JAI BHIM MUKHYAMANTRI PRATIBHA VIKAS YOJANA

Context

Delhi SC/ST Welfare Minister chaired a meeting with around 15 heads private coaching institutes to include more such institutes in an existing free coaching programme for SC students.

About

Jai Bhim Mukhyamantri Pratibha Vikas Yojana

- It was launched by the Delhi Government in 2018 to provide quality coaching for economically disadvantaged Scheduled Castes (SCs) candidates to enable them to compete in Competitive examination and succeed in obtaining an appropriate job in Public/ Private sector.
- The scheme will be implemented through the reputed institutions/centers run by the registered private institutions /NGOS.
- Only students belonging to SCs residing in Delhi & who have passed 10th and 12th class ( or studying in class XII) from the schools in Delhi , having total family income of not more than Rs.6.00 lakh per annum will be eligible under the scheme.
- The ratio of students who have completed their studies from Govt. and Private Schools to be coached under the Scheme will be 75:25.
- Under the scheme, the government currently pays a maximum of Rs. 40,000 to selected eight institutes for the coaching of each student. Apart from it, a monthly stipend of Rs. 2,500 is given to each student. Now, the amount will be increased from Rs. 40,000 to Rs. 1,50,000 and the duration of the coaching will also be extended.

Outcome

Of the 107 students who got free coaching for engineering and medical entrance exams under the Jai Bhim Mukhyamantri Pratibha Vikas Yojana, 13 have been declared successful in the JEE Main and 22 in the National Eligibility-cum-Entrance Test (NEET).
TIGER CENSUS

Context
Prime Minister on Monday released the All India Tiger Estimation Report 2018

About

- India has 2,967 tigers, a third more than in 2014, according to results of a tiger census
- This gargantuan exercise is been conducted once in four years.
- Madhya Pradesh saw the highest number of tigers, closely followed by Karnataka and Uttarakhand.
- Chhattisgarh and Mizoram saw a decline in tiger population and all other States saw a “positive” increase.
- This gargantuan exercise is been conducted once in four years.
- Pench Tiger Reserve in Madhya Pradesh recorded the highest number of tigers; Sathyamangalam Tiger Reserve in Tamil Nadu registered the “maximum improvement.
- India accounts for many of the 3,500-odd tigers that are scattered among Bangladesh, Bhutan, Cambodia, China, Indonesia, Laos PDR, Malaysia, Myanmar, Nepal, Russian Federation, Thailand and Vietnam.

VARIOUS METHODS USED FOR COUNTING TIGERS

- **Pug Mark Method:** In this method, the foot print of the tiger is important. It is considered that each pug mark is unique in itself & by analyzing various foot prints in the areas of tigers, the number of tigers in that area can be counted.
- **Camera Trap:** In this various method, cameras are installed in the tiger areas having night vision facility as well. By recording various tigers in the camera, the number of tigers can be estimated.
Poop/scat Method: In this method the number of tigers is counted by poop/scat. The poop is analyzed by DNA sampling and then we can arrive at a more accurate count.

Radio Collar Method: Tigers are captured in this method & are fitted with a radio collar. In this way the tigers can be counted.

Criticism

- The Camera Trap estimation of tiger numbers in source populations, in tiger reserves was poorly done which was a violation of capture-recapture modeling.
- The estimated of prey species densities from line transects were poorly done which is against the current practices.
- The complicated, ‘double-sampling’ based regression model is somewhat flawed and obsolete approach.
- Their statistical methodology of relying on calibrations and regressions based on track and dung surveys to generate wider estimate tiger numbers in wider landscapes was also deeply flawed.
- Based on Enumerators Subjective Ability to Identify Individual Tigers from Pugmarks.
- Variation in Pugmarks with substratum, gait, and observers recording skills
- Not possible to obtain Pugmarks from all Tiger Occupied Landscapes.
- Camera trap method becomes useless in areas having salty waters. It damages the camera.
- Not always that someone will get the poop of all the tigers in an area.
- In Radio Collar Method the method fails when the concerned tiger enters the salty water.

Measures to improve tiger conservation efforts in the country

- Protect tigers and their habitat.
- Build capacity in range states.
- Reduce human-tiger conflict.
Conduct scientific research on tigers to help inform conservation strategies.

Promote tiger-friendly policies.

Monitor tiger numbers, population trends, and threats to tigers and their habitats.

To build more tiger reserves in India.

To enforce complete ban on poaching.

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**3D PRINTED PILL**

**Context**

New ingestible, 3D printed pill can analyse gut microbiome.

**About**

**More on news:**

- Researchers have developed an ingestible 3D printed pill, which can non-invasively assess gut bacteria throughout the gastrointestinal (GI) tract.
- This biocompatible pill is manufactured in a 3D printer with microfluidic channels.
- It can easily sample different stages of the GI tract, which was till now impossible to track non-invasively.
- Current method is based on the use of DNA sequencing techniques to analyse bacteria found in the gut known as the **microbiome** (The gut microbiome is comprised of the collective genome of microbes inhabiting the gut including bacteria, archaea, viruses, and fungi).

**Highlights of a research**

- The pill has been primarily tested in pigs and on primates, which showed that it can accurately conduct in vivo sampling of the gut lumen and its microbiome that is upstream of the colon.
- It can also aid in the diagnosis and treatment of conditions affected by the microbiome.

**Significance**

- The pill will improve our understanding of the role of spatial distribution in the microbiome profile to advance treatments and therapies for a number of diseases and conditions.
Profile of the pill

- The pill has a pH sensitive coating, which dissolves once it enters the small intestine (bypassing the stomach).
- It consists of two chambers that are separated by a semi-permeable membrane.
- One chamber contains helical channels, while the other is filled with calcium and salt. The salt chamber creates an osmotic flow across the membrane, which then pulls the bacteria into the helical channels.
- The pill also carries a small magnet. Using a magnet outside the body, the researchers can also get a spatial diversity of the gut micro biome.
- The design of this device makes it incredibly easy to use, posing little risk to the subject being measured, yet providing so much information.
- Compared to other non-invasive diagnostic devices, this is like having an EKG (electrocardiogram) for gut health.

Question

3D printed pill was seen in news recently. Which of the following statements about it is correct?

a. It is an antibiotic developed to target Multidrug Resistant Bacteria.

b. It is a newly developed vaccine to prevent zika virus disease.

c. It is developed to assess gut bacteria throughout the gastrointestinal (GI) tract.

d. It is a newly developed contraceptive pill.

Correct Answer: (c)

Explanation:

Researchers have developed an ingestible 3D printed pill, which can non-invasively assess gut bacteria throughout the gastrointestinal (GI) tract.

- This biocompatible pill is manufactured in a 3D printer with microfluidic channels.
- It can easily sample different stages of the GI tract, which was till now impossible to track non-invasively.
- Current method is based on the use of DNA sequencing techniques to analyse bacteria found in the gut known as the microbiome (The gut microbiome is comprised of the collective genome of microbes inhabiting the gut including bacteria, archaea, viruses, and fungi).
ARTICLE 35 A

Context

Union home ministry decided to move in 10,000 additional troops to Kashmir, which has amplified apprehensions on the ground about the removal of the Article 35A and Article 370, the two constitutional provisions that give the state its distinct identity within the Union of India.

About

What is Article 35A?

- It is a Constitutional provision, which strengthened J&K Legislature to decide who all are ‘permanent residents’ of the State.
- It also confers on them special rights and privileges in public sector jobs, acquisition of property in the State, scholarships and other public aid and welfare.

