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1. Gravitational Wave Background: A Very Simple Explanation

Recently, the gravitational wave background of the universe has been detected for the first time. Gravitational waves or gravitational waves (GW) are ripples in the structure of space-time.

These waves are generated by the most energetic phenomena in the universe (such as the merger of two black holes and the collision of a neutron star). First of all, Einstein had predicted about them in his 'Theory of Relativity'.

They were first discovered in 2015. However, so far these waves have only been detected in the shortest range of wavelengths. When gravitational waves pass through a medium, there is a slight stretching or contraction of that medium. To find evidence of this stretching or contraction, astronomers observe the pulsar.

Pulsars are rapidly rotating stars. They emit beams of radiation at very precise intervals. Pulsars practically act as cosmic lighthouses (used as clocks that tell the exact time).

Now, scientists have discovered a "background hum" resonating throughout the universe. This confirms the presence of low-frequency (long-wavelength) gravitational waves. It is said that it keeps moving continuously in cosmic noise.

Cosmic or Space Noise It is also called Galactic Radio Noise. It is not actually a sound, but a phenomenon occurring outside the Earth's atmosphere. These waves are also important for studying the nature of gravity.

The Pune-based Giant Meterwave Radio Telescope (GMRT) is one of the six large telescopes in the world that has played a key role in providing evidence of the Gravitational Wave Background. Five other telescopes are located in Germany, the United Kingdom, France, Italy and the Netherlands.

Detection of Gravitational Waves with Pulsars-
- Gravitational waves produced by the merger of supermassive black holes in distant galaxies subtly change the position of the Earth.
- Telescopes on Earth measure tiny differences in the arrival times of radio bursts caused by collisions.
- Measuring the effect on pulsars increases the likelihood of detecting gravitational waves.

2. 5th India-Philippines Joint Commission on Bilateral Cooperation (JCBC)

India and the Philippines have organized the 5th meeting of the Joint Commission on Bilateral Cooperation (JCBC). During this, both the countries decided to expand their defense partnership.

The defense sector has become a major pillar of the India-Philippines partnership because of China's claims on the South China Sea region.

India has appealed to all stakeholders to abide by the 2016 award by the Permanent Court of Arbitration on the South China Sea (SCS). Also, called for respecting the United Nations Convention on the Law of the Sea (UNCLOS).

The ruling contradicts China's extensive claims over the waters of the South China Sea. China has a dispute with South-East Asian countries regarding this area.

South China Sea Dispute:
- China claims 90% of the South China Sea. Its claim is based on the U-shaped nine-dash line.
- **Territorial Disputes:** Brunei, Malaysia, Philippines, Taiwan and Vietnam oppose China's claim on the South China Sea.

India's interests in the South China Sea:
- Commercial interests in the area
- Freedom of navigation and
- Rule-based system.

UNCLOS was adopted in 1982 and came into force in 1994. It sets a broad framework of law and order on the oceans and seas of the world. It also makes rules governing all kinds of uses of the oceans and their resources.

3. National Sickle Cell Anemia Elimination Mission

Recently the Prime Minister launched the 'National Sickle Cell Anemia Eradication Mission 2047' (NSCEM) in Shahdol, Madhya Pradesh, and distributed sickle cell genetic status cards to the beneficiaries.

Objective of NSCEM

4

- NSCEM aims to address the serious health challenges posed by sickle cell disease, especially among the tribal population.
- The launch marks an important milestone in the ongoing efforts of the government to eliminate sickle cell disease as a public health problem by 2047.
- The National Mission to Eradicate Sickle Cell Anemia was announced in the Union Budget 2023.
- It may be noted that at present 17 states of the country are most affected by sickle cell anemia where this mission will be implemented. India accounts for more than 50 percent of sickle cell anemia cases in the world.

Objective of Mission:
- Eliminate sickle cell disease as a public health problem in India before 2047, to raise awareness about the disease in the community.
- Provide affordable and accessible care to all sickle cell patients, ensure quality of care for patients and
- Reducing the spread of sickle cell.

Sickle Cell Disease: SCD
- Sickle cell disease (SCD) is a group of inherited disorders involving red blood cells.
- Healthy red blood cells are round and they circulate through small blood vessels carrying oxygen to all parts of the body.
- Normally, red blood cells are disc-shaped and flexible enough to flow easily through blood vessels. If you have sickle cell disease, your red blood cells are crescent-shaped or "sickle".
- These cells don't fold or move easily, and can block blood flow to the rest of your body. Due to this there is deficiency of blood in the body. This is called anemia or sickle cell anemia.
- Sickle cell disease is a lifelong disease. Blood and bone marrow transplants are currently the only treatments for sickle cell disease, although there are some effective treatments that can ease symptoms.

5

4. Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme

Recently, guidelines have been issued for the implementation of the Strategic Interventions for Green Hydrogen Transition (SIGHT) programme.
SIGHT is a sub-component of the National Green Hydrogen Mission. SIGHT aims to set up electrolyser manufacturing base (Component -I) and green hydrogen production centers (Component -II).
Hydrogen is a clean-burning fuel. Its combustion gives water as a by-product. Hydrogen is produced with the help of an electrolyzer.
Electrolysis is the process of splitting water into hydrogen and oxygen using electricity.
Generally for electrolysis, PEM (Proton Exchange Membrane) is used.
The SIGHT program has been launched with the objective of accelerating the production of green hydrogen fuel, technology development and cost reduction.
The total financial incentive for this program is Rs 17,490 crore. Government undertaking Solar Energy Corporation of India (SECI) is the implementing agency of this programme. As part of India's decarbonisation strategy, the National Green Hydrogen Mission was approved in January 2023. Another component of this is the Strategic Hydrogen Innovation Partnership (SHIP). It promotes public-private partnership framework for research and development.

Objectives of National Green Hydrogen Mission:

- Achieving a target of 5 million metric tonnes per annum green hydrogen production by 2030;
- To make India the leading producer and supplier of green hydrogen to the world;
- Creating opportunities for employment and economic development in the country;
- To support R&D projects in India for further development in Green Hydrogen etc.

