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# **Current Affairs for UPSC & State PCS**

***JUNE 2023***

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## 1. NITI Aayog to hold 8<sup>th</sup> Governing Council Meeting

Recently the Prime Minister of India chaired the 8th meeting of the Governing Council of NITI Aayog. It was represented by Chief Ministers/Lieutenant Governors of 19 States and 6 Union Territories.

### Highlights of the meeting:

**Theme:** Developed India @ 2047: Role of Team India.

### Prime Minister's address:

- ⌚ To realize the objective of “Developed India” in the year 2047, the Center and the States will have to work as “Team India”.
- ⌚ NITI Aayog can play an important role in developing its strategy for the next 25 years and aligning it with the national development agenda and helping the states.
- ⌚ States and Union Territories were urged to work with the Commission so that the country moves towards achieving its vision of “Amrit Kaal”.
- ⌚ Stressed on cooperation between the States and the Center to promote “Shri Anna” in the International Year of Millets.
- ⌚ To make India a global hub for ‘Shri Anna’ (nutritional grain/millet), the ‘Indian Institute of Millet Research’ will be supported as a center of excellence.
- ⌚ They also discussed the need to work towards water conservation through the “Amrit Sarovar” programme.

### NITI Aayog Governing Council:

- ⌚ It is a credible nodal body for developing a shared vision of national priorities and strategies with the active participation of States and Union Territories.
- ⌚ It is a forum to discuss inter-regional, inter-departmental and federal issues.

### NITI Aayog's Annual Health Index 2020-21

Kerala, Tamil Nadu and Telangana have emerged as top performers among ‘large states’ in NITI Aayog's annual ‘Health Index’ for the COVID era for 2020-21.



## Key Features of the Index:

- ⌚ **Large states on the basis of overall performance:** Among the 19 'large states', Kerala, Tamil Nadu and Telangana have secured the first, second and third places respectively in terms of overall performance. Bihar (19th), Uttar Pradesh (18th) and Madhya Pradesh (17th) rank last in the list.
- ⌚ **Small States:** Among the eight small states, Tripura recorded the best overall performance, followed by Sikkim and Goa; Arunachal Pradesh (6th), Nagaland (7th) and Manipur (8th) rank last in the list.
- ⌚ **Union Territories:** Among the eight Union Territories, Lakshadweep has been ranked as the top performer in terms of overall performance, while Delhi has been ranked the last.
- ⌚ **On the basis of incremental performance:** Rajasthan, Uttarakhand and Odisha have emerged as the top three performers in the year 2020-21 as compared to their performance in the year 2019-20.

## 2. Annual Health Index of NITI Aayog

In 2017, the National Institution for Transforming India, in collaboration with the Ministry of Health and Family Welfare (MoHFW), and the World Bank, launched an annual Health Index to track the overall performance and incremental performance of all states and union territories.

- ⌚ **Objective:** The objective of the annual health index is to track and rank progress on health outcomes and performance of health systems, and develop a healthy competition and encourage cross learning among states and union territories.
- ⌚ **Parameters:** The Health Index assesses states and union territories on two parameters – incremental performance (year-on-year progress) and overall performance.
- ⌚ **Category:** The ranking is done under three categories: Large States, Small States and Union Territories to ensure comparison between similar entities.

## Structure:

- ⌚ The Health Index is a composite score that reflects the achievements and incremental improvements of states and union territories on 24 indicators in three areas: health outcomes, governance and information, and key inputs and processes.
- ⌚ Each sector is weighted on the basis of its priority with higher scores for the outcome indicators.
- ⌚ The 'health outcomes' include indicators such as neonatal mortality rate, total fertility rate, sex ratio at birth, immunization, proportion of institutional deliveries, notification rate of total tuberculosis cases and proportion of people living with HIV on antiretroviral therapy.
- ⌚ The 'governance and information' sector includes indicators such as the proportion of institutional distribution, the average tenure (in months) of the three key positions at the state



level, the average tenure of the Chief Medical Officer (in months) and the days taken to transfer funds.

- ⌚ 'Key Inputs/Processes' is a measure of available health infrastructure, which includes districts with functional 24X7 primary health care centres, functional cardiac care units and the proportion of vacancies in healthcare provider positions.

### 3. Reduction in stunting : but wasting, obesity are concerns

According to the Joint child malnutrition estimates released by UNICEF, WHO and the World Bank, In line with global and regional trends, stunting has declined in India, recording 1.6 million fewer stunted children under the age of five in 2022 than in 2012. However, low weight and rising obesity levels still remain a matter of concern.

- ⌚ Stunting among children under the age of five in India is set to fall from 41.6% in 2012 to 31.7% in 2022, reducing the number from 5.2 million to 3.6 million.
- ⌚ With this, India's share in the global figure of stunting in children decreased from 30% to 25% in the last decade.
- ⌚ The overall prevalence of frailty in 2022 was 18.7% in India, with a share of 49% of the global incidence.
- ⌚ The prevalence of obesity increased marginally over a decade from 2.2% in 2012 to 2.8% in 2022, increasing from 27.5 lakh to 31.8 lakh, giving India a global share of 8.8%.
- ⌚ There was no improvement on the weight issue worldwide, as its prevalence rate increased from 5.5% to 5.6%.
- ⌚ Joint child malnutrition estimates report has made insufficient progress to reach the 2025 World Health Organization global nutrition goals and the 2030 Sustainable Development Goal-2 goals. Also only a third of all countries are 'on track' to halve the number of children afflicted.

#### According to NFHS:

- ⌚ The decline in stunting in India is commensurate with National Family Health Survey (NFHS)-5 (2019-2021) data which estimated its prevalence at 35.5% as compared to 38% in NFHS-4 (2016) and 48% in NFHS-3 (2006).

#### 3 Key symptoms of malnutrition according to UNICEF and WB

- ⌚ **Stunting** - If the height of a child remains less in proportion to its age, then it is called dwarfism.
- ⌚ **Wasting** - If a child's BMI is low in proportion to his height, then it is called a condition of wasting.
- ⌚ **Underweight** - Children with low weight in proportion to their age are called 'underweight'.



### Current initiatives of the government to deal with malnutrition-

- ⌚ National Nutrition Mission
- ⌚ Anemia Free India Campaign
- ⌚ Mid-day Meal (MDM) Scheme
- ⌚ National Food Security Act (NFSA), 2013
- ⌚ Integrated Child Development Services (ICDS) Scheme

### 4. Spear Phishing

According to a recent report, 53% of organizations studied in India were victims of spear phishing in 2022.

#### About Spear Phishing:

- ⌚ It is an email or electronic communication scam targeted at a specific person, organization or business.
- ⌚ This is often a targeted attempt to steal sensitive information such as account credentials or financial information from a specific victim for malicious reasons.
- ⌚ This is done by obtaining information about the victim's personal details such as their friends, hometown, employer, places they frequent, and what they have purchased online recently.

#### How does it work?

- ⌚ Spear phishing emails use social engineering techniques to urge the victim to click on a malicious link or attachment.
- ⌚ Additionally, the email will clearly ask the recipient to respond immediately, such as transferring a specific amount of money or sending personal data such as banking passwords.
- ⌚ Such emails are written in an overly familiar tone, referring to personal information about the recipient.
- ⌚ Thereby, victims mistakenly believe that they know the sender and respond to the request.
- ⌚ This gives the attacker access to the victim's network and attempts to steal sensitive information.
- ⌚ It is the most successful method of obtaining confidential information on the Internet, accounting for 91% of attacks.



## 5. CBDT notifies E-appeals scheme 2023

Recently the Central Board of Direct Taxes (CBDT) has launched the “e-appeal” scheme announced in the budget to reduce the pendency of appeals related to tax deducted at source and tax collection at source.

### About E-Appeal Scheme

- ⌚ Under the 'e-Appeal Scheme, 2023', aggrieved assesseees can appeal against certain orders passed by an Income-tax Assessing Officer not below the rank of JCIT before the Joint Commissioner/JCIT (Appeals).
- ⌚ The JCIT (Appeals) shall have income tax authorities, ministerial staff, executives or consultants to assist in disposal of appeals, as may be deemed necessary by the Board.
- ⌚ The internal communication between the JCIT (Appeals) and the appellant as well as shall be through electronic mode. No person shall be required to appear personally or through an authorized representative in connection with any proceeding under this Scheme.
- ⌚ The scheme also provides for personal hearing through video conferencing in appeal cases.
- ⌚ Explain that a new section 246 has been added to Chapter XX of the Income Tax Act by the Finance Act, 2023.
- ⌚ Finance Minister Nirmala Sitharaman in the Union Budget 2023-24 had proposed to deploy about 100 Joint Commissioners for disposal of small appeals to reduce the pendency of appeals at the Commissionerate level.

## 6. Purana Qila Excavations Reveal Pre-Mauryan Era Settlement

Recently, new excavations at the Purana Qila site in Delhi have yielded evidence of the pre-Mauryan period. The ongoing excavations at the Purana Qila aim at establishing a complete historical chronology of the site.

### Major antiquities from excavation:

- ⌚ A stone idol of Lord Vaikuntha Vishnu, a terracotta plaque of Gaja Lakshmi, a stone idol of Lord Ganesha, terracotta figurines of humans and animals, beads of different stones, needles made of bone, etc.
- ⌚ Earlier excavations had found evidence of human habitation and continuity of their activities for 2500 years.
- ⌚ Excavations so far have revealed nine cultural levels from Purana Quila. These levels represent different historical periods.



- ⌚ These include Pre-Maurya, Mauryan, Sunga, Kushan, Gupta, Post-Gupta, Rajput, Sultanate and Mughal periods.
- ⌚ The Purana Qila was built in the 16th century by the Mughal emperor Humayun as part of his new city of Dinpanah.
- ⌚ Apart from archaeology, literary sources like Ain-i-Akbari of Abul Fazl (16th century) also mention the fact that this fort was built at a place called Indraprastha.

### Architectural Features of the Old Fort Complex:

- ⌚ **Qila-i-Kuhna Mosque:** It was built by Sher Shah. It represents a transitional stage between the architecture of the Lodhis and that of the Mughals.
- ⌚ **Sher Mandal:** It was built by Sher Shah. It is an octagonal structure made of red sandstone. It is decorated with a mosaic of white and black marble. Humayun made it a library. He died after falling from the stairs of the same building.
- ⌚ **Other Structures:** A baoli and a hammam (bath) are also present to manage the water supply. Lal Darwaza and Khairul Manzil are also considered to be part of this complex. It has three majestic gates: Bada Darwaza, Humayun Darwaza and Talaki Darwaza. There is also a wide moat connected to the river Yamuna

### 7. ADB launches country partnership strategy for climate-resilient growth

Recently the Asian Development Bank (ADB) has launched a new “Country Partnership Strategy (CPS)” for India for the period 2023-27.

