

31 Jan 2021: UPSC Exam Comprehensive News Analysis

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B. GS 2 Related

Category: POLITY AND GOVERNANCE

1. Govt. plans law to ban bitcoin, set up official digital currency SC had in March overturned RBI's diktat to FIs not to deal in virtual currency

Context:

- The government has listed a bill that will prohibit “all private cryptocurrencies” in India and provide a framework for the creation of an official digital currency to be issued by the Reserve Bank of India.
- The Bill is titled “The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021,” the bill is expected to be considered in the ongoing Budget session of Parliament.

Details:

- A cryptocurrency is a digital or virtual currency that uses cryptography for security and is generally based on blockchain technology, a distributed ledger enforced by a disparate network of computers. Bitcoin is the most popular cryptocurrency in the world.
- India plans to introduce a law to ban private cryptocurrencies such as bitcoin and put in place a framework for an official digital currency to be issued by the central bank, according to a legislative agenda listed by the government.
- The Bill will have wide-reaching consequences if passed as it intends to create a facilitative framework for the creation of the official digital currency and also would prohibit all private cryptocurrencies in India.

The Bill

- The legislation, which is expected to be taken up on the floor in the current Budget session seeks to prohibit all private cryptocurrencies in India.
- The Bill, however, will have enabling provisions that would allow for certain exceptions to promote the underlying technology of cryptocurrency and its uses.

Panel mooted a ban

- A similar bill to check the cryptocurrencies was drafted as well. The “Banning of Cryptocurrency and Regulation of Official Digital Currency Bill 2019”, the draft even proposed a prison sentence of ten-year term for persons who “mine, generate, hold, sell, transfer, dispose of, issue or deal in cryptocurrencies”
- However, the government didn't go ahead with the proposal. The panel had recommended the government to consider the introduction of an official government-backed digital currency, to function like banknotes, through the RBI.
- The Reserve Bank of India in the year 2018 had ordered financial institutions to sever all ties with individuals or businesses involved in virtual currencies such as bitcoin within a time span of three months.

Supreme Court intervention

- However, in 2020, the Supreme Court allowed banks to handle cryptocurrency transactions from exchanges and traders, overturning a ban that had dealt the thriving industry a blow.

- The Court found that a blanket ban was disproportionate and that virtual currencies had caused no visible damage to banks regulated by the RBI.
- Thus the Supreme Court judgment offered clarity and hope for a more balanced regulation in the future, but it is to be seen how the Bill is going to go ahead with the issue of cryptocurrency.

Conclusion

- There have been attempts by several governments across the globe to regulate cryptocurrencies, but so far there has been no major economy that has chosen to place a blanket ban on owning them, although the concerns have been raised about the misuse of consumer data and its possible impact on the financial system.
- Private digital currencies have gained popularity in recent years, which has led to the regulators and governments to be wary of the risks these currencies pose.

2. Unanimous polls are not democratic: SEC

Context:

- The Andhra Pradesh state government enhanced incentives for the unanimous election of sarpanches and ward members in gram panchayats.

Why is it in news?

- The Andhra Pradesh government issued a notification to award special funds to panchayats which are elected unanimously.
- It has decided to give Rs 5 lakh to panchayats with people below 2000 and Rs 1 lakh to panchayats with a population between 2,000 to 5,000.
- Panchayats with a population above 5,000 and below 10,000 will get Rs 15 lakh.
- Further, Rs 20 lakh will be given to panchayat with a population of more than 10 lakh.

Contrasting claims

- The state government believes that elections to gram panchayats held on a party basis would fuel political rivalry, enmity and intense animosity among the competing parties resulting in hampering harmony and speedy development of villages.
- However, the opposition parties advocate that free and fair elections, away from intimidation, would give ample scope to the downtrodden sections, make them a part of the governance.
- The Andhra Pradesh State Election Commissioner is of the view that enforcing unanimous elections in panchayats is nothing but an attempt to stifle the voice of the Backward Classes and the spirit of social justice

Conclusion:

- The concept of 'unanimous elections' is not a novel concept, states like Gujarat, Haryana, Himachal Pradesh, Telangana and Punjab are having an election to gram panchayats on a non-political party basis.