6

5. **National Maritime Heritage Complex (NMHC) developed at Lothal**

Recently the Central Government is developing "National Maritime Heritage Complex (NMHC)" at Lothal in Gujarat.

The Ministry of Ports, Shipping and Waterways (MoPSW) is developing an NMHC at Lothal with world-class facilities. It is being developed under the Sagarmala programme. It aims to showcase the rich and diverse maritime heritage of India.

In this, all the diverse and rich artefacts from ancient to modern times will be stored for education-cum-entertainment purposes.

This complex will include the following:
- World's Highest Lighthouse Museum,
- World's largest open water gallery and India's largest naval museum. It is being developed as one of the biggest tourist destinations in the world.

Lothal, Ahmedabad
- It was a major city of the Indus Valley Civilization. Evidence of the oldest man-made dry dock (Dry Dock) of 2400 BC has been obtained from here.
- The site is situated between the Bhogwa and Sabarmati rivers near the Gulf of Khambhat.
- It was nominated for listing as a UNESCO World Heritage Site in 2014. However, it is still on the tentative list of UNESCO.

Indus Valley Civilization
- It is also known as the Harappan Civilization. It was the largest (geographical) civilization among the four ancient urban civilizations of the then world. The other three civilizations are – Egyptian, Mesopotamia and Chinese civilization.

- This civilization flourished in western South Asia around 2,500 BC. Presently it is the area of Pakistan and North-West India.
- **Sagarmala Programme:** MoPSW started this program in 2015. Under this programme, overall port infrastructure is being developed along India's 7500 km long coastline.

6. **CERT-In issues "Guidelines on Information Security Practices" for Government Entities for Safe & Trusted Internet**

Recently the Indian Computer Emergency Response Team (CERT-In) has issued "Guidelines on Information Security Practices" for Government Organizations.

CERT-In has issued guidelines under Section 70B of the Information Technology (IT) Act, 2000. These guidelines apply to all Ministries, Departments, Secretariats and Offices specified in the First Schedule to the Government of India (Allocation of Business) Rules, 1961 as well as to their attached and subordinate offices.

These guidelines provide a roadmap for government institutions and industries. It has the following objectives-

- Mitigating cyber risk,
- Protect citizen data and
- Improve cyber security system in the country.

Main Guidelines –

- Designating a Chief Information Security Officer (CISO) for IT Security
- Formulation of cyber security policy.
- Assign tasks and responsibilities to the CISO and a dedicated cyber security implementation team.
- Undertake internal and external audit of the entire Information and Communication Technology (CT) infrastructure. Also, implementing appropriate security arrangements based on the results of the audit.
- Ensuring proper physical separation of sensitive and wireless networks.

- Data backup policy should be documented, determined and monitored.

CERT-IN
Indian Computer Emergency Response Team (CERT-IN)
It is the national nodal agency for responding to computer security incidents. It has been established under the provisions of Section 70B of the IT Act, 2000 under the Ministry of Electronics and Information Technology.
India's other measures for cyber security –
- National Cyber Security Policy 2013
- Indian Cyber Crime Coordination Center (14C) etc.

7. **Natural short-lived halogens exert an indirect cooling effect on climate**

In addition to absorbing carbon dioxide and moderating the climate, the oceans keep Earth cool by releasing short-lived halogens (SLHs) such as chlorine, bromine and iodine, according to a study recently published in Nature.

Key facts:
- Currently, these halogens contribute 8-10% of cooling. It is estimated that this may increase to 18-31% by 2100. Short-lived halogens have a lifetime of less than six months in the atmosphere.
- They are produced naturally by the oceans, polar ice, and the biosphere. However, human activities have increased their release from the ocean into the atmosphere.
- Natural sources of short-lived halogens include both biogenic and abiotic sources. Biogenic sources include nine halocarbons that are the result of phytoplankton metabolism associated with micro- and macro-algae as well as photochemistry at the sea surface.
- Human activities cause pollutants such as ozone to accumulate in the ocean, which then convert soluble short-lived halogens into insoluble ones, allowing them to escape from ocean water into the atmosphere.
- Halogens cause ozone depletion in the troposphere. Ozone is a greenhouse gas that traps outgoing radiation, causing an increase in temperature. Short-lived halogens released from the oceans reduce warming by depleting ozone.

9

- The short-lived halogens extend methane lifetime in the atmosphere by scavenging hydroxyl radicals (OH). OH is a sink and it is known to break down the greenhouse gas methane.
- These halogens also increase the level of the greenhouse gas water vapors in the atmosphere.
- These short-lived halogens reduce the formation of cooling aerosols, which are suspended particles in the atmosphere that reflect sunlight.

8. **Power Ministry notifies carbon credit trading scheme (CCTS)**

Recently, a provision has been made in the Carbon Credit Trading Scheme, 2023 plan to set up a carbon credit trading market.
India aims to decarbonize the economy. Also, India is committed to cut carbon emissions by 45 percent from 2005 levels by 2030.
CCTS was first announced under the Energy Conservation Act, 2001. It was amended by the Energy Conservation (Amendment) Bill, 2022.

Key Points of CCTS
- A National Steering Committee (NSC) i.e. Indian Carbon Market Governing Board (ICMGB) will be constituted.
- It will be chaired by the Secretary, Ministry of Power and Environment. This committee will govern and oversee the functioning of the Indian Carbon Market (ICM).

The Bureau of Energy Efficiency (BEE) will be the administrator of the carbon market. In addition, he will also perform the following functions-
- Set targets to reduce emissions,
- Will issue carbon credit certificates, and give recognition to carbon verification agencies.
- The Central Electricity Regulatory Commission (CERC) will perform regulatory functions for all trading activities.
- The Grid Controller of India will act as the registry for the ICM.