- ⌚ ADB to accelerate structural transformation and job creation in India over the period 2023-27; Will focus on promoting environment-friendly growth and strengthening social and economic inclusion.
- ⌚ ADB has committed \$52.6 billion in public sector loans, grants and technical assistance projects in India and \$8 billion in private sector investment by December 2022.

### Key Features of ADB's Country Partnership Strategy (CSP)

1. Structural changes and employment generation will be expedited. This target will be achieved through convergence between development programs on Logistics-Industry-City-Skills and by providing support to MSMEs.
2. Environment-friendly growth will be encouraged.
3. Social and economic inclusion will be strengthened.



### Cross-Cutting Themes:

- ⌚ Domestic resource mobilization;
- ⌚ Gender equality and social inclusion;
- ⌚ Support digitalization and innovation-friendly systems; And
- ⌚ Regional cooperation and integration through the South Asia Subregional Economic Cooperation (SASEC).

### 8. South Africa mulls options on ICC arrest warrant

With Russian President Vladimir Putin likely to attend the BRICS summit, host country South Africa is considering legal options.

- ⌚ The International Criminal Court (ICC) has found Putin guilty of war crimes, and an arrest warrant has been issued against him.
- ⌚ South Africa is a member of the ICC. In such a situation, on the presence of the Russian President on his land, he would theoretically have to arrest him.
- ⌚ States parties to the Rome Statute have a legal obligation to cooperate with the ICC.

### International Criminal Court (ICC)

- ⌚ Its headquarter is located in The Hague (Netherlands).
- ⌚ It is an international court to investigate and prosecute persons accused of serious international crimes such as genocide, crimes against humanity, war crimes and aggression.
- ⌚ It was established in 1998 by the Rome Statute of the International Criminal Court.
- ⌚ It can only prosecute crimes committed after July 1, 2002, as the Rome Statute came into force from that day.
- ⌚ ICC does not have its own police force. In such a situation, the cooperation of different countries becomes necessary for the arrest of the accused and their surrender. 123 countries are parties to the Rome Statute.
- ⌚ **Countries that have not yet signed the treaty:** India, China, Iraq, North Korea, Saudi Arabia, Turkey etc.
- ⌚ **Countries that have signed the treaty but not ratified it:** Egypt, Iran, Israel, Russia, United States, etc.

### How are cases brought before the ICC?

- ⌚ State Parties may refer any case within their sovereign territory to the Court for prosecution.
- ⌚ The UN Security Council can refer a matter to the ICC. In such a situation, it becomes necessary for all the member countries of the United Nations to cooperate, whether they are parties to the Rome Statute or not.
- ⌚ The prosecutor may open an investigation into any case in that member state.





## 9. Lateral entry appointment of senior government officials

Recently the central government will appoint senior officers through lateral entry mode.

- ⌚ The Department of Personnel and Training, Government of India has asked the Union Public Service Commission to recruit senior officers from the private sector through lateral entry.
- ⌚ Lateral entry refers to the appointment of experts from the private sector in government departments.
- ⌚ The process of appointment through lateral entry started in 2018. Now the fourth lateral entry is starting.
- ⌚ The Surinder Nath Committee (2003), the Hota Committee (2004), and the Second Administrative Reforms Commission (2008) also supported the idea of appointing senior officers through lateral entry.
- ⌚ NITI Aayog in its three-year action agenda (2017-2020) had also recommended the inclusion of such personnel at middle and senior management levels in the central government.

### Arguments in favor of lateral entry:

- ⌚ It makes fresh talent as well as expert personnel available to the government, thus serving a dual purpose.
- ⌚ Private sector experts have the opportunity to work alongside permanent civil servants who have worked in a range of sectors. This gives better results in administration.
- ⌚ Currently, the complexity of the governance system is increasing due to factors such as digitization of governance, increase in financial frauds and cyber crimes. Lateral entry will help in dealing with this complication.
- ⌚ The appointment of experts through lateral entry will increase the spirit of competition within the governance and thereby increase the efficiency of civil servants.

### Arguments Against Lateral Entry:

- ⌚ Difficulty arises in adjusting it with the work culture of bureaucracy.
- ⌚ Due to the short service period, there is a problem in fixing accountability.
- ⌚ People who come to civil service through lateral entry have less experience of working in the field.



## 10. India's manufacturing PMI hits 31 month high

Recently, the S&P Global India Manufacturing Purchasing Managers' Index (PMI) touched a 31-month high of 58.7 in May.

- ⌚ The orders are growing fastest on the high demand for Indian products both domestically and internationally, and the market is improving.
- ⌚ The PMI data comes a day after data showed that India's GDP grew at 6.1% in the January-March 2023 quarter, raising the growth forecast for the full year 2022-23 to 7.2%.

### Purchasing Managers Index (PMI)

- ⌚ It is an index of the prevailing direction of economic trends in the manufacturing and service sectors.
- ⌚ It is an economic indicator, which is released after monthly surveys of various companies.
- ⌚ It provides information about current and future business conditions to company decision makers, analysts and investors.

### Significance:

- ⌚ It provides a reliable figure of how an economy is performing as a whole.
- ⌚ Central banks also use PMI to decide on interest rates.
- ⌚ In addition to affecting equity market volatility, PMI releases also affect bond and currency markets. Suppliers can decide on prices based on PMI fluctuations.
- ⌚ The PMI gives an idea about the direction of the economy, and helps economists forecast manufacturing activity in the country.
- ⌚ Manufacturers and suppliers use the index to decide their production needs based on new orders in the coming months.
- ⌚ This index also helps investors who want to invest in stock markets, as it helps in assessing the economic health of the country.

## 11. Law Commission says retain sedition law, increase jail term

Recently, the Law Commission of India has recommended the retention of the Sedition law in the country.

The Law Commission in its 279th Report has said that Section 124A relating to sedition law needs to be retained in the Indian Penal Code with some amendments.



### Law Commission recommendations on sedition law -

- ⌚ Sedition being a colonial law cannot be a valid ground to repeal it.
- ⌚ Any person who contravenes this Act shall be punishable with imprisonment for life, or with imprisonment of either description for a term which may extend to seven years, or with fine.
- ⌚ On violation of sedition law FIR should be registered only after preliminary investigation and clearance from the government. For this, amendments should be made in Section-154 of the Code of Criminal Procedure.
- ⌚ Section-124A should be amended to bring the sedition law in line with the decision given in the Kedar Nath case (1962).
- ⌚ In the Kedar Nath case, the Supreme Court had ruled that before imposing this section on a person, his propensity to incite violence should be kept in mind.
- ⌚ Under this law, sedition is a cognizable, non-bailable and non-compoundable offence.
- ⌚ Life imprisonment (with or without fine) has been provided as the maximum punishment for sedition.
- ⌚ In May 2022, in SG Wombatkere Vs Union of India case, the Supreme Court ruled that all proceedings under the sedition law should be suspended until the central government reconsiders the provisions of the sedition law.

### 12. Meeting of FMs of BRICS countries

Recently the foreign ministers of BRICS countries have supported the use of local currencies in international trade.

Recently the meeting of Foreign Ministers of BRICS countries has been concluded. A joint statement titled 'The Cape of Good Hope' has been issued at the end of the meeting.

### Key findings -

- ⌚ Member countries committed to support rules-based, open and transparent global trade.
- ⌚ A strong global financial safety net was supported. At its center would be a quota-based and well-resourced International Monetary Fund (IMF).
- ⌚ The need to use local currencies (de-dollarisation) in international trade and financial transactions was underlined.
- ⌚ Dedollarization is the process whereby nations reduce their reliance on the US dollar as their reserve currency, medium of exchange and unit of account.

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### Importance of de-dollarization

- ⌚ This will reduce the dependence of other countries on the US dollar and the US economy.
- ⌚ This will reduce countries' vulnerabilities to currency fluctuations and changes in interest rates.



- ⌚ This will improve economic stability and reduce the risk of financial crisis.

### Steps taken by India to promote internationalization of rupee -

- ⌚ Recently 18 countries including United Kingdom, Germany, Russia have agreed to do business in Indian Rupee. Indian and Russian banks have opened special Vostro accounts for trading in rupees.
- ⌚ India's new Foreign Trade Policy (2023) favors international trade in Rupees.

### 13. IRDAI issues draft guidelines for insurance carriers

Insurance Regulatory and Development Authority of India (IRDAI) has released draft guidelines for insurance carriers. Insurance carriers are a key component in achieving IRDAI's goal of 'Insurance for All by 2047'. The initiative aims to improve access and availability of insurance in the country.

'Insurance for All' aims to ensure that every citizen has an adequate life, health and property insurance cover by the year 2047.

Also, it is to be ensured that the operation of each enterprise is backed by proper insurance cover.

The entire insurance ecosystem has **3 pillars**: the insurance customer (policyholder), the insurance provider (insurer) and the insurance distributor (intermediary/agent).

### Objectives of the Insurance-Carrier Guidelines -

- ⌚ A dedicated insurance distribution channel will be set up in each gram panchayat. These channels will increase insurance coverage as well as spread awareness about insurance.
- ⌚ The focus will be on identification and development of local resources for dissemination of insurance within each Gram Panchayat.
- ⌚ Induction of women as insurance carriers will be encouraged to gain the confidence of the local people.

### Insurance Sector in India -

- ⌚ India is the fifth largest life insurance market among emerging insurance markets in the world. India's insurance market is growing at the rate of 32-34% every year.
- ⌚ Foreign Direct Investment (FDI) up to 74% has been permitted under the automatic route for an insurance company.



- ⌚ IRDAI is a statutory body constituted under the Insurance Regulatory and Development Authority of India (IRDAI) Act, 1999.
- ⌚ Its main function is the overall supervision and development of the insurance sector in India.
- ⌚ The powers and functions of IRDAI are laid down in the IRDAI Act, 1999 and the Insurance Act, 1938.

#### 14. DSCI released cybersecurity skilling report with EY

Recently the DSCI released a study called 'Bridging the Gap: Identifying Challenges in Cybersecurity Skilling and Bridging the Divide.'

##### Objectives of this report:

- ⌚ Analyzing the demand and supply of skilled cyber security professionals in India,
- ⌚ To identify the reasons for the shortage of skilled professionals in India, and suggest solutions to overcome the shortage of skilled professionals in India.

##### Key Findings of report:

- ⌚ Nearly 50% of corporates have admitted that cyber security professionals constitute less than 5% of the company's total workforce.
- ⌚ The **top three cyber attacks**: Phishing (spoofed emails), Smishing (spoofed texts) and Vishing (voice).
- ⌚ These are followed by ransomware and zero-day exploits. According to the report, all such cyber attacks are expected to increase significantly.
- ⌚ Currently, 43% of corporates have offices where 21-40% of the total cyber security workforces employed is women.
- ⌚ According to the Indian Computer Emergency Response Team (CERT-In), the number of cyber attacks has increased from 41 thousand in 2017 to 14 lakh in 2021.

