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**IMPORTANT CURRENT AFFAIRS**

**FOR PRELIMS VOL - 44**

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**INDIAN POLITY AND GOVERNANCE****1) PM GATI SHAKTI SCHEME**

**IN NEWS:** - The government of India has launched the ambitious Gati Shakti scheme or National Master Plan for multi-modal connectivity plan, with the aim of coordinated planning and execution of infrastructure projects to bring down logistics costs.

**ABOUT PM GATI SHAKTI SCHEME**

- The aim of the scheme is to ensure integrated planning and implementation of infrastructure projects in the next four years, with focus on expediting works on the ground, saving costs and creating jobs.
- The Gati Shakti scheme will subsume the Rs 110 lakh crore National Infrastructure Pipeline that was launched in 2019.
- Besides cutting logistics costs, the scheme is also aimed at increasing cargo handling capacity and reducing the turnaround time at ports to boost trade.
- It also aims to have 11 industrial corridors and two new defence corridors - one in Tamil Nadu and other in Uttar Pradesh. Extending 4G connectivity to all villages is another aim. Adding 17,000 kms to the gas pipeline network is being planned.
- It will help in fulfilling the ambitious targets set by the government for 2024-25, including expanding the length of the national highway network to 2 lakh kms, creation of more than 200 new airports, heliports and water aerodromes.
- It intends to bring together 16 infrastructure related Ministries.
- This will help in removing long-standing issues such as disjointed planning, lack of standardisation, problems with clearances, and timely creation and utilisation of infrastructure capacities.

- **Gati Shakti Digital Platform:** It involves the creation of a common umbrella platform through which infrastructure projects can be planned and implemented in an efficacious manner by way of coordination between various ministries/departments on a real-time basis.
- The scheme will help mapping the existing and proposed connectivity projects.
- Also, there will be immense clarity on how different regions and industrial hubs in the country are linked, particularly for last mile connectivity.
- A holistic and integrated transport connectivity strategy will greatly support Make in India and integrate different modes of transport.
- It will help India become the business capital of the world.
- The scheme is in synergy with the National Monetisation Pipeline (NMP).
- The NMP has been announced to provide a clear framework for monetisation and give potential investors a ready list of assets to generate investment interest.

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## 2) RASHTRIYA GRAM SWARAJ ABHIYAN

**IN NEWS:-** The Cabinet Committee on Economic Affairs has approved continuation of the revamped Centrally Sponsored Scheme of Rashtriya Gram Swaraj Abhiyan (RGSA) for implementation during the period from 1st April 2022 to 31st March 2026 .

### ABOUT RASHTRIYA GRAM SWARAJ ABHIYAN

- The scheme is now co-terminus with the 15th Finance Commission period.
- The scheme is aimed to develop governance capabilities of Panchayati Raj Institutions (PRIs).
- The scheme was first approved by the Cabinet in 2018 for implementation from 2018-19 to 2021-22.

- Implementing Agency: Ministry of Panchayati Raj.
- The main Central Components were Incentivisation of Panchayats and Mission Mode Project on e-Panchayat including other activities at Central level.
- The State component primarily includes Capacity Building & Training (CB&T) activities, institutional mechanisms for CB&T along with other activities at a limited scale.
- Objectives: It envisaged developing governance capabilities of Panchayati Raj Institutions (PRIs) to deliver on the Sustainable Development Goals (SDGs).
- Priority will be given to subjects of national importance principally under themes, namely:
  - Poverty free and enhanced livelihood in villages
  - Healthy Village
  - Child Friendly Village
  - Water Sufficient Village
  - Clean and Green Village
  - Self-Sufficient Infrastructure in Village
  - Socially Secured Village
  - Village with Good Governance
  - Engendered Development in Village.
- Funding Pattern: The revamped RGSA will comprise Central and State components. The Central Components of the scheme will be fully funded by the Government of India.
- The funding pattern for State Components will be in the ratio of 60:40 among Centre and States respectively, except NE, Hilly States and Union Territory (UT) of J&K where Central and State share will be 90:10.

- However, for other UTs, Central share will be 100%.
- It is an effort in the direction of achieving “Sabka Sath, Sabka Gaon, Sabka Vikas”.

### 3) SEEMA DARSHAN PROJECT

**IN NEWS:-** The Gujarat State Tourism Department and the Border Security Force (BSF) Gujarat Frontier have jointly launched the 'Seema Darshan Project' at Nadabet on the Indo-Pak border in Banaskantha district of Gujarat.

#### ABOUT SEEMA DARSHAN PROJECT

- This will provide an opportunity to observe the life and work of BSF personnel. Tourists can also see missiles, tanks, aircraft, etc. used by the Indian Army and BSF in Nadabet. The centre of most attraction is the 'Zero Point' which is the international border with Pakistan.
- Nadabet is being developed as a tourist spot on the pattern of 'Wagah Border' with a cost of Rs.125 crore, hence it is also being called 'Wagah of Gujarat'. It is noteworthy that Nadabet played an important role in the Indo-Pakistani War of 1971.
- Under this, Focus has been given to develop border tourism in areas with sparse population and vegetation, which will increase tourism opportunities, generate employment and prevent cross-border migration to India.

### 4) UDAN SCHEME

**IN NEWS:** - The UDAN (UdeDeshkaAamNagrik) Scheme has been selected for Prime Minister's Award for Excellence in Public Administration 2020 under the category “Innovation (General) – Central”.

**ABOUT UDAN SCHEME**

- It was launched as a RCS under the Ministry of Civil Aviation in 2016.
- Objectives:
  - To develop the regional aviation market.
  - To provide affordable, economically viable and profitable air travel on regional routes to the common man even in small towns.
- The scheme envisages providing connectivity to un-served and underserved airports of the country through the revival of existing air-strips and airports. The scheme is operational for a period of 10 years.
- Under-served airports are those which do not have more than one flight a day, while unserved airports are those where there are no operations.
- Financial incentives from the Centre, state governments and airport operators are extended to selected airlines to encourage operations from unserved and under-served airports, and keep airfares affordable.