10

The carbon market is a mechanism for pricing carbon emissions. Carbon markets establish trading systems where carbon credits or allowances are bought and sold.
A carbon credit is a type of tradable permit. This is equal to one tons of carbon dioxide removed, reduced or sequestered from the atmosphere.

9. Deep sea mining by International Seabed Authority (ISA)

Recently the International Seabed Authority (ISA) will start talks again to regulate Deep Sea Mining.
ISA is an autonomous international organization. It has been constituted under the United Nations Convention on the Law of the Sea (UNCLOS) of 1982. ISA allocates 'area' for deep sea mining.
Countries manage their own maritime zones and exclusive economic zones (up to 200 nautical miles). In contrast, the high seas and the international ocean floor are governed by UNCLOS.
Deep sea mining involves the extraction of mineral deposits and metals from the ocean floor.

Minerals are extracted in three ways:
- Extraction of deposit-enriched polymetallic nodules (PMN) in the ocean floor. PMN consists of nickel, rare earth elements, cobalt, etc.;
- Sulphide deposits are mined on a large scale from the ocean floor; And
- Separation of layers of cobalt from the rock.

Significance of deep sea mining:
- The metals extracted from PMN can be used in electronic devices, smartphones, solar panels etc.
- By using only 10% of the PMN reserves available in the allotted area, India can meet its energy needs for the next 100 years.

Concerns associated with deep sea mining:
- This can cause irreparable and irreversible damage to the deep sea ecosystem.
- Marine species can have harmful effects.
- There may be an increased risk of accidents such as fuel leakage and spillage.
- UNCLOS came into effect in 1994. It establishes a comprehensive system of law and order in the oceans and seas of the world. Also, establishes rules governing all uses of the oceans and their resources.

10. China chokes exports of semiconductor secret sauces gallium and germanium

Recently China announced export controls on two technology-critical critical elements, gallium (Ga) and germanium (Ge). The announcement has sent shockwaves across the globe. However, this decision is being seen as retaliation for the recent steps taken by the western countries.

This could not only impact India's ambition to become a semiconductor hub, but is also expected to impact its booming telecom and electric vehicle industries.

Gallium and Germanium:

- Both of these elements are silvery white, and are usually classified as "minor minerals".
- Both these metals are not generally obtained in natural form. They are produced in small concentrations as a by-product from refineries focused on other, more mainstream raw materials such as zinc or alumina.
- Germanium ores are rare and most germanium is a by-product of zinc production and coal fly ash.
- China produces about 60% of the world's germanium.
- Uses of germanium include fiber optic communications, night vision goggles, and space exploration—most satellites are powered by germanium-based solar cells.
- Gallium is found in small amounts in zinc ores and bauxite, and gallium metal is produced when bauxite is processed to make aluminum. About 80% of the production takes place in China.
- Gallium is used in compound semiconductors, which link multiple elements to improve transmission speed and efficiency, in TV and mobile phone screens, solar panels, and radar.

11. Election Commission launches portal for parties to file financial statements

12

Recently the Election Commission of India (ECI) has launched a web portal to facilitate online filing of financial accounts for political parties.

The new web-portal facilitates online submission of contribution reports, audited annual statements, and details of expenditure incurred during elections to the ECI by all political parties.

This will enhance the level of financial compliance and transparency of political parties. This is a part of ECI's 3C strategy – Clean-up, Crack-down and Compliance.

Further, it will remove the difficulties faced by political parties in filing reports physically (hard copy). Also, ensure timely and timely submission of financial statements in the prescribed/standardized format.

The submission of financial statements by political parties to the ECI is as per the provisions of the Representation of the People Act (RPA), 1951.

Why is there a need for transparency in the funding of political parties?

- This will reduce the use of black money in politics.
- Participation of women and other disadvantaged groups in elections will be encouraged.
- The independence of the parties will be guaranteed from undue influence of big donors and corporates.

Issues related to funding of political parties-
- Section 77 of the RPA, 1951 and the Conduct of Elections Rules, 1961 set limits on election expenditure for candidates only. No such limit has been prescribed in the case of expenditure of a political party.
- No cap on corporate donations paves the way for crony capitalism.
- **Crony capitalism:** An economy in which the success of business depends on a nexus between businessmen and government officials.
- The opaque nature of electoral bonds can harm free and fair elections.

12. Bharat 6G Alliance

13

Recently the Department of Telecom (DoT) has launched the India 6G Alliance (B6GA).

The India 6G Alliance (B6GA) is a collaborative platform. This includes public and private sector companies, academia, research institutes and standards development organizations.
It will form alliances and coordinate with other 6G global alliances. At the same time, it will also promote international cooperation and exchange of knowledge.

Objectives of B6GA –
- To make India a leading global supplier of intellectual property, products and solutions related to affordable 5G and 6G, and other futuristic telecom solutions.
- Using 6G technologies as a powerful driver for India @ 2030.
- Understanding the technology requirements as well as the business and societal needs of 6G.
- To develop a consultation paper to prepare for the implementation of "India 6G Vision" in India.

6G networks are the next generation of 5G. Its main features are as follows:
- It uses higher frequencies {sub-6 GHz and 95 GHz to 3 THz (tera Hertz)],
- It provides peak data rates of up to 1,000 Gbps,
- It is a low latency (1 millisecond) technology.
- **Latency:** Delay in transmission and reception
- **Significance:** It is helpful in High Performance Computing (HPC) edge computing, technology convergence etc.

13. Shanghai Cooperation Organization (SCO) 23rd Summit

The Prime Minister of India has hosted the 23rd Summit of the Council of Heads of State/Heads of Government of the Shanghai Cooperation Organization (SCO) on 4 July 2023.
The theme of the conference was "SECURE". SECURE stands for: Security, Economic Development, Connectivity, Unity, Sovereignty and Territorial Integrity and Respect and Environmental Protection.