##### Challenges in implementing the skill training program-

- ⌚ Training institutions lack financial resources,
- ⌚ Training institutions do not have adequate digital infrastructure to conduct cyber security skills training programmes.
- ⌚ There is a paucity of skilled faculties/trainers to impart cyber security training;
- ⌚ There is a dearth of experienced trainers from the knowledge industry and certified trainers are even less.



## Recommendations of the report -

- ⌚ A list of skills required by the industry should be drawn up; skill development program should be designed accordingly, and then the training should be imparted. Corporate driven training initiatives should be encouraged.
- ⌚ Strong inclusive policies should be made for skill training for cyber security. Also, attention should be paid to diversity while recruiting candidates for vacancies in cyber security.

### 15. Increased rainfall alone will not help groundwater recovery

Recently a study was done by a team from IIT Gandhinagar to understand the variability of groundwater storage due to warming climate.

It concluded that, mere increase in rainfall will not help in groundwater recharge.

#### Key findings of study:

- ⌚ A warming climate will increase the frequency of hydroclimate-related extreme events (such as floods and droughts).
- ⌚ As the climate warms, evapotranspiration will increase. Due to this, the availability of water for recharge of ground water will be limited.
- ⌚ Climate warming will increase the amount of summer monsoon rainfall over northern India by 6-8%.
- ⌚ Ground water is extracted from deep aquifers in the Indo-Gangetic plain. Due to this, it will be difficult to recover the ground water even after the increase in rainfall.
- ⌚ According to the World Bank, India is the largest user of ground water in the world. Ground water meets about 80% of the country's drinking water requirement and two-thirds of water demand for irrigation.
- ⌚ According to the Central Ground Water Board, about 14% of the ground water blocks are over-exploited. Additionally, 4% are in critical condition.

#### Measures taken for ground water management:

- ⌚ The Ministry of Jal Shakti has issued guidelines for regulation and control of ground water extraction.
- ⌚ Initiatives like Atal Bhu Jal Yojana and National Aquifer Management Project have been launched for effective management and regulation of groundwater.
- ⌚ India-Groundwater Resource Estimation System (IN-GRES) software is being used.
- ⌚ Mobile application 'Jaldoot' is being used for monitoring the ground water level.
- ⌚ Per Drop More Crop component has been introduced under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to improve water use efficiency.



## 16. CAG's 2022 report on 'Derailments in Indian Railways' flagged multiple shortcomings

Recently, A report titled 'Derailment in Indian Railways' has been released by the Comptroller and Auditor General of India (CAG).

According to this report, between the financial year 2018 and 2021, 69% of the train accidents occurred due to derailment of trains.

### Facts highlighted in this report:

- ⌚ The main factor responsible for derailment of trains is the lack of maintenance of tracks. After this, the deviation in excess of the permissible limit in the prescribed parameters for the tracks is responsible.
- ⌚ The targets fixed for renewal of tracks were not in consonance with the actual requirement at the ground level.
- ⌚ After the Odisha train accident, the issue of railway safety and the role of technology in its solution has become a hot topic of discussion.
- ⌚ It is believed that the Odisha train accident was caused by a change in the Electronic Interlocking (EI) system.
- ⌚ EI system is a processor based system. It is an integral part of railway signalling. Through this, rail transport in the yard is controlled, so as to ensure safe movement of trains in the controlled area.

### Measures by Indian Railways for the improvement of Rail Transport Safety:

- ⌚ A Railway Safety Fund called Rashtriya Rail Sanraksha Kosh (RRSK) has been constituted.
- ⌚ Railway Safety Commission has been constituted under the Ministry of Civil Aviation. It deals with issues relating to the safety of railway operations.
- ⌚ The trains are being fitted with Linke Hofmann Busch (LHB) type coaches as the Integral Coach Factory (ICF) coaches were more prone to derailments.
- ⌚ To enhance the safety of running trains, Automatic Train Protection (ATP) system named "Kavach" is being installed.

### Kavach System

It has been developed by the Research Designs and Standards Organization (RDSO) of the Ministry of Railways.

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### Key features:

- ⌚ It helps to protect the loco pilot from ignoring the signal in case of danger and over speeding.
- ⌚ If the loco pilot fails to apply the brakes, it automatically controls the speed of the train by applying the brakes.



- ⌚ It continues to run trains even in bad weather conditions like dense fog.
- ⌚ It prevents collision of trains through direct communication between loco-pilot.
- ⌚ It provides SOS (Emergency Message) facility in case of any accident.

### 17. Amrit Dharohar and MISHTI schemes for wetland, mangrove conservation

Recently, on the occasion of World Environment Day 2023, the Prime Minister has launched two schemes related to the conservation of wetlands and mangroves.

These two schemes are: “Amrit Dharohar”, and “Mangrove Initiative for Shoreline Habitats and Tangible Incomes: MISHTI”.

#### Amrit Dharohar:

- ⌚ Recognizing the importance of conservation of Ramsar sites, the Government of India had announced the ‘Amrit Dharohar’ initiative as part of this year’s budget announcement to promote the unique conservation values of Ramsar sites.
- ⌚ Highlighting the importance of local communities in conserving wetland ecosystems, the implementation strategy of “Amrit Dharohar” was launched on 5 June 2023. This is yet another example of the Government’s commitment to the philosophy of conservation through community participation and prosperity through conservation.

#### MISHTI:

- ⌚ In order to promote and protect mangroves, “Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI)” was announced in the Union Budget 2023-24.
- ⌚ Mangroves are unique, natural ecosystems that have enormous biological productivity and the ability to sequester carbon, in addition to acting as bio-shields.
- ⌚ The Mishti program was launched on 5 June 2023 with the active participation of the coastal states and union territories.
- ⌚ The program will cover an area of about 540 sq km in 9 coastal states and 4 union territories in five years (2023-28).
- ⌚ This will generate about 22.8 million man-days with an estimated carbon sink of 4.5 million tonnes of carbon.
- ⌚ It will also create potential areas for nature tourism and livelihood potential for local communities.
- ⌚ Mangrove plantation drives were also organized at more than 75 mangrove sites. The campaign saw participation of public representatives, local people, village communities, educational institutions and other stakeholders through tree plantation activities.





### 18. Govt permits import of pet coke as raw material for lithium-ion batteries

Recently, the Directorate General of Foreign Trade (DGFT) has allowed the import of pet coke as a raw material for the production of lithium-ion batteries.

- ⌚ Import of Needle Pet Coke (NPC) has been approved for the manufacture of graphite anode material required in the production of Lithium Ion batteries.
- ⌚ NPC will not be used for any other purpose. The sulfur content in this NPC is less than 0.8%.
- ⌚ India is the largest consumer of petcoke in the world. India imports more than half of its annual petcoke consumption. It is imported mainly from the United States of America.
- ⌚ In the year 2018, the government banned the import of pet coke for use as a fuel, but exempted its import for the cement, lime kiln, calcium carbide and gasification industries.
- ⌚ Petroleum coke (pet coke) is a carbon-rich solid material. It is obtained from the final cracking process.

The cracking process is a heat-based chemical engineering process. It breaks down the long chain hydrocarbons of petroleum into shorter chains.

- ⌚ **Grades of pet coke:** green coke (containing higher moisture and volatile matter) and calcined coke (higher carbon content than green coke).
- ⌚ **Types of Pet Coke:** NPC, Honeycomb Coke, Sponge Coke and Shot Coke.

#### Uses of Pet Coke:

- ⌚ It is used as a raw material/fuel in cement, gasification, boilers etc.
- ⌚ It is used as a carbon source (electrode, synthetic graphite, silicon carbide, TiO<sub>2</sub> pigment, carbon razor, etc.).

#### Advantages of pet coke over coal:

- ⌚ It has higher calorific value. Pet coke has a calorific value of 7800 kcal/kg as compared to 3500-4500 kcal/kg of coal.
- ⌚ Pet coke is hydrophobic, whereas coal is hydrophilic. This means that pet coke does not retain moisture in rainy time; on the contrary the coal becomes moist.
- ⌚ Pet coke is a less volatile substance. In such a situation, the possibility of damage due to vaporization is reduced. A small amount of ash is generated after its combustion.

#### Problems arising from the use of Pet Coke:

- ⌚ It contains more than 80% carbon. It emits 5 to 10% more CO<sub>2</sub> than coal on a per unit energy basis.



- ⌚ Its combustion releases heavy metals like mercury, arsenic, chromium and nickel as well as other toxic gases including sulfur and hydrogen chloride into the atmosphere.

### 19. NHAI releases first sustainability report on environmental responsibility

Recently the National Highways Authority of India (NHAI) has released its first Sustainability Report for the financial year 2021-22.

The sustainability report covers NHAI's governance structure, its stakeholders, environment and social responsibility initiatives.

#### Keep findings of Report:

- ⌚ The greenhouse gas emission intensity of NHAI has registered a sequential reduction of 9.7% in FY 2020-21 and 2% in FY 2021-22.
- ⌚ NHAI is using recycled materials for construction of highways. These include recycled asphalt and recycled aggregates.
- ⌚ Recycled asphalt is a reprocessed material used in road construction. These include asphalt and other auxiliary materials.
- ⌚ Recycled concrete aggregates (RCA) are produced by crushing demolished concrete elements. RCA differ from fresh aggregates due to the cement paste attached to the surface of the original natural aggregates after the process of recycling. This highly porous cement paste and other contaminations contribute to the lower particle density and higher porosity, variation in the quality of the RCA and the higher water absorption.
- ⌚ NHAI has increased the use of certain materials in road construction to ensure sustainability and reduce greenhouse gas and carbon emissions.

#### These include the following -

- ⌚ Fly ash, which is a by-product from the combustion of coal;
- ⌚ Plastic waste in a hot bituminous mixture;
- ⌚ Steel slag, which is a by-product from the manufacture of steel;
- ⌚ Inert materials obtained from landfill sites that are neither chemically nor biologically reactive;
- ⌚ Geo-synthetic materials like coir/jute;
- ⌚ Cold asphalt mixes, which are unheated mineral materials. These are made either by mixing with bitumen or foamed bitumen;
- ⌚ Copper slag, which is a by-product of copper smelting.



## National Highways Authority of India (NHAI)

- ⌚ NHAI was established under the NHAI Act, 1988. This organization is responsible for the development, maintenance and management of National Highways across India.
- ⌚ It is a nodal agency of the Ministry of Road Transport and Highways (MoRTH). It is entrusted with the task of implementation of National Highway Development Projects.