**5) PM- DAKSH SCHEME**

**IN NEWS:-** The Ministry of Social Justice and Empowerment has launched 'PM-DAKSH' (Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi) Portal and 'PM-DAKSH' Mobile App to make the skill development schemes accessible to the target groups - Backward Classes, Scheduled Castes and Safai Karamcharis.

**ABOUT PM- DAKSH SCHEME**

- PM-DAKSH Yojana is being implemented from the year 2020-21.
- Under this, eligible target groups are provided with the skill development training programmes on Short Term Training Program; Up-Skilling/Reskilling; Entrepreneurship Development Programme, and Long Term Training Programme.

- These training programmes are being implemented through the government training institutes, sector skill councils that have been constituted by the Ministry of Skill Development and Entrepreneurship, and other credible institutions.
- Eligibility: Marginalized persons of SC (Scheduled Caste), OBC (Other Backward Classes), Economically Backward Classes, Denotified tribes, Sanitation workers including waste pickers, manual scavengers, transgenders and other similar categories.
- It is implemented by the three Corporations under the Ministry:
  - National Scheduled Castes Finance and Development Corporation (NSFDC),
  - National Backward Classes Finance & Development Corporation (NBCFDC),
  - National Safai Karamcharis Finance and Development Corporation (NSKFDC).

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## 6) e- BCAS PROJECT

**IN NEWS:** - In order to facilitate e-governance and automation of internal processes, the Ministry of Civil Aviation is mulling over the implementation of the 'e-BCAS Project'.

### ABOUT e- BCAS PROJECT

- Bureau of Civil Aviation Security, BCAS has undertaken e-BCAS, an initiative under e-Governance for automation of internal processes. This will be an online platform for the facilitation of stakeholders.
- It will leverage the strength of existing processes and organizational structure, with the objective to make entire activities transparent, user-friendly, and efficient.



- It will digitize the office processes, facilitate fast approvals, and ensure ease of doing business, by technological integration across various divisions and processes.

## 7) MISSION VATSALYA

**IN NEWS:** - The Ministry of Women and Child Development has sent its draft guidelines for Mission Vatsalya Scheme to States and Union Territories to seek their suggestions.

### ABOUT MISSION VATSALYA

- Mission Vatsalya is one of the new triad of schemes along with Mission Shakti, and Poshan 2.0, that aims at securing a healthy and happy childhood for every child.
- It focuses on Child Protection Services and child welfare services.
- It is essentially a renamed version of the pre-existing scheme called Child Protection Services.
- Objectives of the Mission:
  - To secure a healthy and happy childhood for every child in India.
  - To foster a sensitive, supportive and synchronized ecosystem for the development of children.
  - To assist States/UTs in delivering the mandate of the Juvenile Justice Act 2015.
  - To achieve the SDG goals.
- It will include statutory bodies; service delivery structures; institutional care/services; non-institutional community-based care; emergency outreach services (through Childline or the national helpline 1098 for children); training and capacity building.

- Under the mission, the Government plans to partner with the private sector as well as volunteer groups for its scheme for the protection of vulnerable children such as those abandoned or missing.
- For this, a Vatsalya portal will be developed that will allow volunteers to register so that State and District Authorities can engage them in executing various schemes.

### **8) ELECTORAL BONDS**

**IN NEWS:** - The 19<sup>th</sup> tranche of electoral bonds, which have been pitched as an alternative to cash donations, were on sale, ahead of the upcoming Assembly elections in five States.

#### **ABOUT ELECTORAL BONDS**

- These bonds are issued in multiples of Rs. 1,000, Rs. 10,000, Rs. 1 lakh, Rs. 10 lakh and Rs. 1 crore without any maximum limit.
- State Bank of India is authorised to issue and encash these bonds, which are valid for fifteen days from the date of issuance.
- These bonds are only redeemable in the designated account of a registered political party.
- The bonds are available for purchase by any citizen of India for a period of ten days each in the months of January, April, July and October as may be specified by the Central Government.
- A person being an individual can buy bonds, either singly or jointly with other individuals.
- The donor's name is not mentioned on the bond.

## 9) FASTER SCHEME

**IN NEWS:** - Recently, the Supreme court has introduced the “Fast and Secured Transmission of Electronic Records” (FASTER) system.

### ABOUT FASTER SCHEME

- The FASTER (Fast and Secured Transmission of Electronic Records) system proposes transmission of e-authenticated copies of interim orders, stay orders, bail orders and records of proceedings to the duty-holders for compliance and due execution, through a secured electronic communication channel.
- It ensures that Prisoners granted bail will no longer have to wait for the physical copy of the order to reach jails for their release.
- This will ensure the effective implementation of Article 21 (right to life).
- It is high time to utilise information and communication technology tools for efficient transmission of court’s orders.
- Prevent unnecessary arrests and custody of people even after the court had already granted them its protection.

## 10) FUNDAMENTAL DUTIES

**IN NEWS:** - The Supreme Court issued a notice to the Centre and states to respond to a petition to enforce the Fundamental Duties of citizens, including patriotism and unity of the nation, through comprehensive, well-defined laws.

### ABOUT FUNDAMENTAL DUTIES

- Fundamental Duties are specified under Article 51A (Part IVA) of the Constitution, they strive to uphold the country’s ideals and contribute to its growth and betterment.

- The idea of Fundamental Duties is inspired by the Constitution of Russia (erstwhile Soviet Union).
- These were incorporated in Part IV-A of the Constitution by the 42nd Constitutional Amendment Act, 1976 on the recommendations of the Swaran Singh Committee.
- Originally 10 in number, one more duty was added through the 86th Constitutional Amendment Act, 2002.
- Like the Directive Principles of State Policy, the Fundamental duties are also non-justiciable in nature.