Highlights of the summit-

- Iran was included as a new member country in this conference. Other members of SCO are China, India, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan and Uzbekistan.
- The New Delhi Declaration was signed to combat the activities of terrorist, separatist and extremist groups and prevent the spread of religious intolerance, aggressive nationalism, ethnic and racial discrimination, xenophobia (hatred of foreigners), etc.

Under the New Delhi Declaration-
- India did not sign in support of China's Belt and Road Initiative (BRI). The purpose of the BRI is to develop trade routes between China and the rest of the world.
- The member states agreed to declare 2024 as the SCO Environment Year.
- Statement on cooperation in digital transformation to harness the full potential of digitization in all sectors of the economy was issued.

Key Initiatives under the Chairmanship of India (2022-23)
- India has established five new pillars of cooperation within the SCO: start-ups and innovation, traditional medicine, youth empowerment, digital inclusion and shared Buddhist heritage.
- To enhance people to people engagement through SCO Millet Food Festival, Film Festival, International Conference on Common Buddhist Heritage etc.
- Varanasi has been declared as the first tourism and cultural capital of SCO.
- The SCO was founded in 2001 at a summit in Shanghai by the presidents of Russia, China, the Kyrgyz Republic, Kazakhstan, Tajikistan and Uzbekistan. India and Pakistan became its permanent members in the year 2017.

14. Ubinas volcano set to trigger state of emergency in Peru

Recently, due to the eruption of the Ubinas volcano in Peru, a state of emergency has been declared for sixty days in the surrounding areas.
According to the Geophysical Institute of Peru, this volcano has been spewing ash and gas for a week.
Be aware that this area is part of the "Ring of Fire" along the Pacific Ocean, which is known for volcanic activity and earthquakes.
Ubinas is in Moquegua, a region 1,200 km southeast of the capital Lima and is the most active volcano in the country.

Ring of Fire –

- It is a chain of 452 volcanoes that extends from the southern tip of South America to the coast of North America, across the Bering Strait, through Japan to New Zealand.
- It contains three of the world's four most active volcanoes—Mount St. Helens in the United States, Mount Fuji in Japan, and Mount Pinatubo in the Philippines. It is also sometimes called the circum-Pacific belt.
- Let us tell you that Agni Valaya i.e. "Ring of Fire" is not a circular ring at all. It is shaped like a horseshoe and is 40,000 kilometers (25,000 mi) in area.
- About 90% of the world's earthquakes and 80% of the largest (long) earthquakes occur in the Ring of Fire.

15. The Mystery of the 'Gravity Hole' Beneath the Indian Ocean

Recently researchers from IISc, Bengaluru have identified the reasons for the formation of 'Gravity Hole' in the Indian Ocean.

This gravity hole is also known as the Indian Ocean Geoid Low (IOGL). This hole is more than three million square kilometers wide.

IOGL is located just south of Sri Lanka. Here the Earth's gravitational pull is weakest. As a result, the sea level here is 100 meters lower than the global average. The shape of the Earth is not actually spherical. It is flattened at both the poles and bulges at the equator.

As a result of this, as well as variations in the gravitational pull caused by other factors such as the mass of the Earth's crust, the Earth is irregularly shaped.

These anomalies are called "geoids" on a map with an imaginary line joining Earth's mean sea level. The origin of these anomalies is due to irregularities in the gravitational field.

IOGL is said to be the lowest geoid anomaly on Earth. The researchers found that the IOGL was formed by plumes of molten rock rising from the bottom edge of the Tethys Ocean.

The superheated flow of material from the African super plume began to move eastward and eventually reached the bottom of the IOGL.

The African super plume is a large section of Earth's mantle that conducts heat from near the core to the crust. Therefore, the presence of lighter elements or materials in the middle mantle below the IOGL is responsible for the low gravity in this region.

16. One Health Priority Research Agenda on Antimicrobial Resistance

Recently One Health Priority Research Agenda for Antimicrobial Resistance (AMR) has been released.

The agenda has been issued jointly by the Food and Agriculture Organization (FAO), the United Nations Environment Program (UNEP), the World Health Organization (WHO) and the World Organization for Animal Health (WOAH). The agenda supports increasing research and investment in antimicrobial resistance (AMR).

AMR occurs when bacteria, viruses, fungi and parasites mutate on their own over time and do not respond to drugs.

This makes the infection more difficult to treat and increases the risk of spreading disease, serious illness, and death. Earlier, WHO also launched a Global Research Agenda for AMR in Human Health this year.

The agenda presents a five-pillar One Health approach to combat the growing threat of AMR, which includes the following:

- Transmission: This focuses on the environmental, plant, animal and human sectors where transmission, circulation and spread of AMR occur.
- Integrated Monitoring: Identifying interrelated priority research questions to improve common technical understanding and information sharing among forest health stakeholders.
- Intervention: Interventions aimed at preventing, controlling or reducing the incidence, prevalence and spread of AMR.
- Behavioral Insights and Changes: Behavioral insights and changes among different groups and actors involved in the development and spread of AMR at One Health Interface.
- Economics and Policy: This takes into account the cost-effectiveness, financial sustainability and long-term financial impact of the AMR investment case.

One Health is an integrated and coordinated approach. It aims to sustainably balance and optimize the health of humans, animals, plants and ecosystems. It includes the following principles – equality between sectors and disciplines, socio-political and multicultural equality, socio-ecological balance (harmonious balance between human-animal-environment), transdisciplinarity and multi-sectoral cooperation etc.

17. Black Sea Grain Agreement

The recent "Black Sea Grain Agreement" is set to expire in July 2023.

The "Black Sea Grain Agreement" provides for a secure maritime humanitarian corridor for Ukrainian exports from Ukraine's three major ports on the Black Sea.

Exports from Ukraine mainly consist of food grains and fertilizers (including ammonia). These ports are: Chornomork, Odessa and Yuzhny/Pivdeni.

This agreement was reached in July 2022 between Russia and Ukraine under the mediation of the United Nations (UN) and Turkey. An option has also been kept to extend the deadline of this agreement. This agreement has been extended thrice. It was last extended till July 2023.