- There have been certain states who have taken the route of evolving innovative methods to encourage party-less and unanimous election to gram panchayats similar on lines of AP.
- The Andhra Pradesh state government intends to facilitate concentrating the energies of the gram panchayats to take up development works in the villages for the benefit of the people.

C. GS 3 Related

Category: ECONOMY

1. China is still the largest source of critical imports for India

Context:

- The overdependence on China for the critical imports is a worrying concern, such high overdependence can hurt India in the long run.

Details:

- Imports from China is very essential for the mobile phone industry and pharmaceuticals.
- There is a need to have a multi-pronged strategy with a detailed outline to foster self-reliance and address the skewed nature of the balance of trade.

The trade deficit is not in dollars, it is in overdependence

- India's production chain in mobile phone manufacturing lacks resilience as it can be disrupted with any supply chain shocks with close to 85% content coming from one country.
- Similarly, if China were to stop the active pharmaceutical ingredients (APIs) for penicillin, India would not be able to produce it in the country. When somebody controls your production, that is a sentiment which raises concern.
- India has taken a note of the excessive dependence on China and had begun working on a multi-pronged strategy to reduce this dependence, these efforts range from the Production Linked Incentive (PLI) scheme to boost domestic manufacturing, a global effort involving India's foreign missions to find alternatives to China, and the utilization of free trade agreements (FTAs) with other trading partners
 - Production Linked Incentive (PLI) is a scheme that intends to give companies incentives on incremental sales from products manufactured in domestic units.
 - The scheme also aims to invite foreign companies to establish their base in India, the scheme also aims to encourage local companies to set up or expand existing manufacturing units.

Times of pandemic

- The COVID-19 has been an enabler in this change, had helped accelerate this change. When production in China was hit early in 2020, although its economy would recover by the summer and become the only major economy to avoid contraction last year, India shared with its foreign missions lists of items critically dependent on China, following which the missions linked up with suppliers in their countries.

No knee-jerk reaction

- It is foolhardy to expect a drastic reduction in the critical imports from China as China still occupies the position of the largest source of imports for critical items.
- Key sectors like the pharmaceuticals and electronics sectors are hugely dependent on supply from China.
- Therefore, the aim to diversify the supply base should not be seen as an anti-china move.
- The pandemic has created a window of opportunity for India, with many countries taking the route of diversifying, this has meant that India could be a potential place future expansion in capacity.
- The PLI scheme will be pivotal if India is expected to make any progress in reducing the China-dependency and also allowing the foreign companies to set up shop in the country.
- There is a sense of optimism that PLI is going to accelerate the investment in India and the optimism is also backed up with Apple start manufacturing in India.

Bilateral trade ties

- China is the leading destination of India's imports, however, the imports last year dipped by 10.8%, the lowest since 2016.
- Two-way trade in 2020 reached \$87.6 billion, down by 5.6%, while the trade deficit declined to a five year-low of \$45.8 billion.
- The steel imports had fallen from a high of \$2.8 billion to under \$1 billion, this is largely attributed to the FTA with South Korea.
- India's decision to opt-out of the Regional Comprehensive Economic Partnership (RCEP) was largely based on being in the same trading bloc as China.
- China has been very rigid in terms of imposing a plethora of non-tariff barriers, thus not allowing India's exports to make headway in the Chinese economy.
- In 2018, both sides signed a number of protocols, including for rice and tobacco, but none of this has contributed to a substantial trade. India's exports to China did, however, cross \$20 billion for the first time last year.

Conclusion:

- While there is no denying that India is depending on China over critical imports excessively, however, India has shown signs of moving away in the direction of evolving domestic policies like the Production-linked incentive scheme and also aiming to leverage FTAs to diversify imports.

Category: SPACE

1. How neutrinos aid in the death of massive stars

Context:

- A team from IIT Guwahati has come up with observation as to how the neutrinos play a role in the death of massive stars.