### **ENFORCEMENT OF FUNDAMENTAL DUTIES**

- There is a pressing need to enforce and implement at least some of the fundamental duties.
- For instance, to uphold and protect sovereignty, unity and integrity of India, to defend the country and render national service when called upon to do so and to disseminate a sense of nationalism and to promote the spirit of patriotism to uphold the unity of India.
- These fundamental duties assume significance after the emergence of China as a superpower.
- The Verma Committee on Fundamental Duties of the Citizens (1999) identified the existence of legal provisions for the implementation of some of the Fundamental Duties. The committee provided with the provisions like:
- No person can disrespect the National flag, Constitution of India and the National Anthem under the Prevention of Insults to National Honour Act, 1971.
- The Protection of Civil Rights Act (1955) provided for punishments in case of any offence related to caste and religion.

- It was argued in the petition that the non-adherence of the Fundamental Duties has a direct bearing upon the Fundamental Rights guaranteed under Articles 14 ( Equality before Law), 19 (Protection of certain rights regarding freedom of speech) and 21 (Right to Life) of the Constitution of India.
- For example, the need to enforce fundamental duties arises due to the new illegal trend of protest by protestors in the garb of freedom of speech and expression.
- The Supreme Court's Ranganath Mishra judgment 2003 held that fundamental duties should not only be enforced by legal sanctions but also by social sanctions.
- In AIIMS Students Union v. AIIMS 2001, it was held by the Supreme Court that fundamental duties are equally important like fundamental rights.
- Though fundamental duties are not enforceable like fundamental rights they cannot be overlooked as duties in Part IV A.
- They are prefixed by the same word fundamental which was prefixed by the founding fathers of the Constitution to 'right' in Part III.

### 11) DRAFT INDIAN ANTARCTIC BILL

**IN NEWS:** - The government has introduced the 'Antarctic Bill' in the Lok Sabha, which envisages regulating visits and activities to Antarctica as well potential disputes that may arise among those present on the continent.

#### ABOUT DRAFT INDIAN ANTARCTIC BILL

- The Bill is applicable to Indian citizens as well as foreign citizens.
- Provisions under the Bill
  - **Regulate Visiting:** The bill has listed strict guidelines and a system of permits, which will be issued by a government-appointed

- committee, without which any expedition or individual will not be allowed to enter Antarctica.
- The bill has provision to establish a committee on Antarctic governance and environmental protection to monitor, implement and ensure compliance with the relevant international laws, emissions standards and rules of protection.
  - **Protecting Mineral Resources:** The Bill further prohibits drilling, dredging, excavation or collection of mineral resources or even doing anything to identify where such mineral deposits occur.
  - The only exception is for scientific research with a permit.
  - **Protecting Native Plants:** There will be strict prohibition on damaging native plants, flying or landing helicopters or operating vessels that could disturb birds and seals, using firearms that could disturb the birds and animals, remove soil or any biological material native to Antarctica, engage in any activity that could adversely change the habitat of birds and animals, or harm them.
  - **Prohibition on introducing Birds not Native to Antarctica:** Introduction of animals, birds, plants or microscopic organisms that are not native to Antarctica are also prohibited.
  - Violators can face imprisonment as well as penalties.
  - **Provisions for Indian Tour Operators:** The Bill also provides for Indian tour operators to be able to operate in Antarctica after acquiring a permit.
- There are 40 permanent research stations in Antarctica of which two – Maitri and Bharati — are Indian.

## 12) DENOTIFIED TRIBES

**IN NEWS:** - A standing committee of Parliament, in its report, has criticised the functioning of the development programme for de-notified, nomadic and semi-nomadic tribes.

### ABOUT DENOTIFIED TRIBES

- They are communities that were 'notified' as being 'born criminals' during the British regime under a series of laws starting with the Criminal Tribes Act of 1871.
- They are the most vulnerable and deprived.
- The National Commission for De-notified, Nomadic and Semi-Nomadic Tribes (NCDNT) was constituted in 2006. It was headed by Balkrishna Sidram Renke.
- **Scheme for economic empowerment of DNT communities:** It has been formulated to provide coaching, health insurance, facilitate livelihood and financial assistance for construction of homes for the members of DNT.
- The Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic Communities (DWBDNC) has been set up in 2019 under the Societies Registration Act, 1860 under the aegis of Ministry of Social Justice and Empowerment for the purpose of implementing welfare programmes.
- A committee has been set up by the NITI Aayog to complete the process of identification.
- Ethnographic studies of DNCs are being conducted by the Anthropological Survey of India, with a budget of Rs 2.26 crore sanctioned.

### 13) MIDDAY MEAL SCHEME

**IN NEWS:** - From the next academic session, Karnataka is likely to become the 13th state to provide eggs under the midday meal scheme.

#### ABOUT MIDDAY MEAL SCHEME

- Midday meal scheme was renamed PM Poshan Shakti Nirman or PM Poshan in 2021.
- It was launched on August 15 1995 as a centrally sponsored scheme.
- Initially, it was launched for students up to Class 5. In 2007, the UPA government expanded it to Class 8.
- The Scheme comes under the Ministry of HRD.
- The first initiative to provide meals to children had been taken by the erstwhile Madras Municipal Corporation around 1920.
- In post-Independence India, Tamil Nadu was again the pioneer, with Chief Minister K Kamaraj rolling out a school feeding scheme in 1956.
- Kerala had a school lunch scheme run by a humanitarian agency from 1961.
- The state government officially took over the initiative on December 1, 1984, making Kerala the second state in the country to have a school lunch programme.
- It is guaranteed under the provisions of the National Food Security Act, 2013 (NFSA).
- It is also based on the Supreme Court's ruling in People's Union of Civil Liberties vs Union of India and Others (2001).
- Calories requirements: For children in primary grades: at least 450 calories and 12 gm protein. For upper primary children, the requirements are 700 calories and 20 gm protein.



- **Implementation:** Under the rules, the allocation of Rs 4.97 per child per day (primary classes) and Rs 7.45 (upper primary) are shared in 60:40 ratio with states and UTs with a legislature, and 90:10 with the Northeastern states, Jammu and Kashmir, Himachal Pradesh and Uttarakhand, while the Centre bears 100% of the costs in UTs without legislature. But the states and UTs that supplement the meals with additional items such as milk and eggs contribute more. Components such as payments to cooks and workers are also split in the same ratio between the Centre and states.