Significance of the Black Sea Grain Agreement –
- **Reducing global food insecurity:** Ukraine is one of the largest exporters of wheat, corn, rapeseed, sunflower seeds and sunflower oil globally.
- **Food inflation:** This facilitates Russia's export of fertilizers, which is necessary to ensure higher crop yields in the future and lower food prices.
- It also helps to deal with rising food prices due to disruptions in the supply chain.

Issues related to the agreement –
- According to UN data, only 3% of exports under the Black Sea Agreement went to low-income countries, while high-income countries received about 44% of exports.
- Russia has complaints with Western countries because of the challenges faced by its own exports.

18. 125th birth anniversary of freedom fighter Alluri Sitarama Raju

Recently, the President of the country attended the closing ceremony of the 125th birth anniversary of Alluri Sitarama Raju.
Alluri Sitarama Raju was born on 4 July 1897 in Mogallu village in West Godavari district of Madras Presidency. He is also known as 'Manyam Veerudu'. Its literal meaning is – 'the hero of the forests'.
Initially under the influence of Gandhiji's non-cooperation movement, he inspired tribals to seek justice in local panchayat courts and boycott colonial courts.
In August 1922, he started the Rampa Rebellion or Manyam Rebellion (1922–1924) in the Eastern Ghats of Andhra Pradesh against the British.

Reasons for rebellion –
- The Muttadars were the de facto rulers of the region. Their socio-economic status was challenged by forcibly bringing them under the colonial framework.
- 'Poddu farming' (shifting farming) was declared illegal under the new colonial rule.
- The colonial rule had also taken away the rights of the local people to collect minor forest produce.

- To evict these tribals from the forest, the British enacted the Madras Forest Act, 1882. Due to this, there was a restriction on the free movement of tribals.
- The tribals were forced into Vetti, that is, unpaid labour.
- Alluri surrendered to stop the atrocities being committed on the tribals by the British, and was hanged in 1924.

19. Taipei Economic and Cultural Center to come up in Mumbai

Recently Taiwan has announced the establishment of new "Taipei Economic and Cultural Center" (TECC) in Mumbai.
TECC will help expand mutually beneficial trade and investment opportunities between Taiwan and India.
Due to India's 'One China Policy', formal diplomatic relations have not been established between India and Taiwan. In the absence of the Embassy, TECC will act as the representative of Taiwan's interests in India.
The establishment of TECC is part of Taiwan's 'China-plus-one strategy'. It aims to encourage businesses to expand their operations outside China while maintaining their presence in China.

India-Taiwan Relations
- Bilateral trade between the two countries was projected to increase nearly six times from $1.19 billion in 2001 to about $7.7 billion in 2021.
- Under its New Southbound Policy, Taiwan will promote exchanges and cooperation in science and technology, education, culture and people-to-people ties between Taiwan and India.

Importance of Taiwan for India –
- Taiwan produces about 70 percent of the world's semiconductors and more than 90 percent of the most advanced chips needed for almost all electronic equipment.
- India has wider interests in maintaining peace and status quo in the Taiwan Strait. The Taiwan Strait is a major point of trade for India.
- Taiwan can play an important role in India's industrial upgrading and hi-tech development.
- Taiwan plays an important role in balancing China economically and technologically.

20. Scheme for Expansion and Modernization of Fire Services in the States

Recently, the Union Home Ministry has launched a scheme for expansion and modernization of fire services in the states.

The scheme has been launched from the allocation earmarked for the funding window for preparedness and capacity building under the National Disaster Response Fund (NDRF).

There has been a change in India's approach towards disaster management in recent years. Earlier disaster management focused on post-disaster relief operations and response, but now the focus has shifted to disaster risk reduction.

The focus is now on early warning systems, prevention, mitigation and preparedness at the grassroots level. The scheme is based on the recommendations of the 15th Finance Commission. The commission has recommended allocation of 12.5% each to the NDRF and the State Disaster Response Fund (SDRF) for the funding window for preparedness and capacity building.

Scheme Features:
- The objective of the scheme is to expand and modernize the fire services in the states.
- Out of the total corpus of NDRF, an amount of Rs 5,000 crore has been earmarked to give priority to expansion and modernization of fire services.
- A provision of Rs 500 crore has been made as incentive to the states based on their need for legal and infrastructure reforms.
- To avail the funds allocated under this scheme, the respective State Governments will have to provide 25 per cent of the total project cost from their budgetary resources.
- The North Eastern and Himalayan (NEH) states will have to contribute an amount of 10 per cent from their budgetary resources.

National Disaster Response Fund (NDRF):
- With the enactment of the Disaster Management Act in the year 2005, the National Disaster Contingency Fund (NCCF) was renamed as the National Disaster Response Fund (NDRF).
- It is defined in section 46 of the Disaster Management Act, 2005 (DM Act).
- It is kept under "Interest Free Reserve Fund" in the "Public Account" of the Government of India.
- Public Accounts: It was constituted under Article 266(2) of the Constitution. It accounts for the flow of transactions where the government is acting only as a banker. For example provident fund, small savings etc.

21. Aravali Jungle Safari

Aravali Safari Park will be developed in three phases, and the first phase is expected to be completed in about two years.

Key Points:
- The Jungle Safari will be set up on 10,000 acres of land in Gurgaon and Nuh districts of Haryana. The aim of this safari is to conserve the local/native flora and fauna. To improve the overall soil water regime to preserve and enrich the ecology.
- Groundwater recharge, wildlife habitat improvement, local weather, and development as a sink for CO_2 and other pollutants. Conservation of the natural heritage of the region and promotion of environmental awareness among the people. All types of animals and birds will be included in the safari.
- It will be developed as a center for conservation of migratory birds and maintenance and protection of endangered animals. Aravalli Safari would be a suitable habitat for the tiger. Species like chital, sambar, deer, blue bull, barking deer and blackbuck are planned to be kept in the safari.
- World's largest such safari is in Sharjah, which is spread over 800 hectares and is home to 120 species. This project will be the largest such project in the world. The project proposes to set up a large herpetarium, an aviary, a 'Big Cat' area and nature tourism area.