Background

- Article 35A was incorporated through a Presidential Order, the Constitution (Application to J&K) Order of 1954. Therefore, it was added without undergoing the procedure for constitutional amendments as laid down in Article 368.
- The Presidential Order was issued in exercise of the power conferred under Article 370 (1) (d) of the Constitution. Whether such power also extends to inserting a new Article in the Constitution is contentious.
- The ‘classification’ created by this article has to be tested on the principle of equality as it treats non-permanent residents of J&K as ‘second-class’
- Such persons are not eligible for employment under the State government and are also debarred from contesting elections.

Arguments in support of 35A

- **Maintains unity of J&K**: This article safeguards the uniqueness of the J&K. Even other states like Himachal Pradesh and Uttarakhand also have the laws in which no outsider from the state can buy a land.
- **Striking down Article 35A**: It will have various consequences on other constitutional amendments contained in the 1954 Presidential Order. And this can erode the autonomy of J&K.
• **Demography of J&K**: Scapping Article 35A would allow people from outside J&K to settle in the state and acquire land and property, and the right to vote, thus altering the demography of the state.

• **Other Presidential Orders**: If the article 35A is scrapped, other Presidential orders may then become susceptible to legal challenges.

• **Federalism**: Scapping Article 35A would violate Article 370 as well as the instrument of accession. The Indian constitution purposefully mandates differential treatments for different units of the Indian Union.

• **North-Eastern states**: The removal of Article 35A would also indirectly impact the special provision bestowed upon Mizoram, Nagaland etc. under Article 371.

**Issues Related to Article 35A**

• **Bypasses Article 368**: The parliamentary route of law-making was bypassed under the Article 368 (i) when the President incorporated Article 35A into the Constitution. This article empowers only Parliament to amend the Constitution.

• **Against Unity**: Article 35 A is against the “very spirit of oneness of India” as it creates a “class within a class of Indian citizens”. As this article restricts citizens from other States from getting employment or buying property within Jammu and Kashmir is a violation of fundamental rights under Articles 14, 19 and 21 of the Constitution.

• **Right to Unity**: Article 35A protects certain provisions of the Jammu and Kashmir Constitution, which restrict the basic right to property if a native woman marries a man not holding a permanent resident certificate. Her children are denied a permanent resident certificate, thereby considering them illegitimate.

• **Deny of opportunity**: Meritorious students are denied scholarships and they cannot even seek redress in any court of law.

• **Rights of Pakistani Refugees**: This article undermines the rights of West Pakistan refugees. Persons who migrated from Pakistan to India in 1947 have been denied the permanent resident status of J&K.

• **Promotes Separatism**: This article has catalysed in radicalization and ghettoization and aids separatist ideology.
• **Human Rights**: It grossly undermines the well-being of Pakistani Refugees and Indian Citizens outside of the state. It also undermines their faith in the goodness of India as well as its impartial judicial system.

• **Hampers Growth**: Article 35A also adversely affects the economic development of the state.

‘PM AWAS YOJANA AND PRAGATI PLATFORM’

**Context**

Prime Minister reviewed the progress of Pradhan Mantri Awas Yojana (Urban) scheme under PRAGATI meeting and directed officials to work towards the goal of ensuring “Housing for All” by 2022.

**PRADHAN MANTRI AWAS YOJANA (URBAN) – PMAY (U) - Housing for All (HFA)**

The Mission will be implemented during 2015-2022 and will provide central assistance to Urban Local Bodies (ULBs) and other implementing agencies through States/UTs for:

• **In-situ Rehabilitation** of existing slum dwellers using land as a resource through private participation

• **Credit Linked Subsidy**

• **Affordable Housing** in Partnership with public and private sectors

• Subsidy for **Beneficiary-led individual** house construction/enhancement. Credit linked subsidy component will be implemented as a Central Sector Scheme while other three components will be implemented as Centrally Sponsored Scheme (CSS).

**PRADHAN MANTRI AWAS YOJANA (RURAL) – PMAY (Gramin) - Housing for All (HFA)**

This scheme serves to provide housing facilities to the rural, deprived, poor people living in underdeveloped villages in India.

• It proposes to provide an environmentally safe and secure pucca house to every rural household by 2022.

• A minimum support of **nearly Rs. 1.5 lakh to Rs. 1.6 lakh** to a household is available.
• A provision of Bank loan **upto Rs. 70,000/-** is available if the beneficiary desires.
• Beneficiaries have been selected through a completely transparent process using the Socio **Economic Census 2011 data**.
• It provides for **skilling Rural Masons** and **allowing different housing designs** across the country based on a detailed study of housing typologies, environmental hazards and the households’ requirements.
• A **large scale use of local materials** is envisaged along with a complete home with cooking space, electricity provision, LPG, toilet and bathing area, drinking water etc. through convergence.
• It targets the poor households and **uses ICT and space technology** to further confirm correct selection of beneficiaries.

**PRAGATI: a multi-purpose, multi-modal platform for Pro-Active Governance and Timely Implementation**
• It is a unique integrating and interactive platform.
• It is aimed at addressing common man’s grievances and thus provides a **grievance redressed mechanism**.
• It simultaneously **monitors and reviews important programmes** and projects of the Government of India as well as projects flagged by State Governments.
• It uniquely bundles **three** latest technologies: Digital data management, video-conferencing and geo-spatial technology.
• It also offers a unique combination in the direction of **cooperative federalism** since it brings on one stage the Secretaries of Government of India and the Chief Secretaries of the States.

**BIO FUEL**

**Context**

A Nano carbon catalyst developed by IIT-Hyderabad can be used to convert corn cob waste into valuable fuels

**About**
About

- Any fuel that is derived from biomass—that is, plant or algae material or animal waste.
- Feedstock material can be replenished readily, bio fuel is considered to be a source of renewable energy, unlike fossil fuels such as petroleum, coal, and natural gas.
- Bio fuel is commonly advocated as a cost-effective and environmentally benign alternative to petroleum and other fossil fuels.
- The term bio fuel is usually used to reference liquid fuels, such as ethanol and biodiesel.
- Bio fuels can also include solid fuels like wood pellets and biogas or syngas.

Bio fuels

- **Jatropha**: Jatropha curcas is multipurpose non edible oil yielding perennial shrub. This is a hardy and drought tolerant crop can be raised in marginal lands with lesser input.
- **Sugarbeet**: Sugar beet is a biennial sugar producing tuber crop, grown in temperate countries. Now tropical sugar beet varieties are gaining momentum in tropical and sub tropical countries, as a promising alternative energy crop for the production of ethanol.
- **Sorghum**: Sorghum is the most important millet crop occupying largest area among the cereals next to rice. It is mainly grown for its grain and fodder. Alternative uses of sorghum include commercial utilization of grain in food industry and utilization of stalk for the production of value-added products like ethanol, syrup and jaggery and bio enriched bagasse as a fodder and as a base material for cogeneration.
- **Pongamia**: There is several non edible oil yielding trees that can be grown to produce bio fuel. Karanja is one of the most suitable trees. It is widely grown in various parts of the country.