## INTERNATIONAL RELATIONS

### 14) MES AYNAK SITE

**IN NEWS:-** The Taliban regime in Afghanistan has said it would protect the ancient Buddha statues in Mes Aynak, also the site of a copper mine where the Taliban are hoping for Chinese investment.

### ABOUT MES AYNAK SITE

- Mes Aynak, also called Mis Ainak or Mis-e-Ainak, is a site 40 km southeast of Kabul, Afghanistan, located in a barren region of Logar Province.
- Mes Aynak contains Afghanistan's largest copper deposit, as well as the remains of an ancient settlement with over 400 Buddha statues, stupas and a 40 ha (100 acres) monastery complex.
- The site of Mes Aynak possesses a vast complex of Buddhist monasteries, homes, and market areas.
- The site's orientation on the Silk Road has yielded a mixture of elements from China and India.

**15) SINGAPORE INTERNATIONAL ARBITRATION CENTRE (SIAC)**

**IN NEWS:-** SIAC rules in Amazon's favour, puts Future-Reliance deal on hold. This order came on a plea from global e-commerce giant Amazon

**ABOUT SINGAPORE INTERNATIONAL ARBITRATION CENTRE (SIAC)**

- It is a not-for-profit international arbitration organisation based in Singapore, which administers arbitrations under its own rules of arbitration and the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules.

**India now has its own international arbitration centre in Mumbai**

**SCIENCE AND TECHNOLOGY****16) EXTRA NEUTRAL ALCOHOL**

**IN NEWS:-** Alcohol manufacturers citing a shortage of domestic supplies have sought a reduction in import duty of Extra Neutral Alcohol to make it cost-effective for them to import from global markets.

**ABOUT EXTRA NEUTRAL ALCOHOL**

- It is a byproduct of the sugar industry.
- Formed from molasses that are a residue of sugarcane processing.
- It is the primary raw material for making alcoholic beverages.
- It is colourless food-grade alcohol that does not have any impurities.
- It has a neutral smell and taste and typically contains over 95 per cent alcohol by volume.
- An essential ingredient in the manufacture of cosmetics and personal care products such as perfumes, toiletries, hair spray, etc.

- Utilized in the production of some lacquers, paints and ink for the printing industry, as well as in pharmaceutical products such as antiseptics, drugs, syrups, medicated sprays.

## 17) GENOME SEQUENCING

**IN NEWS:** - Complete human genome sequencing has been done. A complete human genome makes it easier to study genetic variation between individuals or between populations.

### ABOUT GENOME SEQUENCING

- Genome sequencing is the process that involves deciphering the exact order of base pairs in an individual. This “deciphering” or reading of the genome is what sequencing is all about. Costs of sequencing differ based on the methods employed to do the reading or the accuracy stressed upon in decoding the genome.
- The genetic sequence made available in 2003 from the Human Genome Project, an international collaboration between 1990 and 2003, contained information from a region of the human genome known as the Here, the chromosome is rich in genes, and the DNA encodes for protein.
- The 8% that was left out was in the area called heterochromatin. This is a smaller portion of the genome, and does not produce protein.
- There were at least two key reasons why heterochromatin was given lower priority. This part of the genome was thought to be “junk DNA”, because it had no clear function. Besides, the euchromatin contained more genes that were simpler to sequence with the tools available at the time.
- Now, the fully sequenced genome is the result of the efforts of a global collaboration called the Telomere-2-Telomere (T2T) project. The invention of

new methods of DNA sequencing and computational analysis helped complete the reading of the remaining 8% of the genome

### 18) mRNA VACCINES

**IN NEWS:-** Data from human trials of India's first homegrown mRNA COVID-19 vaccine are likely to be presented to authorities for evaluation by the end of the month, and company officials are aiming to roll out the product before April.

The mRNA vaccine being developed by Pune-based Gennova.

#### ABOUT mRNA VACCINES

- Globally, mRNA vaccines have been at the vanguard of inoculation programmes in the United States and Europe because they exploit recent advances in molecular biotechnology and are said to be quicker to manufacture than older, well-established vaccine design principles.
- Messenger RNA or mRNA technology works by teaching our cells to recognize and protect us against infectious diseases. One of the challenges with this new technology is that it must be kept cold to maintain stability during transport and storage.
- mRNA vaccines trick the body into producing some of the viral proteins itself.
- They work by using mRNA, or messenger RNA, which is the molecule that essentially puts DNA instructions into action.
- Inside a cell, mRNA is used as a template to build a protein.
- To produce an mRNA vaccine, scientists produce a synthetic version of the mRNA that a virus uses to build its infectious proteins.
- This mRNA is delivered into the human body, whose cells read it as instructions to build that viral protein, and therefore create some of the virus's molecules themselves.

- These proteins are solitary, so they do not assemble to form a virus.
- The immune system then detects these viral proteins and starts to produce a defensive response to them.
- **Significance of mRNA vaccines:** There are two parts to our immune system: innate (the defences we're born with) and acquired (which we develop as we come into contact with pathogens).
  - Classical vaccine molecules usually only work with the acquired immune system and the innate immune system is activated by another ingredient, called an adjuvant.
  - Interestingly, mRNA in vaccines could also trigger the innate immune system, providing an extra layer of defence without the need to add adjuvants.

### 19) COVAXIN

**IN NEWS:** - The WHO has suspended Covid-19 vaccine Covaxin's supply through UN agencies, after an inspection flagged issues relating to manufacturing.

#### ABOUT COVAXIN

- Covaxin is a whole virion-inactivated vaccine against SARS-CoV-2, developed in partnership with the Indian Council of Medical Research and the National Institute of Virology, Pune.
- Covaxin had got emergency use listing (EUL) from the WHO in November 2021 as it met the standards set by the WHO for protection against the coronavirus disease.
- The WHO's EUL is also a prerequisite for a vaccine to be part of supply under COVAX initiative.
- The licence thus paved the way for Bharat Biotech to supply Covaxin to UN agencies including through COVAX.