Details:

- Some stars burn out instead of fading. These stars end their evolutions in massive cosmic explosions known as supernovae.
- Several stars, when they approach their final years, form supernovas, massive explosions that send their outer layers shooting into the surrounding space.
- Most of the energy from the explosions associated with the supernova is carried away by neutrinos.
- A neutrino is a subatomic particle that is very similar to an electron but has no electrical charge and a very small mass, which might even be zero.
- Neutrinos are one of the most abundant particles in the universe. Because they have very little interaction with matter, however, they are incredibly difficult to detect.

Fate of the star

- The burning of nuclear fuel in their cores to produce energy is a process that is similar to all-stars.
- The process of burning generates internal pressure which pushes outwards, thus preventing the star from collapsing inward under the weight of its own gravity.
- However, as the star ages and runs out of fuel to burn, it's interior begins to cool, this contributes to its internal pressure dropping down and therefore the impact of the force of gravity, the star starts to collapse inwards.
- The sudden nature of the process contributes towards building up of shock waves, and the shock wave sends the outer material of the star flying, this is referred to as a supernova, this phenomenon is usually observed in stars of gigantic proportions.
- In stars that are in excess of eight times the size of the Sun, the supernova is accompanied by a collapsing of the inner material of the dying star, this is commonly referred to as core-collapse supernova or Type II supernova.

Three flavours

- Neutrinos can be classified into three 'flavours', and each flavour is associated with a light elementary particle.
 - For instance, the electron-neutrino is associated with the electron; the muon-neutrino with the muon and the tau-neutrino with the tau particle.
- The supernova is associated with large explosion and as the energy is carried over by neutrinos. The neutrinos, while doing so can change from one flavour to another in a process known as neutrino oscillations.
 - The type of flavour oscillates, because the phase of the wave changes, this phenomenon is called neutrino

Conclusion

- The researchers have noted that the fast oscillations are important as they can decide the flavour information of the supernova neutrinos.
- Understanding this is important when one wants to measure the influence of neutrinos and their oscillations on supernova mechanism and heavy element synthesis in stellar environments.

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: ENVIRONMENT

1. What does 'green tax' mean for vehicle owners?

Context:

- Union Minister for Road Transport and Highways has approved the proposal to levy the tax and it will now go to the states for consultation before it is formally notified.

Details:

- According to the proposal, the transport vehicles which are older than eight years could be charged a Green Tax during the renewal of fitness certificate at the rate of 10 to 25 per cent of the road tax, and personal vehicles are to be charged Green Tax at the time of renewal of Registration Certification after 15 years.

Need for such a policy

- It is estimated that commercial vehicles constitute about 5 per cent of the total vehicle fleet and contribute about 65-70 per cent of total vehicular pollution.
- It is also an attempt to push for vehicles like strong hybrids, electric vehicles, and alternate fuels like CNG, ethanol, LPG that are environmentally-benign.
- Government department vehicles that are older than 15 years are to be deregistered and scrapped.
- Green tax funds are to be kept in a separate account to help States measure pollution and tackle it.

Does scrapping old vehicles carry big benefits?

- The scrappage policy has been on the anvil for several years, the policy could provide a much-needed boost to the automobile industry and related businesses by stimulating demand.
- A revival of the automobile industry will provide a 'domino-effect', it will automatically lead to a recovery of steel, aluminium, plastic and so on for recycling, on the other.
- The new fleet of vehicles adhere to stricter emissions and fuel efficiency standards, therefore they are considered to be more environment-friendly, and also possess modern safety features.
- India notified the Corporate Average Fuel Economy (CAFE) Standard for passenger vehicles in 2016, the CAFÉ standards boost fuel efficiency.
 - They aim at lowering fuel consumption (or improving fuel efficiency) of vehicles by lowering carbon dioxide (CO₂) emissions, thus serving the twin purposes of reducing dependence on oil for fuel and controlling pollution.