## Steel Slag-

- ⌚ Steel slag is produced in steelmaking furnaces in the process of separating molten steel from residual impurities.
- ⌚ Asphalt content also includes steel slag. It is a by-product obtained from steel and iron production processes.
- ⌚ It can be used in a number of activities, such as in construction and road (levelling), in agriculture (due to its ability to reduce soil acidity), in the manufacture of Portland slag cement, etc.

## 20. 350<sup>th</sup> Anniversary Celebrations Of Shivaji Maharaj's Coronation

Recently, celebrations have begun to mark the 350th anniversary of the coronation of Chhatrapati Shivaji Maharaj.

Celebrations have begun at the Raigad Fort in Maharashtra to mark the 350th anniversary of Shivarajyabhishek of Chhatrapati Shivaji Maharaj.

The coronation of Shivaji Maharaj took place on June 6, 1674 at Raigarh Fort. At the same place he had laid the foundation of "Hindavi Swaraj". On this occasion, he also assumed the title of 'Chhatrapati'.

Raigarh Fort is a hill fort. It is located about 25 km from Mahad in Raigad district. The early Europeans called it the 'Gibraltar of the East'. The chief architect of this fort was Hiroji Indulka.

An artificial lake is visible from this fort. It is known as 'Ganga Sagar Lake'. The only main road leading to the fort passes through the "Maha-Darwaja" (Great Gate).

The ancient name of Raigarh fort was Rairi. In the 12th century, this fort was under the control of the Maratha Shirke dynasty.



### Importance of Raigarh Fort

- ⌚ The fort helped Shivaji challenge the supremacy of the Adilshahi dynasty. Also, it provided them a way to expand their power towards Konkan.
- ⌚ This place emerged as the center of Shivaji's rule.
- ⌚ Shivaji died in the fort of Raigarh in the year 1680 and was cremated in the fort itself.

### Other forts and their significance -

- ⌚ **Murud-Janjira Fort:** This fort is situated on the Arabian Sea coast. It is considered one of the strongest sea forts in India. The special attraction of this fort is the 3 giant cannons, namely- Kalalbangadi, Chawri and Landa Kasam.
- ⌚ **Kolaba Fort:** This fort was one of the major naval centers of the Maratha Empire.
- ⌚ **Pratapgarh Fort:** This fort is famous for the encounter between Shivaji and Afzal Khan.
- ⌚ **Sindhudurg Fort:** It is known as one of the finest sea forts in India. It was built during the reign of Shivaji on an island in the Konkan region.
- ⌚ **Shivneri Fort:** This fort is the birth place of Shivaji. He never ruled this fort.
- ⌚ **Purandar Fort:** This fort is the birth place of Shivaji's son Sambhaji. It is considered an important fort because of the role of this fort in the Adilshahi dynasty and Shivaji's victory over the Mughals.
- ⌚ **Torna Fort:** This is the first fort captured by Shivaji Maharaj at the age of 16.

## 21. India - United States Relations

Recently India and America have agreed on a roadmap for cooperation in the field of defense industry. The new roadmap will accelerate technology collaboration and co-production in the following:

- ⌚ Air combat and ground transportation systems;
- ⌚ Intelligence gathering, surveillance and reconnaissance activities and undersea operations.

### Key Facts:

- ⌚ India and the US have agreed to start discussions for a 'Security of Supply' (SOS) arrangement, and a 'Reciprocal Defense Procurement (RDP) agreement. (SoS: This arrangement allows companies in any country to request priority delivery for contracts, subcontracts or orders.)
- ⌚ RPD Under this, the partners agree to the complementary acquisition of defense equipment from each other's country.
- ⌚ Both sides have agreed to launch a proposed new initiative called the India US Defense Acceleration Ecosystem (NDUS-X).
- ⌚ This initiative will promote cutting edge technology collaboration.



- 🕒 The US has welcomed India's leadership role in the Quad Indo-Pacific Maritime Domain Awareness Initiative (IPMDA).

### India has signed the following four basic defense agreements with the US-

1. General Security of Military Information Agreement (GSOMIA) in the year 2002 on the exchange of military information.
2. Logistics Exchange Memorandum of Agreement (LEMOA) to use each other's military bases in the year 2016.
3. Communications Compatibility and Security Agreement (COMCASA) in the year 2018 for interoperability between the two armies and sale of high-end technology to India.
4. Basic Exchange and Cooperation Agreement (BECA) in the year 2020 for sharing of high level military technology, logistics and geospatial maps.

### IPMDA

#### Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA)

- 🕒 The US had announced IPMDA in 2022. It is an initiative launched with regional partners and allies to promote a free and open Pacific region.
- 🕒 Its goal is to connect regional partners and allies with American technologies to provide greater maritime situational awareness in real-time.

### 22. LHC experiments see first evidence of a rare Higgs boson decay

Recently, the European Organization for Nuclear Research (CERN) is operating the LHC.

The first evidence of a rare process has been found during an experiment being carried out at the LHC. In this process the Higgs boson decays into Z boson and photon.

This decay may provide indirect evidence of the existence of particles that were not even predicted by the "Standard Model of Particle Physics (SMPP)".

The Standard Model is a theory of particles, fields, and the fundamental forces that govern them. Currently, this model is the most accurate theory explaining the fundamental concepts of particle physics.

It consists of 12 fundamental matter particles, classified as quarks (which make up protons and neutrons) and leptons (which make up electrons).



This theory explains how 'force-bearing' particles, belonging to a broad group of bosons, affect quarks and leptons.

This model includes three forces that govern the behavior of matter. These forces are: Electromagnetism, Strong force and Weak force. Currently, the force of gravity is not included under the Standard Model.

### Limitations of the SMPP model

- ⌚ This model fails to explain the fact that how the force of gravity operates;
- ⌚ It does not explain the asymmetry between matter and anti-matter;
- ⌚ It cannot explain the composition of dark matter and;
- ⌚ It is also unable to explain the fact that, why the mass of subatomic particles is greater than the sum of their constituents

### The European Organization for Nuclear Research (CERN)

The CERN laboratory was established in 1954. It is located on the France-Switzerland border near Geneva. It consists of 23 member countries. India is involved in this experiment as an associate member country.

### Large Hadron Collider (LHC)

- ⌚ It is the most powerful particle accelerator ever built. It is capable of moving protons or ions at nearly the speed of light.
- ⌚ In the year 2012, the LHC discovered the Higgs boson particle. The Higgs boson particle will help us understand why fundamental particles have mass.

### 23. Global plan for dealing with next pandemic

Recently, the latest version of the draft pandemic treaty was shared at the World Health Assembly (WHA). In which it was said that by removing the provision related to Antimicrobial Resistance (AMR) from the 'Pandemic Treaty', humanity will face future pandemics.

- ⌚ World Health Assembly is a decision-making body of the WHO.
- ⌚ Although the first pandemic treaty drafts were based on AMR policy directives, all these entries are now at risk of being dropped after the first round of negotiations.
- ⌚ The WHA began work on the pandemic treaty in December 2021. This was done after agreeing on a global process for drafting and negotiating an international instrument in this regard.

⌚





### **Pandemic Treaty**

- ⌚ It aims to prevent epidemics, save lives, reduce the burden of disease and protect livelihoods.
- ⌚ This will be done by strengthening global capacities to prevent, prepare and respond to pandemics, and for the recovery of health systems
- ⌚ It encourages an approach that is inclusive of all governments and all societies. Also, the prevention, preparedness and response aspects of the pandemic are determined.

### **Concerns-**

- ⌚ It appears to be an attempt to divert attention from the demands for better access to vaccines and treatments.
- ⌚ Most of the provisions of the proposed pandemic treaty are already available under the International Health Regulations (IHR), 2005.
- ⌚ WHO already has binding rules known as IHR.
- ⌚ These set out the obligations of countries where thresholds for the effects of public health events are likely to be exceeded.

### **Antimicrobial Resistance: AMR**

- ⌚ Antimicrobial resistance refers to the acquisition of resistance by any microorganism (bacteria, virus, fungus, parasite, etc.) against antimicrobial drugs (such as antibiotics, antifungals, antivirals, anti-malarial and anthelmintic) that are used to treat infections.
- ⌚ As a result standard treatments become ineffective, the infection persists and can spread to others.
- ⌚ Microorganisms that have developed antimicrobial resistance are sometimes referred to as “superbugs”.

### **24. 150<sup>th</sup> anniversary of arrival of Indians in Suriname**

Recently the Indian President has been conferred with the ‘Grand Order of the Chain of the Yellow Star’, the highest civilian honor of Suriname.

- ⌚ Also, India has also expanded the eligibility criteria for OCI card to Indian expatriates living in Suriname. It has been decided to increase the eligibility criteria of Indian expatriates living there from 4<sup>th</sup> generation to 6<sup>th</sup>

### **Indian community in Suriname**

- ⌚ On June 5, 1873, the first group of Indians reached the sea coast of Suriname aboard a ship named Lalla Rukh.
- ⌚ Indo-Surinamese is the largest ethnic community in the country. They have 27.4 percent share in the total population here.



- ⌚ In the period 1873–1916, over 34,000 Indians were brought to Suriname from British India as indentured laborers to work on the plantations.
- ⌚ In the 19th century, a severe famine in the Gangetic plains led to extreme poverty. Therefore, due to poverty and scarcity, the Indian laborers were forced to migrate.
- ⌚ In Suriname the descendants of these workers mainly speak the surname Hindustani language. It is a language derived from the mixture of Awadhi and Bhojpuri. It is the third most spoken language in Suriname.
- ⌚ India and Suriname began their relations in 1976 after Suriname gained independence.

### Suriname

- ⌚ The capital of Suriname is Paramaribo. It is located on the northeast coast of South America.
- ⌚ **Neighboring Countries:** It is surrounded by French Guiana in the east, Brazil in the south and Guyana in the west.
- ⌚ **Geographical features:** Narrow coastal plain with mostly hilly areas and marshy areas.
- ⌚ **Major rivers:** Commewine River, Copenem River, Corentin River, Marowine (Moroni) River etc.
- ⌚ **Highest peak:** Juliana Top.

### 25. Iran presents its first hypersonic ballistic missile

Recently, Iran has displayed its first indigenously made hypersonic missile 'Fattah'. The firepower of this missile is 1,400 km.

- ⌚ A hypersonic missile is a weapon that travels five times the speed of sound. This is a speed of over Mach 5 or about 6,174 km/h.
- ⌚ Hypersonic missiles fly at a much lower altitude than conventional ballistic missiles.

### Two types of hypersonic weapons:

- ⌚ **Hypersonic Glide Vehicle:** First it is launched from a rocket, then it moves towards its target.
- ⌚ **Hypersonic Cruise Missile:** Once a target has been identified, the missile is propelled in that direction by an air-breathing high-speed engine or 'scramjet'.