- At the time the EUL for Covaxin was granted, however, the WHO had not done an inspection.
- The inspection was done in March 2022, based on which the WHO has announced the suspension of supply of Covaxin through UN procurement agencies.
- In its inspection, the WHO found deficiencies in good manufacturing practices (GMP).
- Good Manufacturing Practice (GMP) is a system for ensuring that products are consistently produced and controlled according to quality standards. It is designed to minimize the risks involved in any pharmaceutical production that cannot be eliminated through testing the final product.
- More than 100 countries have incorporated the WHO GMP provisions into their national medicines laws, and many more countries have adopted its provisions and approach in defining their own national GMP requirements.
- The WHO GMP continues to be used as a basis for the WHO Certification Scheme and prequalification of vaccines for procurement by UN agencies.

## 20) GEOMAGNETIC STORMS

**IN NEWS:-** Recently, Elon Musk's Starlink has lost dozens of satellites that were caught in a geomagnetic storm a day after they were launched.

### ABOUT GEOMAGNETIC STORMS

- A geomagnetic storm, also known as a magnetic storm, is a temporary disturbance of the Earth's magnetosphere caused by a solar wind shock wave and/or cloud of magnetic field that interacts with the Earth's magnetic field.

- The disturbance that drives the magnetic storm may be a solar coronal mass ejection (CME) or (much less severely) a co-rotating interaction region (CIR), a high-speed stream of solar wind originating from a coronal hole.
- The frequency of geomagnetic storms increases and decreases with the sunspot cycle.
- During solar maximum, geomagnetic storms occur more often, with the majority driven by CMEs.
- The increase in the solar wind pressure initially compresses the magnetosphere.
- The solar wind's magnetic field interacts with the Earth's magnetic field and transfers an increased energy into the magnetosphere.
- Both interactions cause an increase in plasma movement through the magnetosphere (driven by increased electric fields inside the magnetosphere) and an increase in electric current in the magnetosphere and ionosphere.
- During the main phase of a geomagnetic storm, electric current in the magnetosphere creates a magnetic force that pushes out the boundary between the magnetosphere and the solar wind.
- Several space weather phenomena tend to be associated with or are caused by a geomagnetic storm.
- These include solar energetic particle (SEP) events, geomagnetically induced currents (GIC), ionospheric disturbances that cause radio and radar scintillation, disruption of navigation by magnetic compass and auroral displays at much lower latitudes than normal.
- The largest recorded geomagnetic storm, the Carrington Event in September 1859, took down parts of the recently created US telegraph network, starting fires and shocking some telegraph operators.

- In 1989, a geomagnetic storm energized ground induced currents that disrupted electric power distribution throughout most of Quebec and caused aurorae as far south as Texas

### **Effect of Geomagnetic Storm on Earth**

- **Can Impact Space Weather:** Not all solar flares reach Earth, but solar flares/storms, Solar Energetic Particles (SEPs), high-speed solar winds, and Coronal Mass Ejections (CMEs) that come close can impact space weather in near-Earth space and the upper atmosphere.
- **Can Hit Operations of Space-Dependent Services:** Solar storms can hit operations of space-dependent services like Global Positioning Systems (GPS), radio, and satellite communications. Aircraft flights, power grids, and space exploration programmes are vulnerable.
- **Can Potentially Create Disturbances in the Magnetosphere:** Coronal Mass Ejections (CMEs) with ejectiles loaded with matter travelling at millions of miles an hour, can potentially create disturbances in the magnetosphere, the protective shield surrounding the Earth.
- Astronauts on spacewalks face health risks from possible exposure to solar radiation outside the Earth's protective atmosphere.

### **21) NIPAH VIRUS**

**IN NEWS:-** Scientists detected the presence of IgG antibodies against Nipah virus infection (NiV) in 51 bats that were captured from Karnataka, Kerala, Tamil Nadu and Puducherry.

### **ABOUT NIPAH VIRUS**

- It is a zoonotic virus (it is transmitted from animals to humans).



- The organism which causes Nipah Virus encephalitis is an RNA or Ribonucleic acid virus of the family Paramyxoviridae, genus Henipavirus, and is closely related to Hendra virus.
- Hendra virus (HeV) infection is a rare emerging zoonosis that causes severe and often fatal disease in both infected horses and humans.
- It first broke out in Malaysia and Singapore in 1998 and 1999.
- It first appeared in domestic pigs and has been found among several species of domestic animals including dogs, cats, goats, horses and sheep.
- The disease spreads through fruit bats or 'flying foxes,' of the genus Pteropus, who are natural reservoir hosts of the Nipah and Hendra viruses.
- The virus is present in bat urine and potentially, bat faeces, saliva, and birthing fluids.
- The human infection presents as an encephalitic syndrome marked by fever, headache, drowsiness, disorientation, mental confusion, coma, and potentially death.
- Currently, there are no vaccines for both humans and animals. Intensive supportive care is given to humans infected by Nipah virus.

## 22) INSACOG

**IN NEWS:** - Indian SARS-CoV-2 Genomics Consortium (INSACOG) is a multi-lab agency set up by the Government with a view to sequencing and analysing the genome data with respect to the SARS-CoV-2 virus.

- Initially, there were ten laboratories in the consortium but now, the number has been expanded to include 28 laboratories.
- The idea behind the establishment of the INSACOG is to expand the whole genome sequencing of the coronavirus to understand how it spreads and evolves.

- It is set up under the Ministry of Health and Family Welfare, GOI.
- INSACOG is a joint initiative of the Health Ministry, the Department of Biotechnology (DBT), Council of Scientific and Industrial Research (CSIR) and the Indian Council of Medical Research (ICMR).
- INSACOG had started genome sequencing in 2020 with initial samples being taken from international passengers who arrived in India from Brazil, the UK or South Africa, or those who had transited through these countries since these countries showed a surge in the number of cases. The network also sequenced RTPCR positive samples from States reporting sudden surges in cases.
- Objectives of INCASOG are:
  - To ascertain the status of Variants of Interest (VoI) and Variants of Concern (VoC) in India.
  - To establish sentinel surveillance and surge surveillance mechanisms for early detection of genomic variants and assist in formulating effective public health response.
  - To determine the presence of genomic variants in samples collected during super-spreader events and in areas reporting increasing trend of cases/deaths, etc.

