minister C.V. Shanmugam has said his party is confident of facing and winning a floor test "on any day".

What are the rules on disqualification?

- As per Paragraph 2 of the Tenth Schedule to the Constitution, a Member of Parliament or Legislative Assembly or Legislative Council can be disqualified on two grounds: if the member voluntarily gives up membership of the party on whose ticket he or she got elected; or, if the member votes or abstains from voting in the House contrary to any direction of such party.
- However, disqualification may be avoided if the party leadership condones the vote or abstention within 15 days.
- The procedure for disqualification is laid down in the Members of the Tamil Nadu Legislative Assembly (Disqualification on Ground of Defection) Rules, 1986. Each State has similar rules.

What lies ahead?

- After the Supreme Court's notice is served on the Assembly Speaker and his office, the normal practice is that the Assembly Secretary will file a response.
- The results of the by-elections to 22 Assembly constituencies will also have a bearing on what happens from now on.
- If the ruling AIADMK wins a comfortable number of seats, it won't mind if the motion against the Speaker is taken up first.
- This will have the effect of rendering redundant one of the arguments of the rebel legislators: the Speaker facing a motion for his own removal should not adjudicate disqualification issues.
- There are at least two more MLAs against whom the party may initiate action for going against the AIADMK leadership.
- If the DMK wins in all 22 seats, there can be a regime change, which may be followed by the election of a new Speaker. In that case, the disqualification proceedings may not be pursued at all.

G. Prelims Facts

Nothing here for today!!!

H. Practice Questions for UPSC Prelims Exam

Q1. Consider the following statements:

1. Any star that collapses under its own gravity after having run out of its fusion fuel is called a supernova.
2. Fast neutrino oscillation is proportional to the density of neutrinos in the medium, and not the masses of the neutrinos.

Which among the above statements is/are correct?

- a. 1 only
- b. Both 1 and 2
- c. 2 only
- d. Neither 1 nor 2

Ans: b

Explanation:

Any star that collapses under its own gravity after having run out of its fusion fuel is called a supernova. Fast neutrino oscillation is proportional to the density of neutrinos in the medium, and not the masses of the neutrinos.

Q2. Consider the following statements with reference to 'Bio-remediation':

1. Bioremediation is a process that uses mainly microorganisms, plants, or microbial or plant enzymes to detoxify contaminants in the soil and other environments.
2. Bioremediation is a human intervention, whereas biodegradation is a natural property of microorganisms.

Which among the above statements is/are *incorrect*?

- a. 1 only
- b. Both 1 and 2
- c. 2 only
- d. Neither 1 nor 2

Ans: d

Explanation:

- Bioremediation is a process that uses mainly microorganisms, plants, or microbial or plant enzymes to detoxify contaminants in the soil and other environments.
- Bioremediation is a human intervention, whereas biodegradation is a natural property of microorganisms.

microorganisms.

Q3. Consider the following statements:

1. Key Biodiversity Areas (KBAs) is an umbrella term commonly used to include areas that contribute to the global persistence of biodiversity, including vital habitat for threatened plant and animal species in terrestrial, freshwater and marine ecosystems.
2. The criteria for designating a site as KBA have been described in the document "The Global Standard for the Identification of Key Biodiversity Areas (2016)" by International Union for Conservation of Nature (IUCN).

Which among the above statements is/are *correct*?

- a. 1 only
- b. Both 1 and 2
- c. 2 only
- d. Neither 1 nor 2

Ans: b

Explanation:

- Key Biodiversity Areas (KBAs) is an umbrella term commonly used to include areas that contribute to the global persistence of biodiversity, including vital habitat for threatened plant and animal species in terrestrial, freshwater and marine ecosystems.
- The criteria for designating a site as KBA have been described in the document "The Global Standard for the Identification of Key Biodiversity Areas (2016)" by International Union for Conservation of Nature (IUCN).

Q4. Consider the following statements:

1. A marine protected area (MPA) is essentially a space in the ocean where human activities are more strictly regulated than the surrounding waters - similar to parks we have on land.
2. These places are given special protections for natural or historic marine resources by local, state, territorial, native, regional, or national authorities.
3. Pulicat Lake is an example of a Marine Protected Area in India.

Which among the above statements is/are *correct*?

- a. 1 and 2 only
- b. All 1, 2 and 3
- c. 2 and 3 only
- d. Neither 1 nor 2 nor 3

Ans: b

Explanation:

- A marine protected area (MPA) is essentially a space in the ocean where human activities are more strictly regulated than the surrounding waters - similar to parks we have on land.
- These places are given special protections for natural or historic marine resources by local, state, territorial, native, regional, or national authorities.

- Pulicat Lake is an example of a Marine Protected Area in India.

I. UPSC Mains Practice Questions

1. The ratcheting up of tensions between the U.S. and Iran has far reaching consequences for countries in West Asia and India. Examine. (12.5 Marks, 250 Words)
2. There has been a rallying cry across the world to look into the idea of breaking up 'Big Tech' companies. Examine the issues concerning these companies, and solutions which policy makers can potentially adopt to remedy the situation. (12.5 Marks, 250 Words)