22. India-EU Free Trade Agreement talks

Recently India and the European Union have postponed the Free Trade Agreement (FTA) talks due to differences on the Rule of Origin (RoO) norms.
RoO is the set criteria for determining the country of origin of a product imported into a country.
Under this, the country which has signed an FTA with India, cannot launch the goods of any third country in the Indian market only by putting its own label. He has to add a specified value to that product in order to export it to India.
There are no specific rules governing the determination of the country of origin of goods in the General Agreement on Tariffs and Trade (GATT). Also, each contracting party is free to determine its own substantive rules.

RoO is used for:

- To implement commercial policy measures and instruments such as anti-dumping duties and safeguard measures;
- To determine whether imported products will receive Most Favored Nation (MFN) status or preferential status;
- Labeling and use for marketing requirements and for government procurement etc.

Earlier India had notified the 'Customs (Administration of Rules of Origin under Trade Agreements) Rules, 2020' (CAROTAR). Its purpose is to prevent tariff evasion by misusing FTA by exporting goods from another country to India.

23. Digital Personal Data Protection Bill 2023 approved

According to a recent report, the Central Government has approved the "Digital Personal Data Protection (DPDP) Bill".

The Digital Personal Data Protection (DPDP) Bill is a proposed legislation. It sets out the rights and duties of citizens with respect to personal data.

It also sets out the obligations of the data fiduciary to legally use the stored data.

The process of drafting such a bill began in 2017 with the decision in the KS Puttaswamy vs Union of India case.

In this decision, the Supreme Court had said that 'right to privacy' is a fundamental right under life and personal liberty.

Data Fiduciary: The organization (individual, company, firm, state etc.) that determines the purpose and manner of processing personal data of the individual is called data fiduciary.

The latest draft of DPDP was released in November 2022. The draft focuses on the following seven principles of the data economy-

1. lawful and fair collection and use of personal data;
2. the personal data is used for the purpose for which it was collected;
3. Data minimization – the collection of only as much data as is necessary to fulfill a particular purpose;
4. accuracy of personal data;
5. Permission to store data only for the mandatory period
6. Appropriate security measures must be taken to ensure that unauthorized collection or processing of data does not take place; And
7. Accountability of the person deciding the purpose and means of data processing must be ensured.

22

Need for a law on data protection:
- The incidents of cyber attacks and leakage of sensitive data are on the rise.
- Publicly available personal data needs to be regulated.
- Information is moving across national boundaries in a big way.

24. Hul Diwas

Recently, the Prime Minister greeted "Hul Diwas" on June 30, remembering the sacrifices of tribals in the fight against the British colonial rule.

Santhal rebellion or 'Hul' meaning "revolution" (started in 1855, two years before the 1857 rebellion).

It was an "organised war against colonialism" led by the Santhals against myriad forms of oppression by the British and their allies.

Led by two brothers Sidhu and Kanhu, the rebellion saw the participation of more than 32 castes and communities.

The rebellion took place in the lush green Damin-i-Koh region. 'Damin-i-Koh' means 'the edge of the hills'. This area falls in present-day Jharkhand, specifically around the Rajmahal hills of Sahibganj district in eastern Jharkhand.

Every year, the state of Jharkhand celebrates 30 June as 'Hul Diwas', marking the beginning of the rebellion, although some historical accounts place it in the first week of July.

25. The Multi-State Co-operative Societies (Amendment) Bill, 2022

Recently, the Lok Sabha has passed the Multi-State Cooperative Societies (Amendment) Bill, 2022. The Bill seeks to amend the Multi-State Co-operative Societies Act, 2002.
The main objective of this bill is to strengthen governance, enhance transparency, fix accountability and improve electoral processes in multi-state cooperatives.

Key provisions of the amendment bill-
- **Co-operative Election Authority (CEA):** The Central Government will set up the Co-operative Election Authority (CEA) to conduct, supervise, direct and control the election process of Multi-State Co-operative Societies (MSCS).
- **Integration of Cooperative Societies:** The bill introduced allows state cooperative societies to merge with existing MSCS.

- At least two-thirds of the members of the co-operative society present and voting at a general meeting shall pass a resolution permitting such merger.
- **Fund for Sick Cooperative Societies:** Cooperative Rehabilitation, Reconstruction and Development Fund (CRRDF) has been started for revival of sick cooperative societies. MSCS which are in profit for the last three financial years will fund the fund.
- Restrictions on redemption of government shareholding: No shares held by the Central and State Governments in MSCS can be redeemed without their prior approval.
- **Redressal of Grievances:** The Center is made in respect of the members of MSCS. Appoint one or more Cooperative Ombudsman in the territorial jurisdiction to inquire into the complaints and complete the process within 3 months.

Cooperative Movement in India:
- Cooperative movement in India is about 115 years old, and this movement has given many important enterprises to the country which are giving employment to lakhs of people today, like Amul, Kribhco, IFFCO.
- Co-operative societies are a state subject under the Constitution, that is, they come under the jurisdiction of state governments, but there are many societies whose members and areas of operation are spread over more than one state. For example, most sugar mills in districts on the Karnataka-Maharashtra border buy sugarcane from both the states.
- The current law – the Multi-State Co-operative Societies Act (MSCS) 2002 – was enacted by the then Atal Bihari Vajpayee government to manage multi-state co-operative societies.
- Cooperative societies of more than one state are registered under the MSCS Act. Their board of directors has representation from all the states where they operate.
- Earlier, Co-operation was a department under the Ministry of Agriculture. However, on 6 July 2021, the government formed a separate cooperative ministry and Amit Shah became the country's first cooperative minister. Soon after taking charge of the ministry, he announced a new National Cooperative Policy.