### **23) AFRICAN SWINE FLU**

- The disease was first reported in November-December, 2019 from the areas of China bordering Arunachal Pradesh.
- It is a highly contagious and fatal animal disease that infects and leads to an acute form of hemorrhagic fever in domestic and wild pigs.

- Other manifestations of the disease include high fever, depression, anorexia, loss of appetite, hemorrhages in the skin, vomiting and diarrhoea among others.
- It was first detected in Africa in the 1920s.
- Historically, outbreaks have been reported in Africa and parts of Europe, South America, and the Caribbean.
- However, more recently (since 2007), the disease has been reported in multiple countries across Africa, Asia and Europe, in both domestic and wild pigs.
- The mortality is close to 100% and since the fever has no cure, the only way to stop its spread is by culling the animals.
- ASF is not a threat to human beings since it only spreads from animals to other animals.
- ASF is a disease listed in the World Organisation for Animal Health (OIE) Terrestrial Animal Health Code and thus, reported to the OIE.

## HISTORY AND CULTURE

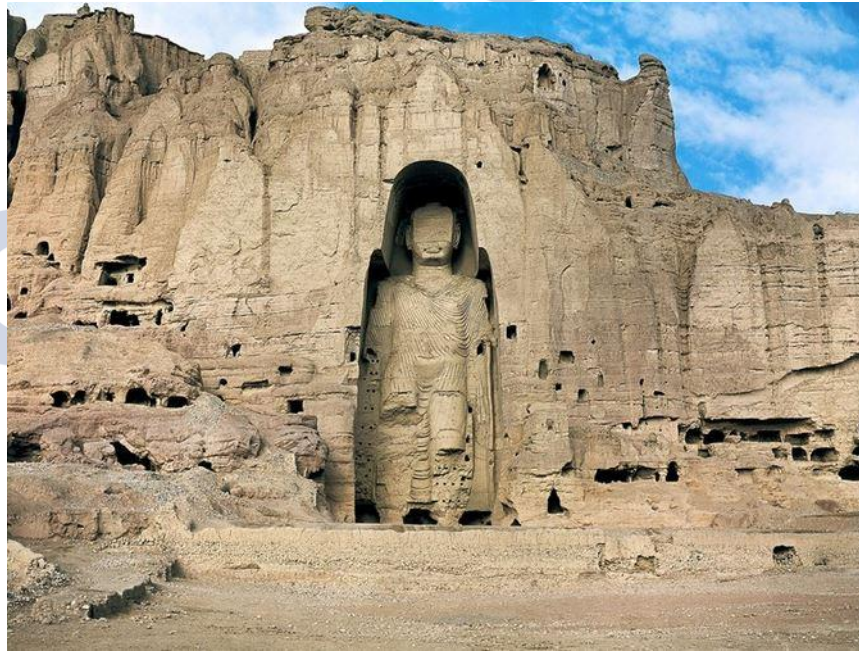
### 24) BAMIYAN BUDDHAS

**IN NEWS:-** Two decades later after its destruction, the Bamiyan Buddhas have been brought back to life in the form of 3D projections in an event called “A Night with Buddha”.

#### ABOUT BAMIYAN BUDDHAS

- In their Roman draperies and with two different mudras, the Bamiyan Buddhas were great examples of a confluence of Gupta, Sassanian and Hellenistic artistic styles.
- They are said to date back to the 5th century AD and were once the tallest standing Buddhas in the world.

- Salsal and Shamama, as they were called by the locals, rose to heights of 55 and 38 metres respectively, and were said to be male and female.
- Salsal means “the light shines through the universe”; Shamama is “Queen Mother”.
- The statues were set in niches on either end of a cliffside and hewn directly from the sandstone cliffs.



## 25) GURU TEGH BAHADUR

**IN NEWS:** - The year 2021 marked the 400th birth anniversary of the ninth Sikh Guru, Shri Guru Tegh Bahadur

### ABOUT GURU TEGH BAHADUR

- Guru Tegh Bahadur was born at Guru Ke Mahal, Amritsar on April 1, 1621, to Guru Hargobind, the sixth Guru of the Sikhs and Mata Nanaki.
- He was the fifth and the youngest son of Guru Hargobind and was given the name Tyaga Mal at birth.

- Guru Tegh Bahadur was trained in martial arts, swordsmanship, and horseback riding as a kid.
- Despite being a capable soldier with his father in several battles, he seems to have chosen a life of renunciation and meditation.
- In 1633, he married Gujari, later called Mata Gujari.
- In 1656, they relocated to Bakala, where Tegh Bahadur would spend most of his time in reflection and meditation.
- He became the ninth Guru after succeeding Guru Har Krishan and was followed by the tenth guru, Guru Gobind Singh.
- His term as Guru ran from 1665 to 1675.
- Sikhs revered Guru Tegh Bahadur as the 'Protector of Humanity' (Srisht-di-Chadar).
- He was a great thinker and poet who provided thorough explanations of the nature of God, body, mind and bodily attachments, among other spiritual matters. In the form of 116 poetic hymns called Salokas and Couplets, his compositions are enshrined in the sacred scripture, 'Guru Granth Sahib'.
- He is said to have travelled widely to spread Nanak's teachings.
- Everywhere he went, he built up communal kitchens and wells for the locals.
- He created the settlement of Chak-Nanki in Punjab, which eventually became a part of Anandpur Sahib, a well-known holy city and popular tourist destination in the Himalayan foothills.
- During Aurangzeb's reign, he opposed forcible conversions of non-Muslims to Islam.
- He is also known as a great teacher and an excellent warrior.
- There are various versions that explain why Guru Tegh Bahadur was executed under Aurangzeb's command.