Categories of bio fuels

- **First generation bio fuels** - First-generation bio fuels are made from sugar, starch, vegetable oil, or animal fats using conventional technology. Common first-generation bio fuels include Bio alcohols, Biodiesel, Vegetable oil, Bio ethers, Biogas.
- **Second generation bio fuels** - These are produced from non-food crops, such as cellulosic bio fuels and waste biomass (stalks of wheat and corn, and wood). Examples include advanced bio fuels like bio hydrogen, bio methanol.
- **Third generation bio fuels** - These are produced from micro-organisms like algae.
Fourth Generation Bio fuels - Four Generation Bio-fuels are aimed at not only producing sustainable energy but also a way of capturing and storing co2. Biomass materials, which have absorbed co2 while growing, are converted into fuel using the same processes as second generation bio fuels. This process differs from second and third generation production as at all stages of production the carbon dioxide is captured using processes such as oxy-fuel combustion. This system not only captures and stores carbon dioxide from the atmosphere but it also reduces co2 emissions by replacing fossil fuels.

Advantages

- Cost: Bio fuels prices have been falling and have the potential to be significantly less expensive than gasoline and other fossil fuels. In fact, ethanol is already cheaper than diesel and gasoline. This is particularly true as worldwide demand for oil increases, oil supplies dwindle, and more sources of bio fuels become apparent.

- Source material: Whereas oil is a limited resource that comes from specific materials, bio fuels can be manufactured from a wide range of materials including crop waste, manure, and other by-products. This makes it an efficient step in recycling.

- Renewability: It takes a very long time for fossil fuels to be produced, but bio fuels are much more easily renewable as new crops are grown and waste material is collected.

- Security: Bio fuels can be produced locally, which decreases the nation's dependence upon foreign energy. By reducing dependence on foreign fuel sources, countries can protect the integrity of their energy resources and make them safe from outside influences.

- Economic stimulation: Because bio fuels are produced locally, bio fuel manufacturing plants can employ hundreds or thousands of workers, creating new jobs in rural areas. Bio fuel production will also increase the demand for suitable bio fuel crops, providing economic stimulation to the agriculture industry.

- Lower carbon emissions: When bio fuels are burned, they produce significantly less carbon output and fewer toxins, making them a safer alternative to preserve atmospheric quality and lower air pollution.

Disadvantages

- Energy output: Bio fuels have a lower energy output than traditional fuels and therefore require greater quantities to be consumed in order to produce the same energy level. This has led some
noted energy analysts to believe that bio fuels are not worth the work to convert them to ethanol rather than electricity.

- **Production carbon emissions**: Several studies have been conducted to analyze the carbon footprint of bio fuels, and while they be cleaner to burn there are strong indications that the process to produce the fuel - including the machinery necessary to cultivate the crops and the plants to produce the fuel - has hefty carbon emissions. In addition, cutting forests to grow crops for bio fuels adds to carbon emissions.

- **High cost**: To refine bio fuels to more efficient energy outputs, and to build the necessary manufacturing plants to increase bio fuel quantities, a high initial investment is often required, making its production currently more expensivethan other ways to fuel cars, even though this could change in the future.

- **Food prices**: As demand for food crops such as corn grows for bio fuel production, it raises prices for necessary staple food crops.

- **Food shortages**: There is concern that using valuable cropland to grow fuel crops could have an impact on the cost of food and could possibly lead to food shortages.

- **Water use**: Massive quantities of water are required for proper irrigation of bio fuel crops as well as to manufacture the fuel, which could strain local and regional water resources.

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**E-CIGARETTES**

**Context**

The government’s proposal to ban e-cigarettes and other electronic nicotine delivery systems (ENDS).

**About**

- An electronic cigarette or e-cigarette is a handheld battery-powered vaporizer that simulates smoking by providing some of the behavioural aspects of smoking, but without burning tobacco.

- E-cigarettes contain potentially harmful substances – such as heavy metals like lead, volatile organic compounds and cancer-causing agents.
e-cigarettes contain nicotine and not tobacco, they do not fall within the ambit of the Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (COTPA), which mandates stringent health warnings on the packaging and advertisements of tobacco products.

Facts on e-cigarettes

- E-cigarettes aim to resemble cigarettes, but without burning tobacco.
- They are sold as aids to reduce or quit smoking, and some people find them helpful for this.
- However, research shows that they may have a negative impact on health.
- Health authorities are trying to tighten up regulations to discourage young people from using e-cigarettes.

Benefits

- E-cigarettes claim to bypass many of the health risks of tobacco smoking, and to offer a more healthful alternative to cigarettes and other conventional forms of nicotine intake.
- Some studies have found that using e-cigarettes can help some smokers quit.
- They offer "modest" benefits for those who want to quit smoking, but "good potential" for those who are cutting down.
- The Centers for Disease Control and Prevention (CDC) says that e-cigarettes can benefit adult smokers who are not pregnant, as long as they completely replace any other nicotine or tobacco products.

Risks

- Most e-cigarettes contain nicotine, which is addictive and triggers changes in the adolescent brain. It is hazardous during pregnancy as it can affect fetal development.
- The aerosol contains solvents, flavorings, and toxicants, which the Surgeon General describes as either "harmful" or "potentially harmful."
- E-cigarettes expose the lungs to different substances. One of these is dicetyl, which can cause "popcorn lung," a severe and irreversible lung disease.
• Potentially fatal poisoning has resulted from accidentally swallowing and from inhaling e-cigarette liquid.

• People who seek to quit smoking will stop using conventional and medically monitored methods of doing so.

• Those who use or who have used e-cigarettes are less likely to stop smoking altogether.

• Teens who use e-cigarette products are more likely to start using regular tobacco as well.

• Continued use of nicotine can make other drugs, such as cocaine, more pleasurable.

• The flavorings, the marketing, and the concept that it is not harmful all tempt teenagers to start vaping. There is concern that this increases the chance that they will smoke conventional cigarettes later.

• Second-hand smoking is not eliminated by vaping, as vaping releases carcinogenic emissions.

**How do e-cigarettes affect the brain?**

• The nicotine in e-liquids is readily absorbed from the lungs into the bloodstream when a person uses an e-cigarette.

• Upon entering the blood, nicotine stimulates the adrenal glands to release the hormone epinephrine (adrenaline).

• Epinephrine stimulates the central nervous system and increases blood pressure, breathing, and heart rate.

• As with most addictive substances, nicotine activates the brain’s reward circuits and also increases levels of a chemical messenger in the brain called dopamine, which reinforces rewarding behaviors.

• Pleasure caused by nicotine’s interaction with the reward circuit motivates some people to use nicotine again and again, despite risks to their health and well-being.
Context

The Automated Facial Recognition System (AFRS) has been proposed by the Ministry of Home Affairs that aims to modernise the police force by identifying criminals and also enhances information sharing between police units across the country.

About

What is AFRS?

- The AFRS will use images from sources like CCTV cameras, newspapers, and raids to identify criminals against existing records in the Crime and Criminal Tracking Networks and System (CCTNS) database, which is managed by National Crime Record Bureau (NCRB, it manages crime data for police).
- The new facial recognition system will also be integrated with Integrated Criminal Justice System (ICJS), as well as state-specific systems, the Immigration, Visa and Foreigners Registration & Tracking (IVFRT), and the Khoya Paya portal on missing children.
- **Significance:** It can play a very vital role in crime prevention and criminal identification and verification (identifying criminals, missing people, and unidentified dead bodies) by facilitating easy recording, analysis, retrieval and sharing of information between different organizations.

How AFRS works?

- It works by maintaining a large database with photos and videos of peoples’ faces.
- Then, a new image of an unidentified person is compared to the existing database to find a match and identify the person.
- Neural networking is the artificial intelligence technology used for pattern-finding and matching.
- It will not only create a biometric map of our faces, but also track, classify, and possibly anticipate our every move.