Co-operative Societies in the Constitution:
- The Constitution (97th Amendment Act), 2011 makes provisions for cooperative societies in India.
- The amendment provided legal status and protection to cooperatives. Part IXB was added to the Constitution through this amendment.

26. PM-DevINE Scheme

Recently, the Union Ministry of Development of North Eastern Region has restarted the Prime Minister's Development Initiative for North Eastern Region (PM-DevINE).

PM-DevINE:
- PM-DevINE Center for the Development of North Eastern Region is a sponsored scheme, which is 100% funded by the Central Government.
- It was launched as part of the Union Budget 2022-23. The cabinet has approved the PM-Divine scheme on October 12, 2022.
- The scheme will be implemented by the Ministry of Development of North Eastern Region.

Objectives of PM-DevINE:
- **Infrastructure Development:** As per PM GatiShakti, PM-Divine aims to finance infrastructure projects in an integrated manner while ensuring seamless connectivity and access to the entire North Eastern region.
- **Supporting Social Development Projects:** Recognizing the unique needs and challenges of the North East region, the scheme seeks to support social development projects that address critical issues.
- **Empowering youth and women:** PM-DevINE seeks to generate livelihood opportunities by specifically targeting the youth and women of NER so that they can become active partners in the development and progress of the region.
- **Budget allocation:** PM-DevINE was allocated Rs 1500 crore in the Union Budget 2022-23.
- The scheme has a total outlay of Rs 6,600 crore over a period of 4 years from 2022-23 to 2025-26, which aligns with the remaining years of the 15th Finance Commission term.
- A state-wise and project-wise list of projects sanctioned during the financial year 2022-23 has been prepared in which each project has been designed to meet the specific needs of the respective states.

27. 8th India-Australia Defence Policy Talks held in Canberra

Recently the 8th meeting of the India-Australia Defense Policy Dialogue (DPT) has been held in Canberra, Australia.

8th DPT reviewed the results of 1st 2+2 to be held in 2021. Both sides have agreed to finalize the Hydrography Agreement at the earliest.

The meeting was held to identify ways to strengthen the partnership in co-development and co-production of equipment between the two countries. During this, both sides have expressed their commitment to fully implement the Comprehensive Strategic Partnership.

The Indian side highlighted the potential of the Indian defense industry with the capability and competence to collaborate with the Australian Armed Forces in shipbuilding and maintenance plans

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India-Australia Defense Relations:
- India and Australia have upgraded their bilateral relations from 'Strategic Partnership' in 2009 to 'Comprehensive Strategic Partnership' in 2020.
- The two countries have expanded their strategic partnership with a focus on maritime security, counter-terrorism and regional stability in the Indo-Pacific region.
- **Initiation of Strategic Dialogue:** In the year 2020, Australia and India elevated their Secretaries 2+2 dialogue (Defence and Foreign Affairs) to the Ministerial level. The ministers now meet once every two years to discuss progress made under the Comprehensive Strategic Partnership.
- **Malabar Exercise:** In 2020, Australia participated in Malabar naval exercise thus joining India, US and Japan.
- The exercise brought together four regional defense partners and democracies, symbolizing a collective resolve to support an open and prosperous Indo-Pacific.
- **AUSINDEX:** Important bilateral exercise called AUSINDEX is conducted between Royal Australian Navy and Indian Navy.
- **Exercise Pitch Black:** An important start to the defense meet was when, for the first time, the Indian Air Force joined Exercise Pitch Black in Darwin in 2018. Australia's multidimensional exercise involves air forces from a number of Australian allies and partner countries.
- Mutual Logistics Support Arrangement and Defense Science and Technology Implementation Arrangement: India and Australia achieved Mutual Logistics Support Arrangement in 2020.
- The agreement enables more intelligent operational cooperation, enabling increasingly complex military engagements and enhanced collective responsivity to regional humanitarian disasters.
- **Shared Military Platform:** The Indian and Australian armies have become increasingly inter-operable due to the increasing number of shared media, increasing opportunities for shared training.

26

- **Exchange of military officers for training:** India shapes its relationship with its defense forces through regular personnel and training exchanges, such as short specialist courses and long-term posts.
- Every year, India and Australia send officers to attend each other's premier military educational institutions.

28. Inauguration of 'Bharat Mandapam'

Recently Prime Minister Shri Narendra Modi inaugurated the International Exhibition-cum-Convention Center (IECC) complex at Pragati Maidan in New Delhi. Along with this, the Prime Minister also unveiled G-20 coins and G-20 stamps.
The complex has been named 'Bharat Mandapam', an invocation of India's potential and the country's new energy.

The inspiration behind the name 'Bharat Mandapam' is the 'Anubhava Mandapam' of Lord Basaveshwara. The Anubhav Mandapam represents the tradition of discussion and expression. The India Pavilion will help exhibitors from across the world and become a vehicle for conference tourism in India.

The Bharat Mandapam will serve as a platform to showcase the capabilities of the startups of the country. It will also witness performances by artistes and actors and provide a platform to showcase the efforts of handicraft artisans.
The convention center complex is fully equipped with 5-G enabled Wi-Fi, as well as 10G intranet connectivity, state-of-the-art interpretation rooms with facilities for 16 different languages. State-of-the-art AV system with massive video wall is also fitted.

BASAVESHWARA

- Guru Basaveshwara (1134–1168) was an Indian philosopher, social reformer and leader who attempted to create a casteless society and fought against caste and religious discrimination.
- Basavanna Jayanti, an annual event, is celebrated to commemorate the birth of Saint Basavanna (Lord Basaveshwara).
- Guru Basaveshwara was born in 1131 AD at a place called Bagewadi (in the undivided Bijapur district of Karnataka).
- Guru Basaveshwara is also considered the founder of the Lingayat sect.

29. Jharkhand issues PESA draft rules for consultations

Recently Jharkhand government has released draft rules of Panchayat Provisions (Extension to Scheduled Areas) Act (PESA Act) for public consultation.
After discussion on the draft of 'PESA Act', this act can be implemented in Jharkhand.
The draft rules of the PESA Act provide the following powers to the Gram Sabhas in the Scheduled Areas-
* It provides the right to resolve their traditional and family disputes,
* To hear special cases under the Indian Penal Code (IPC) and to maintain peace and order in accordance with the principles of the Constitution.