- Corporate Average refers to sales-volume weighted average for every auto manufacturer. The norms are applicable for petrol, diesel, LPG and CNG passenger vehicles. CAFE regulations in India came into force from April 1, 2017. Under this, average corporate CO₂ emission must be less than 130 gm per km till 2022 and below 113 gm per km thereafter.
- The average fuel consumption standard as provided by the Power Ministry's Bureau of Energy Efficiency (BEE) is less than 5.49 litres per 100 km.
- The second round of tighter efficiency norms is expected to be enforced from 2022 onwards, there exists separate standards for light, medium and heavy commercial vehicles.
- CAFE also regulates CO₂ emissions, while other pollutants such as carbon monoxide, oxides of nitrogen and sulphur are covered by Bharat Stage fuel standards.
 - As per BS-VI emission norms, petrol vehicles will have to effect a 25% reduction in their NO_x, or nitrogen oxide emissions. Diesel engines will have to reduce their HC+NO_x (hydrocarbon + nitrogen oxides) by 43%, their NO_x levels by 68% and particulate matter levels by 82%.
- The benefits from vehicle replacements can be gauged from Transport Ministry data: commercial vehicles make up 5% of the vehicle fleet but contribute an estimated 65-70% of total vehicular pollution.

A different approach

- There have been efforts in the past by other countries to renew the vehicular fleet, case in point being the Car Allowance Rebate System (CARS).
 - It was a \$3 billion U.S. federal scrappage program intended to provide economic incentives to U.S. residents to purchase a new, more fuel-efficient vehicle when trading in a less fuel-efficient vehicle.
- The program was promoted as a post-recession stimulus program to boost auto sales while putting more fuel-efficient vehicles on the roadways.
- India's scheme deviates from the above-mentioned attempt, wherein the proposed policy relies on penal taxation to nudge the owners to scrap their old vehicles, with no cash-for-trade-in arrangement.
- India's attempt will require the additional tax proposed to exceed the resale value of the polluting motor, thus incentivizing its disposal, backed up with adequate safeguards to ensure that it is indeed scrapped and recycled under a monitored system.
- Equity features can possibly be made a part of the scheme, like offering a discount to operators such as autorickshaw drivers who belong to a lower-income segment, similar to the 2009 stimulus given under the JNNURM scheme for buses.
- The suggested policy shifts the focus on electric vehicles and can be a part of a green post-pandemic recovery plan.
- Some critics say the U.S. scheme was not carefully targeted to primarily help those who could not afford a replacement.
- The BEE estimates that higher efficiency norms could result in a fuel use reduction of 22.97 million tons by 2025 in India.

Is the proposed policy for scrappage workable?

- During the drafting of the scrappage policy in 2015, the idea of providing a discount of ₹30,000 to ₹50,000 for new passenger vehicles was mooted for those choosing to put their vehicles for scrapping.
- The commercial vehicles had benefits including taxes around an estimate of ₹1.5 lakh, however, this idea did not materialize.
- The [NITI Aayog](#) had raised concerns over the proposal, it cited that some sections may be deterred by the high capital costs to retire old vehicles.
- Other proposals in earlier drafts included tax discounts for those who exchanged old motors for new ones.
- The present initiative, however, has the limited objective of pushing the owners of older vehicles to sell the older vehicles rather than pay a green tax penalty.
- In the absence of adequate incentive or penalty, and careful targeting of vehicles with knowledge of their condition, a tax penalty would not be effective in nudging the commercial vehicle owners, since the tax would be far lower than its resale value and earnings potential; there would be no compulsion to retire it. Continued operation of the vehicles would defeat the clean air objective and bring no cheer to the automobile industry.
- The scrappage policy is expected to boost demand for new vehicles in a COVID-hit economy. It is considered as crucial for the revival of India's auto sector, which was struggling since a year before the onset of the pandemic.
- Adequate care has to be taken to oversee that the sudden demand stimulus available to the auto industry must not place the consumers at a disadvantageous position.

What are the options available to tweak the policy?