### Advantages of hypersonic weapons -

- ⌚ These missiles use only kinetic energy and the energy generated by motion to destroy easy targets in underground facilities.
- ⌚ These missiles can conduct long range retaliatory strikes against remote, shielded and/or time-critical threats (such as road-mobile missiles).
- ⌚ These weapons are designed to be very fast and agile, so that they cannot be caught by conventional missile defense systems.





- ⌚ The United States, Russia, and China are the leaders in the development of hypersonic weapons programs. Apart from these, Australia, India, France, Germany and Japan are also trying to develop such technology.
- ⌚ India has successfully test-fired the Mach 6 scramjet engine under its Hypersonic Technology Demonstrator Vehicle programme. The Hypersonic Wind Tunnel (HWT) test facility of the Defense Research and Development Organization (DRDO) has been commissioned.

### 26. Bt cotton entry delayed in India

The entry of the next generation of Bt cotton in India has been delayed due to the recent demand for new inputs by the Genetic Engineering Appraisal Committee (GEAC).

- ⌚ Some states have refused to issue No Objection Certificates (NOC) for biosafety research trials of Genetically Engineered (GE) cotton hybrids. These field trials are to be done in Telangana, Maharashtra, Gujarat and Haryana.
- ⌚ It is noteworthy that it has been made mandatory to obtain NOC from the State Governments for conducting field trials. Agriculture is a subject of the State List. Therefore, the involvement of states is necessary for compliance monitoring.
- ⌚ GEAC is a statutory committee functioning under the Ministry of Environment, Forest and Climate Change. It has been constituted under the "Rules for the Manufacture, Use/Import/Export and Storage of Hazardous Micro-organisms or Genetically Engineered Organisms or Cells, 1989" made under the Environment (Protection) Act, 1986.
- ⌚ Its main task is to approve activities related to the widespread use of dangerous microorganisms and recombinants in industrial production.
- ⌚ It conducts experimental field trials of any genetically engineered organism before it is released / released into the environment.
- ⌚ Bt (*Bacillus thuringiensis*) cotton is a hybrid/variety of cotton. It contains genes named 'cryIaC' and 'cryIaB'. These genes are isolated from the soil-dwelling bacterium *Bacillus thuringiensis* (Bt), then coded for toxic proteins that kill bollworms.
- ⌚ Bt cotton is the only GM (genetically modified) crop approved for commercial cultivation.

### 27. Jagdish Sudhakar, first Indian to receive UNESCO's Michel Batisse Award

Recently Jagdish Bakan, Wildlife Warden and District Forest Officer (DFO) of Tamil Nadu's Ramanathapuram district has won the 2023 Michel Batisse Award for Biosphere Reserve Management from the United Nations Educational, Scientific and Cultural Organization (UNESCO).

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Shri Bakan has been selected for the award for his work in the field of better management of the Gulf of Mannar Biosphere Reserve. The prize money of \$12,000 will go to the state government and the Mannar Biosphere Reserve Trust.



The award is given for outstanding achievements in the management of biosphere reserves in line with the recommendations of the Seville Strategy.

**Seville Strategy:**

The Seville Strategy provides recommendations for developing effective biosphere reserves and setting conditions for the proper functioning of the World Network of Biosphere Reserves.

**Gulf of Mannar:**

- ⌚ The Gulf of Mannar is an inlet of the Indian Ocean between eastern India and western Sri Lanka.
- ⌚ It is bounded by Rameshwaram Island, Adams Bridge and Mannar Island to the north-east.
- ⌚ It is joined by several rivers, including the Tamraparni (India) and the Aruvi (Sri Lanka).
- ⌚ This bay is famous for its pearl reserves and conch shells.

**Gulf of Mannar Biosphere Reserve (GoMBR):**

- ⌚ There are a total of 21 islands in the GoMBR that serve as habitats for shorebirds migrating up to the Arctic Circle.
- ⌚ It is India's first marine biosphere reserve.
- ⌚ Most of the islands have sand dunes along the coast, dominated by salt-tolerant plant species.
- ⌚ Most of the islands have sand dunes with lawn-dominant plant species.
- ⌚ Coral, seagrass and mangroves are among the three unique ecosystems present on the islands.

**28. Indian navy tested heavy weight torpedo 'Varunastra'**

Recently indigenously designed and developed heavy weight torpedo 'Varunastra' with live warhead was successfully flight tested by the Indian Navy against an underwater target.

This indigenous heavy weight torpedo will enhance the anti-submarine warfare capabilities of the Navy.

According to the Defense Ministry, Varunastra is a ship-launched anti-submarine torpedo with low drift navigational system, acoustic homing, advanced acoustic counter measurement features, autonomous guidance algorithm, non-sensitive munitions warhead etc.

The torpedo was fired from a submarine and successfully hit the target at a distance of 40 km.

The Vizag-based Naval Science and Technological Laboratory (NSTL) of the Defense Research and Development Organization has designed the Varunastra missile system, and Bharat Dynamics Limited (BDL) is responsible for its production.



The Varunastra Heavy Weight Torpedo is an electrically powered torpedo capable of anti-submarine and anti-ship operations.

It has a maximum strike range of 40 km, and can travel at a speed of over 70 kmph at a maximum depth of 600 metres.

### 29. RBI to allow non-bank companies to issue e-RUPI vouchers

Recently, the Reserve Bank of India (RBI) has allowed non-banking prepaid payment instruments to issue e-Rupee digital vouchers.

RBI also proposed to issue e-Rupee vouchers on behalf of individuals to ease the process of issuance and redemption of this voucher.

These steps will make the benefits of e-Rupee digital vouchers accessible to more users, further deepening the penetration of digital payments in the country.

#### **e-RUPI:**

- ⌚ e-RUPI vouchers are pre-paid digital instruments, which a beneficiary receives on his/her phone in the form of SMS or QR code.
- ⌚ Prime Minister launched e-RUPI, a cashless and contactless instrument for digital payments, on August 2, 2021.
- ⌚ e-RUPI is a one time contactless and cashless voucher based payment method, which helps users to redeem vouchers without having access to a card, digital payment app or internet banking.

#### **Purpose:**

- ⌚ Exclusive e-RUPI vouchers are now issued by 21 banks in partnership with the National Payments Corporation of India (NPCI) for specific purposes such as payment of hospital bills etc.
- ⌚ e-RUPI is different from Central Bank Digital Currency (CBDC). e-RUPI is person and object specific digital voucher.
- ⌚ The beneficiary does not need to have a bank account to obtain or redeem e-RUPI vouchers.
- ⌚ As it ensures an easy, contactless two-step redemption process that does not require sharing of personal details.



### 30. Successful flight test of 'Agni Prime' ballistic missile

Recently, the ballistic missile 'Agni Prime' has been successfully test-fired by the Defense Research and Development Organization (DRDO) from Dr APJ Abdul Kalam Island off the coast of Odisha.

#### Key Facts:

- ⌚ This was the first pre-induction night launch conducted by the users after three successful development trials of the missile, validating the accuracy and reliability of the system.
- ⌚ During the test, range instruments such as radar, telemetry and electro optical tracking systems were deployed at various locations to capture flight data covering the entire trajectory of the missile.

#### 'Agni Prime' Ballistic Missile:

- ⌚ Agni prime missile is a two stage canistered solid propellant missile with dual navigation and guidance system. Canisterization reduces the time required for launch and improves storage and mobility.
- ⌚ It is a surface-to-surface ballistic missile. Its range is 1000 to 2000 km.
- ⌚ "Agni Prime" is the sixth missile in the Agni series. Agni missiles have been developed under the Integrated Guided Missile Development Program (IGMDP) headed by Dr. APJ Abdul Kalam.
- ⌚ It was approved by the Government of India in the year 1983. The missiles of this series have been developed by the Defense Research and Development Organization (DRDO) of India.

#### 5 missiles developed under the Integrated Guided Missile Development Program (IGMDP):

- ⌚ **Prithvi:** It is a short-range surface-to-surface ballistic missile.
- ⌚ **Agni:** This includes ballistic missiles of varying ranges.
- ⌚ **Trishul:** It is a short range surface to air missile.
- ⌚ **Nag:** It is a third generation anti-tank missile.
- ⌚ **Akash:** It is a medium range surface to air missile.

### 31. WHO report highlights significant impact of 'Har Ghar Jal'

According to a report by the World Health Organisation, about 400,000 deaths from diarrheal diseases can be prevented by ensuring safely managed drinking water to all households in the country through the "Har Ghar Jal" programme.

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Additionally, approximately 14 million Disability Adjusted Life Years (DALYs) related to these diseases could be averted.



## Key Findings of report:

- ⌚ This achievement alone would result in estimated cost savings of up to \$101 billion. This analysis focuses on diarrheal diseases because water-borne diseases are a major cause.
- ⌚ The Har Ghar Jal report focuses on diarrheal diseases because they contribute more to the overall disease burden related to water, sanitation, and hygiene (WASH) problems.
- ⌚ The analysis underscores the urgent need to address these diseases and the potential for substantial gains in public health and economic welfare.
- ⌚ The analysis underscores the urgent need to address these diseases and the potential for substantial gains in public health and economic welfare.
- ⌚ The report shows that in 2018, 36% of India's total population, including 44% of the rural population, did not have access to improved drinking water sources in their premises.
- ⌚ WHO monitors various Sustainable Development Goal indicators, including the proportion of the population using safely managed drinking water services (indicator 6.1.1) and mortality related to unsafe water, sanitation and hygiene.
- ⌚ WHO has developed methods and tools to estimate the health benefits associated with improvements in water, sanitation and hygiene, in particular reducing diarrheal diseases and other related health outcomes.
- ⌚ In 2018, women in India spent an average of 45.5 minutes a day collecting water to meet household needs. In total, households that do not have on-premises water spend a staggering 66.6 million hours each day collecting water, most of which (55.8 million hours) occur in rural areas.
- ⌚ Universal coverage through provision of tap water would result in substantial savings by eliminating the need for daily water collection efforts. Rural tap water connections increased from 16.64 per cent in 2019 to 62.84 per cent within a period of 41 months.

## Har Ghar Jal Scheme

- ⌚ The Har Ghar Jal program implemented by the Jal Jeevan Mission under the Ministry of Jal Shakti was announced by the Prime Minister on August 15, 2019. The objective of the program is to ensure adequate, affordable and regular supply of safe drinking water through taps. Every rural family.
- ⌚ The program is in line with Sustainable Development Goal number 6.1 for safely managed drinking water services.
- ⌚ The mission aims at provision of potable water supply of prescribed quality in adequate quantity on regular and long-term basis to every rural household in the country by 2024.
- ⌚ The program is implemented by the Government of India in partnership with the States/UTs.