PESA Act
* The PESA Act was enacted in the year 1996 "to extend the provisions of Part IX of the Constitution relating to Panchayats to the Scheduled Areas".
* Articles 243-243ZT of the Constitution, contain provisions relating to municipalities and co-operative societies. These articles are given in Part IX of the Constitution.
* Under this Act, the Scheduled Areas are those referred to in section 244(1). The Act states that the provisions of the Fifth Schedule shall apply to Scheduled Areas and Scheduled Tribes in the States other than Assam, Meghalaya, Tripura and Mizoram.
* It aims to extend Part IX of the Constitution relating to Panchayats to the Fifth Schedule areas with certain modifications and exemptions.
* The State Legislature has been empowered to make laws in this regard under the PESA Act. Presently 10 states have Fifth Schedule areas. These states are Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana.
* Out of these ten states, only eight states (except Jharkhand and Odisha) have framed and notified State PESA Rules under State Panchayati Raj Acts.

Salient Features of PESA Act:
* It empowers tribal communities to govern through their own self-governance systems. Also, it has recognized their traditional rights over natural resources.
* Under this, Gram Sabhas have been given an important role in approving development plans and controlling all social sector and local plans.
* It provides some special powers to the Gram Sabhas such as identification of

beneficiaries of welfare schemes, mandatory consultation in matters of land acquisition, management of small water bodies and ownership of minor forest produce etc.

30. PM launched Sulphur coated 'Urea Gold'

Recently the Prime Minister of India has launched a new variety of urea fertilizer 'Urea Gold' in Sikar, Rajasthan.

It is a new type of sulfur coated so it is also called sulfur urea. This urea is being manufactured by Rashtriya Chemicals and Fertilizer Limited (RCF) Company.

Benefits: By using this, you will have to give less fertilizer in the fields and the quality of the crop will also increase. Also, a major advantage of its use is that there will be no sulfur deficiency in the soil. Urea Gold has advantages over existing neem-coated ureas in terms of both economic viability and efficiency.

How Urea Gold Better Than Others:
- Sulphur-coated urea facilitates the gradual release of nitrogen, thereby increasing its availability and uptake by crops.
- The addition of humic acid to Urea Gold further extends its shelf life as a fertilizer.
- This product not only replaces conventional urea consumption but also reduces overall fertilizer usage.
- As per reports, 15 kg of Urea Gold provides benefits equivalent to 20 kg of conventional urea, making it a more efficient and cost-effective option for farmers.

Neem Coated Urea:

- Urea is a commonly used nitrogen-based fertilizer, which provides plants with essential nutrients to promote healthy growth.
- Neem-coated urea is a special form of urea fertilizer that has been coated with neem oil.
- Neem coating on urea slows down the release of nitrogen in the soil. This controlled release helps reduce nitrogen leaching and volatilization, thereby improving nitrogen use efficiency by plants.
- This will reduce the quantity of urea per acre and consequently reduce the input cost of the farmers.
- Nitrous oxide emissions have also reduced significantly.

- Neem oil obtained from the neem tree (Azadirachta indica) has natural insecticidal properties.

31. India's Neighbourhood First Policy

Recently the Parliamentary Committee on External Affairs has released its report on 'Neighbourhood First Policy'.

It may be noted that the concept of Neighborhood First Policy was conceptualized around the year 2008. It is a dynamic policy, which aims to adopt a consultative, non-reciprocal (selfless) and result-oriented approach to strengthen relations with neighboring countries.

The countries of Afghanistan, Bangladesh, Bhutan, Nepal, Maldives, Myanmar, Pakistan and Sri Lanka have been included under the Neighborhood First policy.

Under this policy, India uses regional forums like SAARC, BIMSTEC, Bangladesh Bhutan – India – Nepal (BBIN) to maintain dialogue and communication with its neighboring countries.

Recommendations made in the report:
- A common platform should be established to deal with terrorism.
- There is a need to establish coordination between 'Neighbourhood First Policy' and 'Act East Policy' for the development of the North Eastern region.
- There is a need to set up a cell on relations with neighboring countries. It will identify specific initiatives that can be taken in this direction by individual Ministries and Departments.
- Development projects should be completed within a time frame by strengthening Joint Project Monitoring Committees and inspection mechanism.

Challenges before the Neighborhood First Policy:
- India often faces threats from neighboring countries emanating from cross-border terrorism, illegal migration, trafficking, drug and arms smuggling, etc.
- The delay in the implementation of development projects creates a hindrance in relations.
- China's Belt and Road Initiative and America's Indo-Pacific vision and competition among these countries also present challenges. This is because India's neighboring countries are also in their center.

30

- There is limited exchange at the parliamentary level with neighboring countries.
- Lack of infrastructure in border areas, especially in the North Eastern Region (NER), is also affecting connectivity with neighboring countries.

Various initiatives taken under the policy:
- Geographical connectivity: Agreements have been signed on the use of Chabahar port (Iran), Kaladan project (Myanmar) and Chittagong and Mongla ports (Bangladesh).
- Energy Connectivity: Grid interconnection with Nepal, Bhutan and Bangladesh; establishment of Maitree Super Thermal Power Project in Bangladesh; Establishment of Mangdechhu Hydroelectric Project in Bhutan are some of the prominent examples of energy connectivity.
- Trade connectivity: Examples are exclusive market access; financial help; Establishment of Customs Stations on the border with Bangladesh, providing Line of Credit to Sri Lanka etc.
- Humanitarian Assistance: India has been providing humanitarian assistance to neighboring countries by providing Early Warning System (EWS) services and disaster assistance.
- Some examples are providing Tsunami EWS, post earthquake relief assistance to Nepal, assistance during COVID-19 etc.