- The automobile industry in general and commercial transport vehicles, in particular, are key planks to tackling air pollution, the metrics which will be focused will be fuel efficiency, emissions and safety.
- The Centre should work on financial instruments such as loans and grants aimed at supporting the smaller operators to scrap their junk vehicles while escalating the green tax annually to achieve the nudge effect.
- A second stimulus to bus companies could help green the fleet and cut pollution.
- Small operators such as autorickshaws could be offered low-interest loans, particularly to move to electric vehicles.

Way Forward

- The vehicle registration database for all States requires updating to reflect true numbers of old vehicles on the road, eliminating those scrapped; a significant number, more than 15 years old, still runs. Such data will help target scrappage policy benefits better.
- There is a need to support small entrepreneurs who own and operate transport vehicles as they lack the resources to transition to newer ones, therefore, there is a need to provide loans and grants to enable a smooth transition.
- India's policy to phase-out polluting fuel guzzlers has had a long gestation, and States should see the value of operationalising it as planned.

- The new fleet of vehicles and cleaner fuels will make the air pollution problem less severe in cities and also ensure road safety.

Category: SCIENCE & TECHNOLOGY

1. Testing vaccines against SARS-CoV-2 variants

Context:

- There have been concerns over the impact of the already approved vaccines on the mutated virus.
- Doubts have arisen over the efficacy of the vaccines in being able to combat the spread of the virus.

Mutation of virus

- A mutation means an alteration in genetic material. A mutation is part of the life cycle of a virus. Once the virus enters a host, it begins to replicate and make copies of itself.
- In an RNA virus such as SARS-CoV-2, proteins are made of a sequence of amino acids. Such a virus contains some 30,000 'base pairs', which can be likened to bricks placed next to each other to form a structure.
- An alteration in this base can be a mutation, effectively changing the shape and behaviour of the virus.

Details:

- Bharat Biotech's Covaxin has been reported to have been successful against the U.K. variant or a new variant of SARS-CoV-2.
- The report has been confirmed by Bharath Biotech and the Indian Council of Medical Research (ICMR).
- Similarly, the vaccines of Pfizer and Moderna, have also undertaken studies to check if their vaccines are effective against new variants.

Why and how are such studies done?

- Covaxin by Bharath Biotech has been issued approval under Emergency Usage Authorization.
- The reason to push for approval with incomplete clinical trials data was the possible infection by mutant strains, like the U.K. variant.
- The United Kingdom witnessed huge fatalities and went into another lockdown during the Christmas and new year eve period due to the B.1.1.7 variant, with many mutations, some in the spike protein.
- The mutated virus was found in traces in other parts of the world, including in India, all of whom had a common travel history tracing back to the U.K.
- Another variant, B.1.351, first identified in South Africa, has been reported from several countries. With most vaccines targeting the spike protein, a variant with mutations that helps SARS-CoV-2 evade the immune system could defeat their purpose.
- The serological test called the Plaque Reduction Neutralisation Test (PRNT) is often used to test the efficacy of a specific antibody to neutralise a virus.

- The blood serum, which possesses antibodies, is collected from people who have been infected or have been vaccinated.
- This antibody liquid is diluted and mixed with the virus and evaluated in customised plates to see the extent to which neutralising antibodies were successful in containing the virus spread.
- To ascertain the antibodies' capabilities against mutant variants, scientists at the National Institute of Virology, Pune, used antibodies obtained from people who had been vaccinated in the Covaxin trials and tested them against virus extracted from those infected with the U.K. strain and another un-named strain, hCoV27 19/India/2020Q111, reportedly a strain with provenance from Iran.

What did the study find?

- The objective of Plaque Reduction Neutralisation Test (PRNT) is to find the antibodies needed to reduce a given amount of virus by a fixed proportion.
 - The plaque reduction neutralization test is used to quantify the concentration of neutralizing antibody for a virus.
- The test revealed that irrespective of the SARS-CoV-2 strain tested, approximately the same number of antibodies were required to nullify the virus.
- The takeaway from the test is that Covaxin generated antibodies that were equally effective against the mutant U.K. variant and the virus used to make the vaccine.
- Tests by Pfizer and Moderna had found similar results, though there has been no such test reported on the AstraZeneca Covishield vaccine.

What does it imply?