### 32. Manual Scavenging

According to the Union Ministry of Social Justice and Empowerment (MoSJE), only 66% of the districts in the country are free from “manual scavenging”.

#### According to MoSJE:

- ⌚ Out of a total of 766 districts in the country, only 508 districts have declared themselves free from “manual scavenging”.
- ⌚ In the surveys conducted in the years 2013 and 2018, all the people engaged in “manual scavenging” were identified. Their number was about 58,000.
- ⌚ No person had died due to manual scavenging in the country in the last three years (2019 to 2022).
- ⌚ The only current danger associated with this practice is ‘dangerous cleaning of sewers and septic tanks’.

#### Manual Scavenging:

- ⌚ The act of manually removing human excreta from sewers or septic tanks is called manual scavenging.
- ⌚ The definition of this practice also includes persons employed to clean septic tanks, drains or railway tracks.
- ⌚ This practice is banned under the “Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013” (PEMSR).
- ⌚ Violation of this law can be punished with imprisonment of up to 2 years or a fine of one lakh rupees or both

### 33. Diabetes epidemic is increasing in many states in the country

Recently, the Metabolic Non Communicable Disease Health Report of India was released by the Indian Council of Medical Research-India Diabetes (ICMR-INDAB).

#### Key points of report:

- ⌚ This cross-sectional population-based survey assessed a representative sample of persons aged 20 years and above from urban and rural areas of 31 states and union territories.
- ⌚ As per the report, 11% of India’s population is suffering from diabetes while 15.3% of the population is affected by pre-diabetes.
- ⌚ 4% in urban India while 8.9% in rural population suffer from diabetes. About 15.4% of the urban population and 15.2% of rural India are in the pre-diabetic stage.



- ⌚ A random sample of the population across all 31 states found that Uttar Pradesh had the lowest prevalence of diabetes at 4%, while Goa had the highest at 26.4%.
- ⌚ The results of the study will be shared with the concerned state government so that they can formulate policies to improve the health of the population.
- ⌚ Since the year 1972, there has been no ICMR study on the prevalence of diabetes in the country. At that time, 2.3% in urban India and 1.5% in rural India were suffering from diabetes.
- ⌚ The study was conducted across the country in five phases between 2008 and 2020, covering five states in each phase (all the seven northeastern states were covered in one phase).
- ⌚ Around 1.24 lakh persons above the age of 20 years were covered in the door-to-door survey.

### Diabetes:

- ⌚ Diabetes is a disease that occurs when the amount of blood glucose (blood sugar) in the blood is too high.
- ⌚ It is a long-term health condition that affects the way the body converts food into energy.

### How does diabetes affect the body?

- ⌚ The body breaks down most of the food we eat into glucose and releases it into our bloodstream.
- ⌚ Glucose is the main source of energy in our body but when the amount of glucose in the blood increases, our brain signals the pancreas to release insulin.
- ⌚ Insulin is a hormone secreted by the beta cells of the pancreas that helps transport the right amount of glucose to our cells, so that the cells can use it for energy. That is, the insulin hormone is responsible for controlling the level of glucose in the blood.
- ⌚ In diabetes, the body does not make enough insulin or insulin at all, or does not use the available insulin properly.
- ⌚ In such a situation, the amount of glucose in the blood becomes high and it does not reach our cells. Diabetes increases the risk of damage to the eyes, kidneys, nerves and heart.

## 34. Fermi Energy in Quantum physics

Recently, the Fermi energy has attracted attention due to the wide range of everyday practical applications driven by the principles of quantum physics in various fields.

### Quantum Physics:

- ⌚ Quantum physics is the branch of physics that deals with the behavior and properties of the smallest particles of matter and energy, such as atoms, electrons, photons, and quarks.
- ⌚ Quantum physics shows that these particles can behave in strange and surprising ways, such as being in two places at once (superimposition), tunneling through obstacles, or entangling with each other over long distances.



- ⌚ Quantum physics also explains how atoms and molecules form the basis of all matter and how light and other electromagnetic waves are generated and interact with matter.
- ⌚ Quantum physics affects daily life through electronics, computing, lasers and optics. It enables technologies such as MRI for medical imaging and improves renewable energy systems.
- ⌚ Quantum cryptography ensures secure communications, while materials science and nanotechnology benefit from quantum principles.

### **Fermi Energy:**

- ⌚ The Fermi energy is the energy of the highest occupied state of electrons in a material at absolute zero temperature ( $-273^{\circ}\text{C}$  or  $0\text{K}$ ).
- ⌚ The Fermi energy determines the electron velocity in conduction, since only electrons with energies close to the Fermi energy can participate in the conduction process.
- ⌚ Metals such as copper, aluminum and silver exhibit high Fermi energies even at very low temperatures.
- ⌚ The Fermi energy and harmonic behavior of electrons controlled by quantum mechanics are responsible for various properties of metals, including their reflectivity, electrical conductivity, and thermal conductivity.

### **Significance for quantum physics:**

- ⌚ The Fermi energy represents the wave nature of matter and the discrete energy levels of electrons.
- ⌚ The Fermi energy determines various physical properties of matter, including electrical and thermal conductivity, heat capacity, magnetism, and superconductivity.
- ⌚ The Fermi energy is relevant in natural phenomena and in technological applications such as stars, nuclear reactions, lasers, transistors, and solar cells.

### **35. NASA's Parker Solar Probe Mission**

Recently for the first time, NASA's Parker Solar Probe has 'touched' the Sun to find out about the source of the solar wind.

#### **Solar wind discovery made by probe:**

- ⌚ The strong currents of the solar wind are generated by sudden bursts of energy release. This energy is released during rapid realignment of magnetic fields.
- ⌚ Probes have discovered that coronal holes are the size of "shower heads". These consist of funnels placed mostly evenly spaced over the material. Coronal holes are dark and relatively less hot regions present in the outer atmosphere of the Sun.





### Significance of this discovery:

- ⌚ This mission will help in understanding how the Sun releases energy. Plus, how it operates geomagnetic storms, which are a threat to communications networks. Solar storms can be better predicted.
- ⌚ The solar wind is a continuous flow of plasma, which consists of charged particles such as protons and electrons.
- ⌚ It also includes part of the solar magnetic field and extends well beyond the corona. They interact through the planets and the interstellar medium.
- ⌚ Indian Space Research Organization (ISRO) is also planning to launch Aditya - L1 mission this year. It will be the first Indian space mission to observe the Sun and the Solar Corona.
- ⌚ It will be placed in a halo orbit around the Lagrange point-1 (L1) of the Sun-Earth system, which is about 1.5 million km from Earth.

### 36. India Is World's Second Largest Steel Producer

In FY2022, India had produced 133.596 MT of crude steel. With this, at present India has become the second largest crude steel producing country in the world.

In the year 2018, India had overtaken Japan in terms of production of crude steel. China is still the global leader in the production of crude steel.

#### Steel:

- ⌚ Steel is an alloy of iron and carbon. It contains less than 2% carbon, 1% manganese and small amounts of silicon, phosphorus, sulfur and oxygen.
- ⌚ Iron is obtained by removing oxygen and other impurities from iron ore.
- ⌚ Steel is the world's most important engineering and construction material.
- ⌚ It is used in almost every aspect of our lives. This includes cars, building materials, refrigerators, washing machines, cargo ships, surgical instruments, etc.

#### Initiatives taken for steel industry:

- ⌚ Steel Scrap Recycling Policy has been implemented to promote scientific processing and recycling of ferrous scrap.
- ⌚ The National Steel Policy, 2017 has set a target of achieving total crude steel capacity of 300 MTPA and total demand/production capacity of crude steel at 255 MTPA by 2030-31.
- ⌚ Policy (DMI&SP Policy) has been formulated to give preference to domestically manufactured iron and steel products.
- ⌚ A production linked incentive scheme was approved for the production of special steel in the year 2021.



The main types of iron ore are hematite, magnetite, limonite and siderite (FeCO<sub>3</sub>).

- ⌚ Major active mines: Bailadila Nuagaon, Gandhamardan, Jora, Balda, Narayan Poshi, Daitari and Barsua mines.
- ⌚ In the year 2021, India exports iron ore worth \$4.3 billion. Due to this, it had become the 7th largest exporter of iron ore. Also, India imported iron ore worth \$177 million. This made it the 41st largest importer of iron ore in the world.
- ⌚ 92% of India's total iron ore exports were low grade ores.

### 37. Mission on Advanced and High-Impact Research (MAHIR)

“Mission on Advanced and High-Impact Research (MAHIR)” has been launched to take advantage of emerging technologies in the power sector.

The mission has been jointly launched by the Union Ministry of Power and the Ministry of New and Renewable Energy.

#### Objectives of the mission:

- ⌚ It will identify emerging technologies for the energy sector and sectors that will be relevant in the future.
- ⌚ This will create a vibrant and innovative environment for the power sector. Also, to provide a common platform to the stakeholders of this sector for carrying out various functions.
- ⌚ It will support pilot projects of indigenous technologies, and facilitate their commercialization.
- ⌚ Will leverage foreign collaborations and partnerships to accelerate research and development in the energy sector. This mission will help in making India one of the leading countries in the power sector.

#### Salient Features of MAHIR Mission

- ⌚ The mission has been designed for an initial period of five years from 2023-24 to 2027-28.
- ⌚ The mission will be implemented on the basis of “Technology Life Cycle”. The technology life cycle typically consists of four phases: the innovation phase, the growth phase, the maturity phase, and the decline phase.

#### Mission Structure:

- ⌚ **Technical Scoping Committee:** This committee will survey and identify the ongoing research and emerging areas globally in the power sector. Also will give recommendations in this regard to the Apex Committee.



- ⌚ **Apex Committee:** This committee will approve research proposals and monitor the progress of research.

#### Identified areas for research:

- ⌚ Seeking alternatives to lithium-ion storage batteries;
- ⌚ Modification of electric cookers/pans to suit Indian methods of cooking;
- ⌚ Green hydrogen for transportation fuel;
- ⌚ Carbon-capture technology etc.

### 38. Nutrient Based Subsidy Scheme

Recently the Commission for Agricultural Costs and Prices (CACP) has recommended to the Center to bring urea under the nutrient-based subsidy regime to prevent excessive use.

- ⌚ The CACP has also recommended imposing a cap on the number of subsidized bags of fertilizers per farmer. This will help in reducing the subsidy burden of the government.
- ⌚ These recommendations are part of CACP's non-price policy recommendations for Kharif crop season 2023-2024.
- ⌚ The government provides fertilizers to farmers at subsidized prices through manufacturers/importers of fertilizers. Under this, urea is sold at the statutorily notified Maximum Retail Price (MRP). An NBS scheme has been implemented for Phosphatic and Potassic fertilizers.