- He fought for the rights of Kashmiri Pandits who approached him against Aurangzeb's religious persecution.
- At the command of Mughal emperor Aurangzeb, he was publicly executed in Delhi in 1675 for refusing to submit to Mughal authorities and opposing them.
- In Delhi, the Gurudwaras Sis Ganj Sahib and Rakab Ganj Sahib commemorate the locations of his execution and cremation.
- According to the Nanakshahi calendar published by the Shiromani Gurdwara Parbandhak Committee in 2003, the martyrdom of Guru Tegh Bahadur is commemorated every year on November 24 as the Shaheedi Divas.
- The execution strengthened Sikhs' commitment to oppose religious injustice and persecution.
- His martyrdom aided the Sikh Panth in uniting to make human rights protection vital to Sikh identity.
- Inspired by him, Guru Gobind Singh Ji, finally formed the Sikh group into a separate, formal, symbol-patterned society that became known as Khalsa (Martial).

## 26) ALLURI SITARAMA RAJU

**IN NEWS-** The Vice-President visited the birthplace of revolutionary freedom fighter Alluri Sitarama Raju (1897 – 1924) at Pandrangi, Andhra Pradesh.

### ABOUT ALLURI SITARAMA RAJU

- Alluri Sitarama Raju was an Indian revolutionary who waged an armed campaign against British colonial rule in India. He became a monk at the age of 18.

- Born in present-day Andhra Pradesh, he became involved in anti-British activities in response to the 1882 Madras Forest Act, which effectively restricted the free movement of Adivasis (tribal communities) in their forest habitats and prevented them from practicing a traditional form of agriculture known as podu (shifting cultivation).
- Rising discontent towards the British led to the Rampa Rebellion/Manyam Rebellion of 1922, in which he played a major part as a leader.
- He was nicknamed "Manyam Veerudu" (Hero of the Jungle) by local villagers for his heroic exploits.
- In 1924, Raju was taken into police custody, tied to a tree, and shot by a public execution, effectively ending the armed rebellion.

## GEOGRAPHY

### 27) SUTLEJ YAMUNA LINK CANAL

**IN NEWS:-** The Haryana Assembly has passed a resolution seeking completion of the Sutlej Yamuna Link Canal (SYL) Canal, bringing back into focus the contentious issue of sharing of river waters between Haryana and Punjab.

About the Canal

#### ABOUT SUTLEJ YAMUNA LINK CANAL

- In 1982, then Prime Minister Indira Gandhi launched the construction of the SYL Canal with a groundbreaking ceremony in Kapoori village in Patiala district.
- The issue dates back to 1966 at the time of reorganization of Punjab and formation of Haryana.
- Punjab was opposed to sharing the waters of the two rivers with Haryana, citing riparian principles.

- A stretch of 214 km was to be constructed, out of which 122 km was to cross Punjab and 92 km in Haryana.
- But the Akalis launched an agitation in the form of Kapoori Morcha against the construction of the canal.
- In July 1985, Prime Minister Rajiv Gandhi and then Akali Dal chief signed an accord agreeing for a new tribunal to assess the water.
- **Significance of the Canal:** The canal once completed will enable sharing of the waters of the rivers Ravi and Beas between the two states.

### Constitution Provision for River Water Sharing In India

- Water is a state subject as per entry 17 of State List with respect to water supplies, irrigation and canals, drainage and embankments, water storage and water power, subject to the provisions of Entry 56 of List 1.”
- Entry 56 of Union List gives power to the Union Government for regulation and development of inter-State rivers and river valleys.
- Article 262: Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, in any inter-State river or river valley.
- Article 143(1): Power of President to consult Supreme Court (1) If at any time it appears to the President that a question of law or fact has arisen, or is likely to arise, which is of such a nature and of such public importance that it is expedient to obtain the opinion of the Supreme Court upon it, he may refer the question to that Court for consideration and the Court may, after such hearing as it thinks fit, report to the President its opinion thereon.



**28) KUTHIRAN TUNNEL**

**IN NEWS:-** The Union Minister for Road Transport and Highways has inaugurated the Kuthiran Tunnel in Kerala

**ABOUT KUTHIRAN TUNNEL**

- Kuthiran Tunnel is a Twin-tube tunnel at Kuthiran in Thrissur District of Kerala.
- It is located on National Highway 544, owned and operated by the National Highways Authority of India.
- It is Kerala's first-ever tunnel for road transport and South India's Longest 6-lane road tunnel.
- Kuthiran gradient is situated in the Kuthiran Hills, situated in the western part of Anaimalai Hills. The hills are a notified Peechi- Vazhani wildlife sanctuary.
- It will drastically improve connectivity to Tamil Nadu and Karnataka.
- The road will improve connectivity to important ports and towns in North-South Corridor without endangering wildlife.

**ENVIRONMENT AND ECOLOGY****29) PRAKRITI INITIATIVE**

**IN NEWS:-** In another step toward eliminating single-use plastic, the Union Environment Ministry has launched "Prakriti", a mascot to spread greater awareness about small changes that can be sustainably adopted in the lifestyle for a better environment.

## ABOUT PRAKRITI INITIATIVE

During the event, following green initiatives were launched for plastic waste management:

- National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management (MoEFCC): This aims to connect all stakeholders including Central Ministries/ Departments, State/UT Governments, etc. through one platform and track status and progress made for elimination of single use plastic & effective management of plastic waste.
- Extended Producer Responsibility (EPR) Portal for Plastic Packaging (CPCB): This portal will look after tasks that will help in overall operational functions like improving accountability, traceability, transparency and facilitating ease of reporting compliance to EPR Obligations by Producers, Importers and Brand-owners.
- Mobile App for Single Use Plastics Grievance Redressal (CPCB): This app will allow citizens to check sale/usage/manufacturing of single use plastic in their region and tackle the plastic menace.
- Monitoring module for single use plastic (CPCB): This will be for local bodies, State pollution control board/PCCs and CPCB, etc. to invent details of single use plastic production, its sale & usage, etc. in commercial establishments at district level, and on-ground enforcement of ban on single use plastics.
- Industrial production of Graphene from Waste Plastic (G B Pant NIHE & NRDC) will promote more industries to come forward to upcycle plastic waste.