- The latest study is a shot in the arm for Covaxin to be tested in large trials. A laboratory study that quantifies the antibodies generated against a virus does not correlate with a vaccine's efficacy or effectiveness in the field.
- That can only be done via a phase-3 trial that compares it in different sets of the population.
- A limitation of the Covaxin study is that it does not discuss other important aspects. For instance, an important mutation in the South African variant, called E484K, has been found to help the virus evade detection.

How long does antibody protection last?

- The duration of protection is not well established as of now, it is not conclusive to say if a mutant can evade lower concentrations of antibodies.
- The promoters of Covaxin and scientists at the ICMR are of the opinion that the strength of a vaccine lies in it being a whole-inactivated virus, implying a larger surface area of the virus is visible to the immune system and thereby a wider range of antibodies are produced.
- However, the evidence so far is that antibodies from all vaccines are largely targeted at the spike protein or the operative region where the virus binds to the cell; therefore, more does not necessarily mean better.

What remains to be tested?

- A common challenge across all vaccines is that it must induce a calibrated response from the immune system, just enough so that antibodies guard against a future, actual infection and not so much that too many weakly neutralising antibodies (aiding a condition called antibody-dependent enhancement) are produced.

F. Tidbits

1. Send ASI team to Study Ekamra Kshetra: Pradhan

Context:

- Union Petroleum and Natural Gas Minister urged the Centre to send an Archaeological Survey of India (ASI) team to carry out a detailed study and excavation at the “Ekamra Kshetra”.

Details:

- The Ekamra Kshetra has the unique cultural heritage of having Buddhist sites at Dhauli, Jain sites at Khandagiri-Udayagiri and Hindu temples in and around the Old Bhubaneswar area.

Ekamra Kshetra

- *Ekamra Kshetra* comprises the area of the old city of Bhubaneswar that forms the centre of this temple architecture and is considered a Hindu holy city.
- As per *Ekamra Purana*, a 13th-century Sanskrit treatise, it is believed that this sacred *kshetra* was a Panchakrosa (10 miles) in circumference bordered by Khandagiri hills in the west, Kundalesvara temple in the east, Balhadevi Temple on the north and Bhirangesvara temple near Dhauli on the south, with Lingaraj Temple as its centre.

G. Prelims Facts

Nothing here for today!!!

H. UPSC Prelims Practice Questions

Q1. Consider the following statements

1. “Ekamra Kshetra” comprises the temples of Varnasi
2. Ekamra Kshetra has the unique cultural heritage of having Buddhist sites, Jain sites and Hindu temples.

Which of the following statements are true?

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

Answer: b

Explanation:

- The Ekamra Kshetra has the unique cultural heritage of having Buddhist sites at Dhauli, Jain sites at Khandagiri-Udayagiri and Hindu temples in and around the Old Bhubaneswar area.

Q2. Which of the following factors aid the formation of a tropical cyclone:

1. Coriolis force
2. Availability of latent heat
3. Temperature contrast between air mass
4. Wind shear

Which of the following statements are correct?

- a. 1 and 2
- b. 1, 2 and 3
- c. 2 and 4 only
- d. All of the above

Answer: d

Explanation:

- All the statements are correct.

Q3. Damara is a town located in:

- a. Algeria
- b. Morocco
- c. Ethiopia
- d. Central African Republic

Answer: d

Explanation:

- Damara is a town located in the Central African Republic.

Q4. Consider the following statements:

1. Neutrinos are the most abundant particles in the universe.
2. India-based Neutrino Observatory is located in Hanle, Ladakh.

Which of the following statements are true?

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

Answer: d

Explanation:

- India-based Neutrino Observatory is located in Theni, Tamil Nadu
- Neutrinos are the most abundant particles in the universe after Photons.

I. UPSC Mains Practice Questions

1. Discuss the need to have a multi-pronged strategy to reduce dependence on China for critical imports. (15 marks, 250 words) (GS-3 Indian Economy)
2. What does 'green tax' mean for vehicle owners? (10 marks, 150 words) (GS-3 Environment)