### 39. 75<sup>th</sup> International Archives Day concludes

Recently, the Minister of State for Culture has inaugurated an exhibition titled "Our Language, Our Heritage" under Azadi Ka Amrit Mahotsav to celebrate the 75th International Archives Day at the National Archives in Delhi.

This exhibition is an attempt to remember the valuable heritage of linguistic diversity of India as a nation.

According to an estimate, out of 7,111 languages spoken globally, around 788 languages are spoken in India alone.

Thus, along with Papua New Guinea, Indonesia and Nigeria, India is one of the four most linguistically diverse countries in the world.



## Gilgit Manuscripts

On the occasion of International Archives Day, the National Archives has made available the Gilgit Manuscripts, the oldest collection of manuscripts in India, written between 5-6 centuries.

The birch bark folio documents, written on pieces of the inner layer of the bark of birch trees in the Kashmir region, include canonical and non-canonical Jain and Buddhist works, which throw light on the development of various religio-philosophical literature.

The Exhibition presents a selection of original manuscripts drawn from the annals of the archival repository (such as the birch-bark Gilgit manuscripts, Tattvartha Sutra, Ramayana, and Srimad Bhagwad Gita, among others), official files of the government, proscribed literature under the colonial regime, private manuscripts of eminent personalities, as well as from the rich collection of rare books held in the NAI Library.

The exhibition includes the world's oldest manuscripts-the Gilgit Manuscripts were discovered in three phases at Naupur village (Gilgit region), and were first announced in 1931 by archaeologist Sir Aurel Stein.

## National Archives of India

- ⌚ The National Archives of India was established on 11 March 1891 in Kolkata (Calcutta) as the Imperial Records Department.
- ⌚ The present building of the National Archives was constructed in 1926, after the capital was shifted from Calcutta to Delhi in the year 1911. The design of this building was prepared by Sir Edwin Lutyens.
- ⌚ The transfer of all records from Calcutta to New Delhi was completed in 1937.
- ⌚ The National Archives is also the nodal agency for the implementation of the Public Records Act, 1993 and the Public Records Rules, 1997.



#### 40. Arctic Region and Melting Aspirations

According to a recent study, limiting global temperature rise to 1.5°C or 2°C as per the Paris Agreement may not stop the melting of Arctic sea ice in the summer season.

The first such warming season could possibly occur in the 2030s. Prior to this, it was believed that global warming could exceed 4.5 °C due to emissions from the world. Due to this, the Arctic region will become ice free by the year 2081-2100.

Earlier, a NASA study reported that, as a result of global warming, the extent of Arctic sea ice in summer is shrinking at a rate of 12.6 percent per decade.

##### Importance of Arctic sea ice:

- ⌚ Sea ice is lighter in colour, so it reflects more sunlight back into space than liquid water.
- ⌚ Thus it plays an important role in keeping the polar regions cool and maintaining the energy balance of the earth.
- ⌚ Sea ice also keeps the air cooler by forming a barrier between the cooler air above and the relatively warmer water below the surface.
- ⌚ Loss of sea ice can affect biodiversity. Also, it can harm mammals such as polar bears and walruses.
- ⌚ It may also influence the subsistence-hunting traditional lifestyle of indigenous populations such as the Yupik, Iñupiat and Inuit.
- ⌚ However, the resulting ice loss “could also provide commercial and economic opportunities”. This would open up shipping routes in the Arctic region and increase access to its natural resources.

#### 41. Tropical Cyclone Biparjoy

Recently, Cyclone Biparjoy changed its course and hit the Gujarat coast, due to which a high alert has been issued in Gujarat.

Cyclone Biparjoy was earlier moving towards the coast of Pakistan. However, now a forecast has been issued for it to hit the North Gujarat coast on June 15.

37 Cyclones originating in the Arabian Sea usually do not move towards the Indian coast.

More than 75% of these cyclones move north or north-west and reach the coast of Pakistan, Iran or Oman.



According to a recent study, the frequency of cyclonic storms in the Arabian Sea has increased by 52% over the period 2001 – 2019, making India’s west coast more vulnerable.

### Reasons for the increase in cyclonic storms in the Arabian Sea-

- ⌚ The temperature of both sea surface and deep water in the Arabian Sea is increasing.
- ⌚ The rising temperature is very favorable for making cyclones more intense. This allows the cyclone to remain strong for a longer period.
- ⌚ The frequency of El Niño Modoki phenomena is increasing. This creates favorable conditions for cyclone formation over the Arabian Sea.
- ⌚ Due to El Niño Modoki, warm-humid conditions are created in the central Pacific and dry-cold conditions are created in the eastern and western Pacific.
- ⌚ Biporjoy is a cyclonic storm in the Arabian Sea. It is named by Bangladesh. The word biporjoy means ‘disaster’ or ‘clarity’ in Bengali.

### 42. Country’s first Dimethyl Ether fueled tractor

The country’s first Dimethyl Ether (DME) fuel driven tractor has recently ushered in a new era of clean fuel applications.

Researchers at IIT Kanpur have developed 100% DME fuel driven engine with mechanical fuel injection system.

This innovation was supported by the Science and Engineering Research Board (SERB) under the Department of Science and Technology (DST). Also, it was in line with the “Methanol Economy” program of NITI Aayog.

### Dimethyl Ether (DME)

- ⌚ It is a colourless, non-toxic and highly inflammable gas under normal conditions, but it liquefies under slight pressure.
- ⌚ DME is mainly produced by converting natural gas, organic waste or biomass into synthesis gas (syngas). Syngas is a mixture of carbon monoxide and hydrogen.
- ⌚ The properties of DME are similar to those of Liquefied Petroleum Gas (LPG). It is used as a diesel substitute, in the chemical industry and as an aerosol propellant.



### Benefits of DME:

- ⌚ It exhibits high brake thermal efficiency. In addition, the cetane number of this fuel is also very high.
- ⌚ It emits very little hydrocarbons, carbon monoxide and carbon dioxide. Also, produces very little soot (soof).
- ⌚ It is a renewable form of fuel, and can help reduce India's oil import bill.
- ⌚ It can actually eliminate Particulate Emissions. The reason for this is that there is no bond between the carbon atoms in it.

### Challenges associated with DME:

- ⌚ Its energy density is low, the calorific value of this fuel is low,
- ⌚ The anti-knock performance is weak, and the engine needs some changes, etc.

### 43. Global DPI Summit successfully organized

Recently the Global Digital Public Infrastructure (DPI) Summit has been organized. The conference has been organized in Pune as part of the G20 Working Group (DEWG) meeting on the Digital Economy.

Under the chairmanship of India, the DEWG of the G20 has identified Digital Public Infrastructure (DPI) as a key priority area.

**The theme of this conference of DPI:** "DPI for Ease of Living, Ease of Doing Business and Ease of Governance".

### Key Findings of the DPI Conference:

- ⌚ India has signed a MoU with three countries (Armenia, Sierra Leone and Suriname) to share India Stack.
- ⌚ India has presented the concept of 'One Future Alliance'. It is a voluntary initiative.
- ⌚ The purpose of this Alliance is to bring together all countries and stakeholders to synergize, shape, prepare and design the future of DPI. In this way all countries will be able to use DPI.
- ⌚ DPI refers to a set of shared digital building blocks, such as applications, systems, and platforms. These are governed by interoperable open standards or specifications.
- ⌚ The DPIs commonly used in India are collectively known as the India Stack.



### Its 3 different levels:

- ⌚ Unique Identification (Aadhaar);
- ⌚ Improved payment system (Unified Payment Interface, Aadhaar Payment Bridge, Aadhaar Enabled Payment Service etc.); And
- ⌚ Data Exchange (DigiLocker and Account Aggregator).

### Advantages of DPI:

- ⌚ It enables better delivery of health and education services to accumulate human capital and promote growth.
- ⌚ It enhances access to payment and financial services.
- ⌚ Supports economic transformation and inclusive growth.
- ⌚ Promotes innovation and competition.
- ⌚ Narrows the gap in financial inclusion; Increases government revenue collection etc.

### 44. Protosterol Biota

Recently, scientists have discovered a “lost world” of ancient organisms in rocks billions of years old from northern Australia.

- ⌚ Scientists say that this discovery could change the world’s current understanding of the earliest ancestors of humans.
- ⌚ These microbes, known as the Protosterol Biota, are part of a family of organisms called eukaryotes and lived in Earth’s water world about 1.6 billion years ago. Eukaryotes have a complex cell structure that includes mitochondria, the “powerhouse” of the cell, and a nucleus. Modern forms of eukaryotes include fungi, plants, animals, as well as unicellular organisms such as amoeba.
- ⌚ Humans and all other nucleotide animals can trace their ancestry to the last eukaryotic common ancestor (LECA), which lived more than 1.2 billion years ago. Eukaryotes can be single-celled or multicellular.





#### 45. Coronal Mass Ejections (CME)

Scientists tracking the continuous evolution of the energy state of the center of a solar outburst that occurred on July 20, 2017 have found that it strangely maintains a constant temperature.

- ⌚ Coronal mass ejections (CMEs) are massive explosions of charged particles (plasma), and magnetic fields, from the solar atmosphere into space.
- ⌚ They can disrupt ground stations on Earth and a range of space-based communication technologies and satellites.

#### Coronal Mass Ejections:

- ⌚ Coronal mass ejections (CMEs) are massive eruptions of charged particles (plasma) and magnetic fields from the solar atmosphere into space. They can disrupt a range of geostationary and space-based technologies and satellites on Earth.
- ⌚ The evolution of the thermodynamic properties of CMEs, such as temperature and density, is important for understanding their effects on Earth's circulatory systems.
- ⌚ There is a wide range of plasma temperatures within CMEs, from cold chromospheric material (about 104 K) to hot plasmas (about 107 K).
- ⌚ CMEs can exchange energy (potential, electrical, kinetic, thermal, and so on) through a number of processes, which can heat or cool the plasma. Understanding CMEs will aid our ability to monitor space weather.

#### India's Solar Mission:

The Visible Emission Line Coronagraph on Aditya-L1, India's first solar mission, will perform both spectroscopy and imaging of CMEs in the inner corona, and provide new insights into the evolution of CME thermodynamic properties in the inner corona.

#### 46. Country's third anti-submarine warfare corvette 'Anjadeep'

'Anjadip', the 3rd of eight ships of ASW Shallow Water Craft (SWC) Project being built by M/s GRSE for Indian Navy, was launched at M/s L and T, Kattupalli.

#### INS Anjadeep

- ⌚ INS Anjadeep is the third ship in the eight Anti-Submarine Warfare Shallow water craft (ASW-SWC) series.
- ⌚ The ship has been named Anjadeep to reflect the strategic maritime importance of Anjadeep Island, located off Karwar.
- ⌚ The island is connected to the mainland by a breakwater, and is part of INS Kadamba.