Are there any AFRS in use in India?

- It is a new idea the country has started to experiment with. Ministry of Civil Aviation’s “DigiYatra” using facial recognition for airport entry is already in trial in the Hyderabad airport.
- State governments have also taken their own steps towards facial recognition. Telangana police launched their own system in August 2018.

**Question on violation of privacy**
Government says that no violation of privacy as it will only track criminals and be accessed only by law enforcement.

However, AFRS not only creates a biometric map of our faces, but can also track, classify, and possibly anticipate our every move.

Technically speaking, it is impossible for the AFRS to be truly used only to identify, track and verify criminals, despite the best of intentions.

Recording, classifying and querying every individual is a prerequisite for the system to work.

**Assumed guilty**

The system will treat each person captured in images from CCTV cameras and other sources as a potential criminal, creating a map of her face, with measurements and biometrics, and match the features against the CCTNS database.

This means that we are all treated as potential criminals when we walk past a CCTV camera — turning the assumption of “innocent until proven guilty” on its head.

**Argument of efficiency**

It is assumed that facial recognition will introduce efficiency and speed in enforcing law and order. In August 2018, a facial recognition system used by the Delhi police was reported to have an accuracy rate of only 2%. This is a trend worldwide, with similar levels of accuracy reported in the U.K. and the U.S.

Accuracy rates of facial recognition algorithms are particularly low in the case of minorities, women and children, as demonstrated in multiple studies across the world.

Use of such technology in a criminal justice system where vulnerable groups are over-represented makes them susceptible to being subjected to false positives (being wrongly identified as a criminal).

Image recognition is an extremely difficult task, and makes significant errors even in laboratory settings. Deploying these systems in consequential sectors like law enforcement is ineffective at best and disastrous at worst.

**Fears of mass surveillance**

Facial recognition makes data protection close to impossible as it is predicated on collecting publicly available information and analysing it to the point of intimacy.

It can also potentially trigger a seamless system of mass surveillance, depending on how images are combined with other data points.
The AFRS is being contemplated at a time when India does not have a data protection law. In the absence of safeguards, law enforcement agencies will have a high degree of discretion.

**Way Ahead**

- The notion that sophisticated technology means greater efficiency needs to be critically analysed.
- The Personal Data Protection Bill 2018 is yet to come into force, and even if it does, the exceptions contemplated for state agencies are extremely wide.
- A deliberative approach will benefit Indian law enforcement, as police departments around the world are currently learning that the technology is not as useful in practice as it seems in theory.
- Police departments in London are under pressure to put a complete end to use of facial recognition systems following evidence of discrimination and inefficiency.
- San Francisco recently implemented a complete ban on police use of facial recognition. India would do well to learn from their mistakes.

### Criminal Tracking Network & Systems (CCTNS)

It is a countrywide integrated database on crime incidents and suspects, connecting FIR registrations, investigations, and charge sheets of all police stations and higher offices. It also plans to offer citizen services, such as passport verification, crime reporting, online tracking of case progress, grievance reporting against police officers.

### GENOME SEQUENCING

**Context**

- In an indigenous genetic mapping effort, nearly 1,000 rural youth from the length and breadth of the country will have their genomes sequenced by the Council of Scientific and Industrial Research (CSIR).
- The project aims at educating a generation of students on the “usefulness” of genomics.
- The project is an adjunct to a much larger government-led programme, still in the works, to sequence at least 10,000 Indian genomes.

**About**

**What is genome sequencing?**
Genome: It is an organism’s complete set of DNA, including all of its genes.

Each genome contains all of the information needed to build and maintain that organism. In humans, a copy of the entire genome—more than 3 billion DNA base pairs—is contained in all cells that have a nucleus.

Genome sequencing: It is figuring out the order of DNA nucleotides, or bases, in a genome—the order of As, Cs, Gs, and Ts that make up an organism's DNA. The human genome is made up of over 3 billion of these genetic letters.

Sequencing the genome doesn't immediately lay open the genetic information of an entire species. Even with a rough draft of the human genome sequence in hand, much work remains to be done. Scientists still have to translate those strings of letters into an understanding of how the genome works.

What is the methodology?

- Genomes will be sequenced based on a blood sample.
- Every person whose genomes are sequenced will be given a report. The participants would be told if they carry gene variants that make them less responsive to certain classes of medicines. For instance, having a certain gene makes some people less responsive to clopidogrel, a key drug that prevents strokes and heart attack.
- The sequencing to be done at the CSIR-Institute of Genomics and Integrative Biology (IGIB) and the Centre for Cellular and Molecular Biology (CCMB).

How is it useful?

- Determining genetic traits and gene-disease link: Ever since the human genome was first sequenced in 2003, it opened a fresh perspective on the link between disease and the unique genetic make-up of each individual. Nearly 10,000 diseases — including cystic fibrosis, thalassemia — are known to be the result of a single gene malfunctioning. While genes may render some insensitive to certain drugs, genome sequencing has shown that cancer too can be understood from the viewpoint of genetics, rather than being seen as a disease of certain organs.
- Mapping population diversity: Participants of genome-sample collections represent diversity of the country’s population.
- It will help us to compare causes of diseases across other countries. For instance, in developed countries diarrhoeal infections are rarer than in India. It will help understanding of role of genes in this and can track health changes over long periods.
GLOBAL INNOVATION INDEX (GII) 2019

Context

The Government of India (GOI) has launched the Global Innovation Index (GII) in New Delhi. This is the first time that the GII is being launched in an emerging economy.

About

More on news:

- The Department for Promotion of Industry and Internal Trade (DPIIT) of Ministry of Commerce and Industry, World Intellectual Property Organization (WIPO) and Confederation of Indian Industry (CII) have co-hosted the event.
- The theme of GII- 2019 is “Creating Healthy Lives - The Future of Medical Innovation” which aims to explore the role of medical innovation as it shapes the future of healthcare.
- This is the 12th edition of the GII rankings of 129 economies.

GII

- It was introduced in 2009 and it is an annual ranking of countries by their capacity for, and success in, innovation.
- The GII rankings are published every year by Cornell University, INSEAD and the UN World Intellectual Property Organization (WIPO) and GII Knowledge Partners.
- India’s Confederation of Indian Industry (CII) is one of the knowledge partners which assist GII team in bringing out the annual ranking.
- It is based on 80 indicators ranging from intellectual property filing rates to mobile-application creation, education spending and scientific and technical publications.
- The GII is commonly used by corporate and government officials to compare countries by their level of innovation.
- It analyses the medical innovation landscape of the next decade, looking at how technological and non-technological medical innovation will transform the delivery of healthcare worldwide.
It also explores the role and dynamics of medical innovation as it shapes the future of healthcare, and the potential influence this may have on economic growth.

**India’s Performance**

- India’s ranking in the Global Innovation Index is 52 which show an improvement of 5 points from the last years ranking (57).
- It is among the top in the world in innovation drivers such as Information and Communication Technology (ICT), services exports, graduates in science and engineering, the quality of universities, gross capital formation (a measure of economy-wide investments) and creative goods exports.
- It stands out in the world’s top science and technology clusters, with Bengaluru, Mumbai, and New Delhi featuring among the top 100 global clusters.
- It continues to be the most innovative economy in central and southern Asia (a distinction held since 2011).