### Single use plastics

- Single-use plastics refer to disposable items like grocery bags, food packaging, bottles and straws that are used only once before they are thrown away, or sometimes recycled.

- A government committee has identified the single use plastic (SUP) items to be banned based on an index of their utility and environmental impact. It has proposed a three-stage ban:
  - The first category of SUP items proposed to be phased out are plastic sticks used in balloons, flags, candy, ice-cream and ear buds, and thermocol that is used in decorations.
  - The second category, proposed to be banned from July 1, 2022, includes items such as plates, cups, glasses and cutlery such as forks, spoons, knives, straws, trays; wrapping and packing films used in sweet boxes; invitation cards; cigarette packets; stirrers and plastic banners that are less than 100 microns in thickness.
  - A third category of prohibition is for non-woven bags below 240 microns in thickness. This is proposed to start from September next year.

### 30) GO111

Have fun. Achieve dreams.

**IN NEWS:-** Environmentalists and activists are criticizing the Telangana government for withdrawing an over 25-year-old government order (GO) 111 protecting the historic Osman Sagar and Himayat Sagar reservoirs in Hyderabad, which they say will destroy the fragile surrounding ecosystem.

#### **ABOUT GO111**

- On 8th March, 1996, the government of erstwhile (undivided) Andhra Pradesh had issued GO 111 prohibiting development or construction works in the catchment area of the Osman Sagar and Himayat Sagar lakes up to a radius of 10 km.
- The GO prohibited the setting up of industries, residential colonies, hotels, etc. which cause pollution.

- The aim of the restrictions was to protect the catchment area, and to keep the reservoirs pollution-free.
- The lakes had been supplying water to Hyderabad for nearly 70 years and were the main source of drinking water for the city at the time.
- The reservoirs were created by building dams on the Musi (also known as Moosa or Muchkunda) river, a major tributary of the Krishna, to protect Hyderabad from floods.
- The proposal to build the dams came after a major flood during the reign of the sixth nizam Mahbub Ali Khan (1869-1911) in 1908, in which more than 15,000 people were killed.
- The lakes came into being during the reign of the last nizam, Osman Ali Khan (1911-48). Osman Sagar was completed in 1921, and Himayat Sagar in 1927. The nizam's guesthouse at Osman Sagar is now a heritage building.
- The city no longer depends on these two reservoirs for water supply, and there was no need to continue with the restrictions on development in the catchment radius.
- Hyderabad's drinking water requirement has increased to more than 600 Million Gallons per Day (MGD), which is being drawn from other sources including the Krishna river.

## INTERNAL SECURITY

### 31) POSITIVE INDIGENIZATION LIST

**IN NEWS:-** The Ministry of Defence (MoD) has notified the second negative import list, now renamed as the 'positive indigenisation list' of 108 items. The 'First Negative Indigenisation' List comprising 101 items was notified in August 2020.

**ABOUT SECOND POSITIVE INDIGENIZATION LIST**

- All the 108 items will now be procured from indigenous sources as per provisions given in Defence Acquisition Procedure (DAP) 2020.
- It is planned to be implemented progressively with effect from December 2021 to December 2025.
- It comprises complex systems, sensors, simulator, weapons and ammunitions like Helicopters, Next Generation Corvettes, Airborne Early Warning and Control (AEW&C) systems, Tank Engines, Medium Power Radar for Mountains, MRSAM (Medium Range Surface to Air Missile) Weapon Systems and many more such items to fulfil the requirements of Indian Armed Forces.
- It will give a boost to indigenisation with active participation of public and private sector for fulfilling the twin objectives of achieving self-reliance (Atmanirbhar Bharat) and promoting defence exports.
- Import substitution of ammunition which is a recurring requirement has been given special focus.
- Not only does the list recognise the potential of the local defence industry, it will also invigorate impetus to domestic Research & Development by attracting fresh investment into technology and manufacturing capabilities.
- It also provides an excellent opportunity for 'start-ups', as Micro, Small, and Medium Enterprises (MSMEs) will get a tremendous boost from this initiative.

**32) BAIJAYANT PANDA COMMITTEE**

**IN NEWS:-** Ministry of Defence has constituted a High Level Expert Committee, under the chairmanship of former Member of Parliament Shri Baijayant Panda, for a comprehensive review of National Cadet Corps (NCC) in order to make it more relevant in changed times.

### ABOUT BAIJAYANT PANDA COMMITTEE

- The Terms of Reference of the Committee, inter-alia, broadly provide for suggesting measures which can empower NCC cadets to contribute more effectively towards nation building and national developmental efforts in various sectors;
- propose measures for gainful engagement of its Alumni for betterment of the organisation as a whole and to study/recommend best practices of similar international youth organisations for inclusion in the NCC curriculum.
- The NCC is the largest uniformed organisation which aims at developing character, discipline, a secular outlook and ideals of selfless service amongst young citizens. It also aims to create a pool of organised, trained and motivated youth with leadership qualities in all walks of life.

### ECONOMY

33)

#### POISON PILL

Have fun. Achieve dreams.

**IN NEWS:** - Twitter is trying to thwart billionaire Elon Musk's takeover attempt with a "Poison Pill". This would make it much more expensive and complicated for the Tesla CEO to take control of Twitter. Acquirer

#### ABOUT POISON PILL

- Poison Pill is a corporate defense strategy utilized by a target company to prevent or discourage hostile takeover attempts.
- Under this mechanism, existing shareholders, excluding the acquiring entity purchase additional shares at a discounted rate making it difficult for the acquirer to establish a majority stake in the company.

**34) SEMICON INDIA 2022**

**IN NEWS:-** Ministry of Electronics & Information Technology has inaugurated the first ever Semicon India 2022 Conference under India Semiconductor Mission in Bengaluru.

**ABOUT SEMICON INDIA 2022**

- Semicon India – 2022 has been organized to take forward the vision of the Prime Minister to make India a leader in the electronics manufacturing, semiconductor design, manufacturing & innovation.
- Theme of the Conference: Catalyzing India's Semiconductor Ecosystem.

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