**Global Performance**

- Switzerland tops the GII index followed by Sweden, United States of America, Netherlands, United Kingdom, Finland, Denmark, Singapore, Germany and Israel. While Yemen secured the last rank.
- China scored the rank 17th rank this year, which is an upgrade from the previous 44th rank in 2017.

The overall GII score is the simple average of the Input and Output Sub-Index scores:

The Innovation Input Sub-Index is comprised of five input pillars that capture elements of the national economy that enable innovative activities: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication.

The Innovation Output Sub-Index provides information about outputs that are the results of innovative activities within the economy.

There are two output pillars: (6) Knowledge and technology outputs and (7) Creative outputs.

The Innovation Efficiency Ratio is the ratio of the Output Sub-Index score over the Input Sub-Index score. It shows how much innovation output a given country is getting for its inputs.

**‘STRENGTH OF SUPREME COURT JUDGES’**
Context

Cabinet has approved increasing strength of Supreme Court judges from 31 to 34. It will require amendments in Supreme Court (Number of Judges) Act.

Need of amendment

- Lots of cases are pending in the Supreme Court.
- More judges needed to run court more efficiently and effectively.
- To keep pace with the rate of institution by expediting disposal of cases.
- 5-judge Constitution benches for substantial questions of law as to the interpretation of the Constitution were not being formed due to paucity of judges.

Constitutional Provisions

The Supreme Court of India was inaugurated on January 28, 1950. It succeeded the Federal Court of India, established under the Government of India Act of 1935.

Organisation of Supreme Court

- Originally the Supreme Court (Number of Judges) Act, 1956 provided for a maximum of 10 judges (excluding the CJI).
- The Parliament then increased this number progressively to 13 in 1960, 17 in 1977 and 26 in 1988.
- Supreme Court (Number of Judges) Amendment Act, 2009 further augmented the strength of the court to 31, including the CJI, which is the current strength.

Appointment of Judges

The Chief Justice of India and the Judges of the Supreme Court are appointed by the President under Article 124 of the Constitution.

- The judges of the Supreme Court are appointed by the president.
- The chief justice is appointed by the president after consultation with such judges of the Supreme Court and high courts as he deems necessary.
- The other judges are appointed by president after consultation with the chief justice and such other judges of the Supreme Court and the high courts as he deems necessary.

Qualifications of Judges

A person to be appointed as a judge of the Supreme Court should have the following qualifications:

1. He should be a citizen of India.
2. (a) He should have been a judge of a High Court (or high courts in succession) for 5 years; or (b) He should have been an advocate of a High Court (or High Courts in succession) for 10 years; or (c) He should be a distinguished jurist in the opinion of the president.

ZERO BUDGET NATURAL FARMING (ZBNF)

Context

In the recent Union Budget of 2019, ZBNF model has been emphasised, which can help in doubling farmers’ income. Andhra Pradesh and Himachal Pradesh have been shifted towards this model.

About

What is ZBNF?

- It is a method of chemical-free agriculture drawing from traditional Indian practices.
- Using cow dung, urine based formulations and botanical extracts would help farmers in reducing the input cost.
- Intercropping with leguminous crops is one of the components of ZBNF and it improves the crop productivity and soil fertility by way of fixing the atmospheric nitrogen.
- It promotes soil aeration, minimal watering, intercropping, bunds and topsoil mulching and discourages intensive irrigation and deep ploughing.

Background

- It was developed by Subhash Palekar from Maharashtra in the mid-1990s as an alternative to the Green Revolution’s methods, which led to indebtedness and suicide among farmers due to rising cost on external inputs in agriculture.
- During this revolution, impact of chemicals on the environment and on long-term fertility was also very devastating.
- ZBNF would break the debt cycle for many small farmers.

Components of ZBNF

- Jeevamrutha: It is a fermented microbial culture that uses urine and dung from an indigenous cow breed and paste of green gram to rejuvenate the soil to provide micro-nutrients to crops.
Bijamrita: It is a treatment used for seeds, seedlings or any planting material.

Acchadana: It promotes mulching and soil aeration for favourable soil conditions.

Whapasa: It provides moisture to the soil.

Why does it matter?

According to National Sample Survey Office (NSSO) data, almost 70% of agricultural households spend more than they earn and more than half of all farmers are in debt.

In States such as Andhra Pradesh and Telangana, levels of indebtedness are around 90%, where each household bears an average debt of Rs. 1 lakh.

Role of Indian States

ZBNF was adopted by Karnataka as a movement by Karnataka Rajya Raitha Sangha.

Andhra Pradesh became India’s first State to practise 100% natural farming by 2024. It aims to phase out chemical farming over 80 lakh hectares of land, converting the State’s 60 lakh farmers to ZBNF methods.

Himachal Pradesh, Chhattisgarh, Kerala, Karnataka and Uttarakhand are also planning to adopt ZBNF.

Budget Allocation

Norms to promote organic farming and soil health: Government has revised the norms for the Rashtriya Krishi Vikas Yojana and the Paramparagat Krishi Vikas Yojana, which has an allocation of ?3,745 crore and ?325 crore respectively this year.

Role of state: Centre allow States to use their funds to promote the ZBNF, vedic farming, natural farming, cow farming and a host of other traditional methods.

Way Forward

Multi-location studies are needed to scientifically validate the long-term impact and viability of the model before it can be scaled up and promoted country-wide.

An enabling institutional mechanism could be set up to promote the technology.

There is a need to enhance public funding support.

‘PROTECTION OF CHILDREN FROM SEXUAL OFFENCES (AMENDMENT) BILL, 2019’
Context

Parliament passed Protection of Children from Sexual Offences (Amendment) Bill, 2019 to protect children from offences such as sexual assault, sexual harassment, and pornography. The salient features and the recent amendments are as follows:

- **Penetrative sexual assault:** It defines “penetrative sexual assault” act as penetrating penis into vagina, mouth, urethra, anus of child or making a child to do the same and several other such acts. The punishment earlier was imprisonment between seven years to life, and a fine.

- The Bill increases the minimum punishment from 7 years to 10 years.

- It further adds that if a person commits penetrative sexual assault on a child below the age of 16 years, he will be punishable with imprisonment between 20 years to life, with a fine.

- **Aggravated penetrative sexual assault:** It defines certain actions as “aggravated penetrative sexual assault” like cases when a public servant or relative commits penetrative sexual assault on a child. Or if the child becomes pregnant.

  The Bill adds two more grounds to the definition of aggravated penetrative sexual assault.

  - Assault resulting in death of child, and
  - Assault committed during a natural calamity, or in any similar situations of violence.

  The Bill increases the minimum punishment from ten years to 20 years, and the maximum punishment to death penalty.

- **Aggravated sexual assault:** It defines actions like touching vagina, penis, anus etc. without penetration which injures sexual organs or done by the relative of the child.

  The Bill adds two more offences to the definition of aggravated sexual assault.

  - Assault committed during a natural calamity
  - Administrating or help in administering any hormone or any chemical substance, to a child for the purpose of attaining early sexual maturity.

- **Pornographic purposes:** The Bill defines child pornography as any visual depiction of sexually explicit conduct involving a child including photograph, video, digital or computer generated image indistinguishable from an actual child. The Bill enhances the punishments for offences under this provision.
Storage of pornographic material: The Act penalises storage of pornographic material for commercial purposes with a punishment of up to three years, or a fine, or both.

The Bill amends this to provide that the punishment can be imprisonment between three to five years, or a fine, or both.

In addition, the Bill adds two other offences for storage of pornographic material involving children.
- Failing to destroy, or delete, or report pornographic material involving a child
- Transmitting, displaying, distributing such material except for the purpose of reporting it

These are welcome amendments and will ensure child safety and protection from sexual assault.

MISSION SHAKTI OF MAHARASHTRA GOVERNMENT

Context

Bollywood actor Aamir Khan will be part of Maharashtra Government's Mission Shakti' initiative to groom sportspersons with medal-winning potential for the upcoming 2024 Paris Olympics.

About

Mission Shakti
- Under this mission, the government is focusing on six sports— weight lifting, archery, shooting, swimming, athletics, volleyball and gymnastics.
- The students will be provided training of international level in the related sports type.
- The required financial help will be sought from the corporate sector.

Significance

Youth from remote and rural areas like Chandrapur and Gadchiroli will get a chance to bring laurels to India in events like the Olympics in future.

Other initiatives by the name of Mission Shakti
1. On March 27, 2019 India conducted Mission Shakti, an anti-satellite missile test. This was a technological mission carried out by DRDO. The test required an extremely high degree of precision and technical capability.

2. Mission Shakti of Odisha Government aims to provide interest-free loan up to Rs 3 lakh for the women self-help group members. It will benefit around 70 lakh women associated with six lakh groups.

JAI BHIM MUKHYAMANTRI PRATIBHA VIKAS YOJANA

Context

Delhi SC/ST Welfare Minister chaired a meeting with around 15 heads private coaching institutes to include more such institutes in an existing free coaching programme for SC students.

About

Jai Bhim Mukhyamantri Pratibha Vikas Yojana

- It was launched by the Delhi Government in 2018 to provide quality coaching for economically disadvantaged Scheduled Castes (SCs) candidates to enable them to compete in Competitive examination and succeed in obtaining an appropriate job in Public/ Private sector.
- The scheme will be implemented through the reputed institutions/centers run by the registered private institutions /NGOS.
- Only students belonging to SCs residing in Delhi & who have passed 10th and 12th class (or studying in class XII) from the schools in Delhi, having total family income of not more than Rs.6.00 lakh per annum will be eligible under the scheme.
- The ratio of students who have completed their studies from Govt. and Private Schools to be coached under the Scheme will be 75:25.
- Under the scheme, the government currently pays a maximum of Rs. 40,000 to selected eight institutes for the coaching of each student. Apart from it, a monthly stipend of Rs. 2,500 is given to each student. Now, the amount will be increased from Rs. 40,000 to Rs. 1,50,000 and the duration of the coaching will also be extended.

Outcome

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Of the 107 students who got free coaching for engineering and medical entrance exams under the Jai Bhim Mukhyamantri Pratibha Vikas Yojana, 13 have been declared successful in the JEE Main and 22 in the National Eligibility-cum-Entrance Test (NEET).

UN CONVENTION ON INTERNATIONAL SETTLEMENT AGREEMENTS RESULTING

Context
The Union Cabinet had approved the signing of the UN Convention on International Settlement Agreements resulting from mediation by India.

About
UN Convention on International Settlement Agreements
- It is also known as the “Singapore Convention on Mediation”.
- It provides an efficient and harmonized framework for cross-border enforcement of settlement agreements.
- It ensures that a settlement reached by parties becomes binding and enforceable in accordance with a simplified and streamlined procedure.
- It is an essential instrument in the facilitation of international trade and in the promotion of mediation as an alternative and effective method of resolving trade disputes.

India’s Other Initiatives to promote Mediation
- The Government is in the process of establishing the New Delhi International Arbitration Centre (NDIAC) as a statutory body.
- Commercial Courts Act, 2015 has been amended and amendment to the Arbitration and Conciliation Act, 1996, is currently underway.

ECONOMIC CENSUS

Context

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Puducherry launched its seventh Economic Census.

**About**

- **Economic census** is the complete count of all establishments engaged in non-agricultural economic activities located within the geographical boundary of India.
- The economic census provides **disaggregated information** on various operational and structural variables of all establishments of the country.
- One of the main aims of the Economic Census is preparation of a **National Business Register** which can be linked with existing databases at the central and state government levels.
- The seventh census would witness the use of **Information Technology** for data collection.
- **Ministry of Statistics and Programme Implementation** carries out economic census every five years. The ministry has partnered with **CSC e-Governance Services India Limited**, a Special Purpose Vehicle under the **Ministry of Electronics and Information**.

**ANTIMICROBIAL RESISTANCE (AMR)**

**Context**

- Madhya Pradesh has become the second state after Kerala to develop an action plan to manage antimicrobial resistance (AMR).
- The government will carry out state-level AMR surveillance across all sectors including human health, animal husbandry, fisheries, environment, and food.
- The move will encourage other states to develop their own plans, which in turn, will help in tackling AMR on the national level.

**About**

- The World Health Organisation (WHO) defines AMR as “the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarial) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others.”
One of the sources of antibiotic resistance development is the presence of antibiotics in the environment, which generates foci of resistant bacteria through bacterial exposure to antibiotics.

Causes of AMR:
- Misuse of antibiotics in humans, animals, aquaculture, hospital effluents and antibiotic use in livestock and poultry contributes to AMR.
- Poor management of waste from farms, factories, healthcare settings and households adds to this problem.

Problems due to AMR:
- Antimicrobial resistance, for which Madhya Pradesh now has a plan, is a global environment and public health threat according to the WHO.
- The vast scale and diversity of the country in terms of population, food animal sectors (for instance, commercial and backyard farming), extent of antibiotic use adds to the challenges of addressing this multi-sectoral issue.

Impact of increasing AMR:
- With rising AMR, antibiotics are increasingly becoming ineffective for treating diseases in humans.
- If there is no timely containment, AMR is likely to cause nearly 10 million deaths by 2050 and result in significant global economic losses.
- It would impact nutrition security, livelihood and hinder the attainment of the Sustainable Development Goals.

Methods of controlling the spread of AMR:
- Tracking antibiotic use in humans, animals, fisheries, crops.
- Ensuring effective infection prevention and control in human and animal health, community and environment.
- Optimised use of antimicrobial agents in the health, animal and food sectors.
- Promoting investments for AMR activities, research and innovations for AMR containment.

ASAT MISSILE

Context
Mission Shakti initiated for successful anti-satellite (ASAT) missile test

About

About the missile

- Anti-satellite weapons (ASAT) are space weapons designed to incapacitate or destroy satellites for strategic military purposes.

- No ASAT system has yet been utilised in warfare, a few nations have shot down their own satellites to demonstrate their ASAT capabilities in a show of force.

- India conducted Mission Shakti, an anti-satellite missile test, from the Dr. A P J Abdul Kalam Island launch complex. This was a technological mission carried out by DRDO.

- The significance of the test is that India has tested and successfully demonstrated its capability to interdict and intercept a satellite in outer space based on complete indigenous technology.

- With this test, the country joins an exclusive group of space faring nations consisting of USA, Russia, and China.

- The test was done in the lower atmosphere to ensure that there is no space debris. Whatever debris that is generated will decay and fall back onto the earth within weeks.

- The test is not directed against any country. India’s space capabilities do not threaten any country and nor are they directed against anyone.

**BRAHMOS CRUISE MISSILES**

Context

Thailand in talks with India to buy BrahMos cruise missiles.

About

- In possibly the first sale of BrahMos supersonic cruise missiles to another country, Thailand.
As part of the expanding defence cooperation between the two countries, Thailand has made a request for repair and refurbishing their Dornier maritime patrol aircraft.

Discussions are on to integrate Thailand into India’s coastal surveillance radar chain network.

The inaugural India, Thailand and Singapore trilateral naval exercise announced at Shangri-La dialogue is scheduled to be held later this year.

The two navies already conduct a Coordinated Patrol (CORPAT) and a new bilateral exercise is also in the works apart from the trilateral.

As members of the Indian Ocean rim association (IORA) and Indian Ocean Naval symposium (IONS), navies of India and Thailand are working closely in the areas of disaster risk management, maritime security safety, information sharing and interoperability.

**About BrahMos cruise missiles.**

The BrahMos is a medium-range ramjet supersonic cruise missile that can be launched from submarine, ships, aircraft, or land.

It is the fastest supersonic cruise missile in the world.

It is a joint venture between the Russian Federation's NPO Mashinostroeyenia and India's Defence Research and Development Organisation (DRDO) who together have formed BrahMos Aerospace.

It is based on the Russian P-800 Oniks cruise missile and other similar sea-skimming Russian cruise missile technology.

The name BrahMos is a portmanteau formed from the names of two rivers, the Brahmaputra of India and the Moskva of Russia.

It is the world's fastest anti-ship cruise missile in operation.

‘SOIL HEALTH CARD’

Context

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Evaluation of Soil Health Card Scheme has revealed significant reduction in usage of area in Kolhapur district of Maharashtra.

Soil Health Card Scheme

- Soil Health Card Scheme was launched in 2015 to issue ‘Soil card’ to farmers which will carry crop-wise recommendations of nutrients and fertilizers required for the individual farms.
- This is aimed to help farmers to improve productivity through judicious use of inputs.
- It is promoted by the Department of Agriculture & Co-operation under the Ministry of Agriculture and Farmers' Welfare.
- It is being implemented through the Department of Agriculture of all the State and Union Territory Governments
- It is made available once in a cycle of 3 years, which indicates the status of soil health of a farmer’s holding for that particular period.

The unique features of SHC scheme are:-

- Collecting soil samples at a grid of 2.5 ha in irrigated area and 10 ha in un-irrigated areas.
- GPS enabled soil sampling to create a systematic database and allow monitoring of changes in the soil health over the years.
- Uniform approach in soil testing adopted for 12 parameters viz. primary nutrients (NPK); secondary nutrient (S); micronutrients (B, Zn, Mn, Fe & Cu); and other (pH, EC & OC) for comprehensiveness.
- It also provides crop wise fertiliser recommendations.
- It would also lead to crop diversification in the country.

Government interventions to promote Soil Health Card

- Extension activities like farmers training, demonstration on farmer’s field, farmer’s mela/camps, promotion of micronutrients and workshops are organized by State Governments.
- To enable quick soil sample testing and distribution of soil health cards, the soil test infrastructure has been upgraded and soil testing labs have been sanctioned to States.
‘ONE NATION ONE RATION CARD SCHEME’

Context

One nation one ration card scheme was launched on a pilot basis in four states - Gujarat, Maharashtra, Telangana and Andhra Pradesh.

‘One Nation One Ration Card’ scheme

- It will be available across the country from July 1, 2020.
- The main objective is to introduce nation-wide portability of ration card holders under National Food Security Act, 2013 (NFSA)
- It will allow portability of food security benefits to lift their entitlement food grains from any Fair Price Shop in the country
- This means poor migrant workers will be able to buy subsidised rice and wheat from any ration shop in the country, so long as their ration cards are linked to Aadhaar.
- It would integrate the existing PDS systems/portals of States/UTs with the Central systems/portals.

National Food Security Act, 2013 (NFSA)

The National Food Security Act, 2013 was enacted to provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity.

- It provides for coverage of up to 75% of the rural population and up to 50% of the urban population for receiving subsidized food grains under Targeted Public Distribution System (TPDS).
- The eligible persons will be entitled to receive 5 kgs of food grains per person per month at subsidized prices of Rs. 3/2/1 per Kg for rice/wheat/coarse grains.
- To ensure the food security of poorest of poor, the existing Antyodaya Anna Yojana (AAY) households will continue to receive 35 Kgs of foodgrains per household per month.
- Pregnant women and lactating mothers are entitled to a nutritious “take home ration” of 600 Calories, 18-20 grams of protein and a maternity benefit of at least Rs 6,000 for six months.
• The eldest women of the household of age 18 years or above will be the head of the household for the purpose of issuing ration cards.

• Children 6 months to 14 years of age are to receive free hot meals or "take home rations".

• States are the implementing agencies and the Central Government will be responsible to provide funds to states in case of short supplies of food grains.

**Universal Public Distribution System (PDS)**

Universal Public Distribution System (PDS) was introduced in India in 1965 to improve the health conditions and provide food grains to common people at affordable prices. It served the aim of

• Maintaining stability in the prices of essential commodities across regions

• Keeping a check on private trade, hoarding and black-marketing.

**Targeted PDS (TPDS)**

• The PDS was converted into Targeted PDS (TPDS) in 1997

• It classified population into Above Poverty Line (APL) and Below Poverty Line (BPL)

• Only those households classified as BPL were made eligible for subsidized purchase of commodities from the ration shops.

But the poorest of poor, Antyodaya Anna Yojana (AAY) households will continue to receive 35 Kgs of foodgrains per household per month.

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‘MOTOR VEHICLES (AMENDMENT) BILL 2019’

**Context**

Parliament has passed the Motor Vehicles (Amendment) Bill 2019 to make Indian roads safer.

**Need of amendment**

• Motor Vehicles Act, 1988 was unable to meet the needs of rising travel demand, fast-paced motorisation, major shifts in technology and deteriorating road safety.

• Last mile connectivity and accessibility for rising population is an issue.

• Rural transport needed a significant reform.

• Rising road accidents and related deaths without any
Rising corruption in the transport office.

Rising cab aggregators without any proper guidelines.

Motor Vehicles (Amendment) Bill 2019

The Bill has amended the Motor Vehicles Act, 1988 to provide for road safety.

Salient features of the Act are:

• Road safety: The bill has increased penalties for traffic violations and offences like juvenile driving, drunken driving, driving without licence, dangerous driving, over-speeding, overloading etc. Penalty to be increased by 10% every year.

• Vehicle Fitness: The Bill has mandated automated fitness testing to reduce corruption for vehicles and introduced penalty for deliberate violation of safety/environmental regulations.

• Recall of vehicles: Defective vehicles will be compulsorily recalled. The manufacturer will either will reimburse for full cost or replace the defective vehicle.

• Road Safety Board: A National Road Safety Board will be created to advise the central and state governments on all aspects of road safety and traffic management.

• Protection of Good Samaritan: The bill defines ‘Good Samaritan’ is defined as a person who renders emergency medical or non-medical assistance to road accident victims. Guidelines have been incorporated to prevent their

• Cashless Treatment during Golden Hour e. the time period of up to one hour following a traumatic injury, during which the likelihood of preventing death through prompt medical care is the highest.

• Compulsory insurance: Motor Vehicle Accident Fund to be constituted to provide compulsory insurance cover to all road users in India.

• The bill also tackle issues like regulation of taxi aggregators, third party insurance and development of a National Transportation Policy and improving Services using digitalisation and e-Governance.

• The vehicle owner or the guardian will be held in case of traffic violations by Aadhar has been made mandatory for getting a driving licence and vehicle registration.

Way forward

• Centre must present its National Transport Policy without delay.

• States must be incentivised and use modern management practices to provide clean, comfortable and affordable services for all users, including people with disabilities.
Effective implementation is required as zero tolerance enforcement of even small fines reduces violations, while stringent penalties are either not enforced or lead to more bribery.

INDUS VALLEY INSCRIPTIONS

Context

- A research paper published recently in Palgrave Communications, a Nature group journal claims that majority of the Indus Valley inscriptions were written logographically (by using word signs) and not by using phonograms (speech sounds units).
- Another paper, titled “Interrogating Indus inscription to unravel their mechanism of meaning conveyance”, published recently points out that the inscriptions can be compared to the structured messages found on stamps, coupons, tokens and currency coins of modern times.

About

- Indus Valley inscriptions are discovered from 4,000 ancient inscribed objects, including seals, tablets, ivory rods, pottery shards, etc.
- These Indus inscriptions are one of the most enigmatic legacies of the Indus Valley civilization but these have not been deciphered due to the absence of bilingual texts, extreme brevity of the inscriptions, and ignorance about the language(s) encoded by Indus script.

Findings of the paper:

- The paper focuses on understanding how Indus inscriptions conveyed meanings, rather than on deciphering what they conveyed.
- Analysing the brevity of the inscriptions, the rigid positional preferences maintained by the signs of the inscriptions, and the co-occurrence of restriction patterns demonstrated by certain classes of Indus signs, it was inferred that such patterns can never be phonological co-occurrence restrictions (two or more sound units that cannot be pronounced together).
- A very compelling, nearly unassailable proof of the logographic nature of Indus inscriptions comes from the co-occurrence restriction patterns maintained within them.
- It classifies all the signs into nine functional classes.
• The inscribed seals and tablets were used in some administrative operation that controlled the commercial transactions prevalent in the trade-savvy settlements of the ancient Indus valley Civilisation.

• The inscriptions can be compared to the messages found on stamps, coupons, tokens and currency coins of modern times, where we expect formulaic texts that encode certain type of information in some pre-defined ways, rather than freely composed narrative.

• A common perception among some scholars is that the Indus script is logo-syllabic, where one symbol can be used as a word sign at one time and as a syllable-sign at another. This method, where a word-symbol also gets sometimes used only for its sound value, is called the rebus principle. For example, we can combine the pictures of a honey bee and a leaf to signify the word “belief” (bee+leaf).

• The paper states that, though many ancient scripts use rebus methods to generate new words, the inscriptions found on the Indus seals and tablets have not used rebus as the mechanism to convey meaning.

CRYPTO CURRENCIES

Issue

Context
Recently, a government panel headed by senior bureaucrat Subhash Chandra Garg placed in the public domain a draft bill calling for a complete ban on private crypto currencies in India.

About
• The panel recommended a fine of up to ₹25 crore and a jail term of up to 10 years for anyone found to be owning or handling private crypto currencies.

• As an alternative to private crypto currencies, the panel recommended the introduction of a single crypto currency for the whole country that is backed by the Reserve Bank of India.

• Volatility doesn’t sound like a good rationale to ban crypto currencies because if crypto currencies are volatile, so are many other asset classes.
Also, banning the consumption of a good or service doesn’t really mean that people will stop consuming it.

**What is Crypto Currency and general information?**

- A crypto currency is a digital asset designed to work as a medium of exchange that uses strong cryptography to secure financial transactions, control the creation of additional units, and verify the transfer of assets.

- A crypto currency is a digital or virtual currency that uses cryptography for security.

- A crypto currency is difficult to counterfeit because of this security feature.

- Many crypto currencies are decentralized systems based on block chain technology, a distributed ledger enforced by a disparate network of computers.

- The first block chain-based crypto currency was Bit coin, which still remains the most popular and most valuable.

**Advantages of Using Crypto currency**

- **Easy access and globally recognized:** Crypto currency is readily accessible to all its intended users. It can be used by whoever it wants. It is a decentralized system of currency which can be used and accessed globally. In the case of Fiat currency the value of Euro, Dollar or yen may go up or down, but in the case of crypto currency, the market remains worldwide the same.

- **Quick and easy payments:** It is a quick transaction process. It takes hardly a few minutes to initiate a transaction. You have no obligation to disclose and share your personal details unless the details of your crypto wallet. Only the payer and the receiver will get to know about the payment and transaction and that is completely secured. The simplicity and advantage of anonymous dealings are one of the advantages that are making crypto currency popular.

- **Facility of faster settlement:** Unlike RTGS or NEFT payment method, you need not wait for getting your payment processing if you are doing your transaction using crypto currency. Being based on Block chain, crypto currency works in the peer-to-peer algorithm and the payment settlement gets completed flawlessly almost immediately.
Private and secured: Cybercrime has become a global threat and doing online financial transaction has become extremely irksome due to the risk of identity theft, phishing, unwanted tracking of the regulatory body, non-transparency in the online payment system, etc.

Facilitate e-commerce trade: It is a global currency and there is no restriction of using or paying by this global currency, which is easier and convenient for business and shopping portals. If the ultimate aim of an e-commerce portal is to business, crypto currency transaction can simply facilitate that. If e-commerce is the ultimate of global business, crypto currency can be the global currency for facilitating the business worldwide.

Free from the risk of identity theft: Identity theft is one of the biggest risks of the online transaction but with block chain integration in crypto currency, the risk of identity theft is not prevalent at all. While doing payment by using crypto currency you can keep your personal information secret, and that is the reason, the risk of identity theft gets completely minimized here.

Disadvantages of Using Crypto currency

It can be difficult to understand: Crypto currency is a new age currency and based on quite complicated block chain technology. It has lots of tweaks and twists in its learning curve. Without understanding the nitty-gritty of crypto currency, it is unsafe to deal with it.

Uncertainty and volatility: The market for crypto currency is quite volatile hence it is unpredictable. It can be risky to invest in crypto currency without understanding its risk factors. Because of its volatile market, a group of people still feel uncertain about dealing with this digital currency.

Still not accepted by all: Although crypto currency is a global concept and people have gained adequate knowledge about it, it is not accepted still by all. Some countries in the world have not legalized the use of crypto currency, and that is the reason, buying and selling via crypto currency is still some uncertain.

No way to reverse the payment: Unlike check stop payment or request for cancellation of NEFT, it is next to impossible to stop the transaction of crypto currency once it is done. This irrevocable nature of payments may create a problem in business dealings, which cannot be countered.
Losing wallet: If a user forgets his crypto wallet password, it is not possible to revive the lost data because of tight security encrypted block chain integration, which can be disastrous for its users.

Problem of scaling: The crypto currency transaction speed can be limited due to the smart contract design. However, only by proven design, this problem of scaling can be solved, and it is expected also that in near-future crypto currency programmer will be able to sort out this scaling issue.

These are all about the advantages and disadvantages of crypto currency. However, as this digital currency is being counted as one of the on uses of near future’s fiscal transactions, it is extremely important to know its pros and cons. As the knowledge about advantages will help you to utilize its best leverages, the knowledge of disadvantages will help you to stay away from the pitfalls.
About the Author

Rajendra Prasad has completed his graduate degree in engineering from University of Rajasthan with higher grades. He is well known person in the field of both online and offline education, also cleared many PSU and government sector exams and provide free education to aspirants who are preparing for UPSC, RPSC and other competitive exams through his online study portal.
He has served government of Rajasthan for five years on a prestigious position.