### Anti-Submarine Warfare Shallow Water Craft (ASW SWC) Project

- ⌚ The contract for construction of eight ASW-SWC ships was signed between the Ministry of Defense and Garden Reach Shipbuilders and Engineers (GRSE), Kolkata in April 2019. INS Arnala was the first of the eight indigenously built ASW-SWCs.
- ⌚ Four ships under the ASW-SWC project are being built at GRSE, Kolkata and construction of the remaining four ships has been sub-contracted to M/s L&T Shipbuilding, Kattupalli.
- ⌚ The ASW-SWC ships are designed to conduct anti-submarine operations in coastal waters, low intensity maritime operations, mine laying and subsurface surveillance in coastal waters.
- ⌚ The ASW SWC ships have a displacement of 900 tonnes with a maximum speed of 25 knots and an endurance of 1800 nm.

### 47. 75 Years of United Nations Peacekeeping

Recently, the 75th anniversary of the beginning of UN Peacekeeping is being celebrated. The theme of this year-long global campaign is "Peace Begins With Me".

- ⌚ United Nations peacekeeping was started in 1948. It was initiated after the UNSC authorized the deployment of UN military observers to the Middle East.
- ⌚ There are currently 12 UN peacekeeping operations in operation. According to the United Nations Charter, the UNSC has the responsibility of conducting UN peacekeeping operations. The UNSC determines when and where UN peacekeeping is to be deployed.
- ⌚ It helps warring countries to establish lasting peace. Also, it supports the political process and protects citizens. It helps in disarmament and reduction of military deployment and guarantees a cease-fire.
- ⌚ It operates on the basis of three basic principles: consent of all parties, impartiality and non-use of force except in situations such as self-defense and defense of the mandate. In the year 1988, UN peacekeeping soldiers were awarded the Nobel Peace Prize.

### India and the United Nations Peacekeeping:

- ⌚ India has deployed over 200,000 troops in about 49 UN peacekeeping missions over the years.
- ⌚ India was the first country to deploy an all-women contingent under the United Nations Peace Keeping Mission in Liberia.
- ⌚ India has launched the UNITE Aware Platform in collaboration with the United Nations.
- ⌚ It is a situational awareness software program. It will use advanced surveillance technology for real-time threat assessment for peacekeepers.
- ⌚ India has provided COVID-19 vaccines for UN peacekeeping personnel across the world.



#### 48. 30th Anniversary of the Vienna Declaration and Action Plan

The World Human Rights Conference was organized in June 1993. The Vienna Declaration and Plan of Action (VDPA) were unanimously adopted at this conference.

- ⌚ Taking inspiration from the Universal Declaration of Human Rights (UDHR), 1948, VDPA representatives affirmed the universal and inalienable nature and interdependence of human rights.

##### **Vienna Declaration:**

- ⌚ The universal nature of all human rights and fundamental freedoms cannot be questioned in any way.
- ⌚ Everyone has the right to self-determination in the matter of freely determining their political status and freely pursuing their economic, social and cultural development.
- ⌚ International action has a key role in promoting and protecting human rights.
- ⌚ The consensus on the Vienna Declaration paved the way for historic agreements/steps in the following matters: Protection of the rights of women, children, indigenous peoples, minorities and other groups.
- ⌚ The struggle against impunity despite serious crimes of human rights violations resulted in the establishment of the International Criminal Court (ICC). However, some emerging challenges are blocking the full implementation of the UDHR and VDPA.

##### **Challenges:**

- ⌚ Digitization and climate change, inequalities, gender discrimination, hate speech, propaganda and increase in polarization etc.
- ⌚ The United Nations Human Rights Council is celebrating the year-long “Human Rights 75” initiative in 2023.
- ⌚ Its purpose is to call on states and all other stakeholders to take concrete steps to fulfill the promises of the Universal Declaration of Human Rights.

#### 49. US Senate panel approves measure to strip China of ‘developing’ status

Recently a committee of the US Senate has approved legislation to end China’s “developing country” status.

- ⌚ This law will pave the way for an American policy. Under this policy, China will not be treated as a developing country in future treaties and international organizations. Earlier, a similar law was also passed by the US House of Representatives.
- ⌚ Under this law, it has been claimed that China can no longer be considered a developing country. This is because of its vast economy, military power and the extensive investments it is making around the world.



- ⌚ The World Trade Organization (WTO) has not defined 'developed' and 'developing countries'. Therefore, the member countries are free to declare themselves whether they are 'developed' or 'developing'.
- ⌚ The United Nations has also not set any formal definition of developing countries. Yet he continues to use the term for surveillance purposes.

#### **Benefits of developing country status:**

- ⌚ Such countries are treated preferentially in terms of access to the global market, access to credit, lack of government support, and technical assistance from international organizations.
- ⌚ Developing countries are given some additional time to fully implement a WTO agreement.
- ⌚ Some developed countries extend the benefits of unilateral preference schemes to developing countries, such as the Generalized System of Preferences (GSP) scheme of the United States.
- ⌚ Developing countries are treated favorably with respect to issues such as climate change responsibilities.

#### **50. Indonesia's Anak Krakatoa volcano erupts**

Recently, Indonesia's Anak Krakatau volcano erupted twice in just one hour, sending volcanic ash up to 3,000 meters (9,843 ft) into the air.

- ⌚ The 157-metre (515.09 ft) high Anak Krakatoa, located in Indonesia's Sunda Strait between the islands of Java and Sumatra, has erupted more than 10 times since March this year.
- ⌚ Indonesia is located in the Pacific "Ring of Fire", and has 127 active volcanoes.
- ⌚ The eruption of Anak Krakatoa in December 2018 triggered an underwater landslide, which triggered a tsunami that killed at least 430 people.

#### **51. Public view on Uniform Civil Code: Law Commission**

The 22nd Law Commission wants to know the opinion of public and religious organizations on Uniform Civil Code (UCC).

The 22nd Law Commission will comprehensively re-evaluate the UCC in the light of its importance and several court judgements. This will ensure a thorough investigation of the subject.

Earlier in 2016, the Ministry of Law and Justice had directed the Law Commission to examine all matters relating to the implementation of the UCC. In the context of this direction, the Law Commission submitted a consultation paper on Reform of Family Law in 2018.



### Views in Consultation Paper:

- ⌚ UCC is “neither necessary, nor desirable at this stage”.
- ⌚ It suggested that the existing family laws should be amended and codified.
- ⌚ This will deal with the discrimination and inequality present in personal laws.
- ⌚ Uniform Civil Code (UCC) is a single law that applies to all citizens in their personal matters (such as marriage, divorce, adoption and inheritance).
- ⌚ Its objective is to change the system of different personal laws existing in the country. These laws currently govern interfaith relations and related matters within different religious communities.
- ⌚ It comes under Article-44 (Directive Principles of State Policy) of the Constitution. According to this article, the state shall endeavor to enforce a uniform civil code for the citizens throughout the territory of India.

### 52. UNGA Resolution on “Memorial Wall for Fallen United Nations Peacekeepers”

Recently, the United Nations General Assembly has adopted a draft resolution moved by India to set up a memorial wall at the UN Headquarters to honor fallen peacekeepers.

India’s Permanent Representative to the United Nations Ruchira Kamboj presented the draft resolution titled ‘Memorial Wall for Fallen United Nations Peacekeepers’ at the UN General Assembly Hall. The resolution was co-sponsored by nearly 190 UN member states and adopted unanimously.

India steered the adoption of a resolution in the United Nations General Assembly to set up a memorial wall for fallen peacekeepers. The resolution was co-sponsored by nearly 190 UN member states, and adopted unanimously.

The resolution was presented by 18 countries including Bangladesh, Canada, China, Denmark, Egypt, France, India, Indonesia, Jordan, Nepal, Rwanda and the US.

The resolution states that the wall should be completed within three years of the adoption of the text. It is noteworthy that in 2015, the Permanent Mission of India to the United Nations launched a virtual memorial wall dedicated to Indian soldiers who made the supreme sacrifice while on active service as UN peacekeepers. This initiative was a precursor to the eventual construction of the Peacekeepers Memorial Wall.

India had proposed the construction of the Memorial Wall as a fitting way to remember all the soldiers of UN member states who laid down their lives while on duty under the Blue Flag of the United Nations.



### 53. Internet Shutdown

According to a recently released report, internet shutdowns have been done for the most number of times in the last 3 years to curb the protests.

This report has been released by Internet Freedom Foundation (IFF), and Human Rights Watch (HRW).

Internet shutdown includes completely prohibiting access to the Internet, slowing down Internet-speed or restricting certain content.

#### Key Points of Report:

- ⌚ In India, from 2020 to 2022, 18 states had at least one internet shutdown. In the same period, the maximum number of internet shutdowns was done in Rajasthan.
- ⌚ The internet shutdown in the Union Territory of Jammu and Kashmir is not included in this report.

#### The local administration has used the internet shutdown for the following purposes-

- ⌚ Control communal violence (18 cases),
- ⌚ Prevent cheating in school examinations (37 cases),
- ⌚ Control protests (53 cases) etc.

#### Impact of Internet Shutdown:

- ⌚ **Economic impact:** Businesses and trade currently depend on digital technologies, so internet shutdowns have a severe impact on all economic sectors.
- ⌚ This has serious implications for fundamental rights. These include the right to speak, the right to conduct business, the right to express dissent and the right to free movement of people within the state.
- ⌚ This disrupts basic services like education, health care and other public services.
- ⌚ **Risk to Privacy:** It puts the privacy and security of the users at risk.

#### Legal provisions for internet shutdown:

- ⌚ In the year 2017, the Temporary Suspension of Telecom Services (Public Emergency and Public Safety) Rules were notified.
- ⌚ From 2017, suspension of telecom services (including internet shutdown) is done under these rules. These rules were notified under the Indian Telegraph Act, 1885.



- ⌚ The 2017 rules provide for temporary restriction of telecom services in an area on grounds of public emergency. Restrictions under these can be implemented for a maximum of 15 days at a time.
- ⌚ Only Union or State Home Secretary can issue an order for internet shutdown. In unavoidable circumstances, an officer of the level of Joint Secretary or above, authorized by the Home Secretary of the Center or the State, can also issue an order for internet shutdown.

#### 54. VAIBHAV Fellowship Programme

Recently the Government of India has launched a new fellowship program called Vaishvik Bhartiya Vaigyanik (VAIBHAV) to facilitate collaboration between the Indian diaspora in Science, Technology, Engineering, Mathematics and Medicine (STEMM) and Indian academic and research institutions.

The VAIBHAV Summit was also organized as an event dedicated to connecting the Indian STEMM diaspora with Indian institutions.

#### VAIBHAV Fellowship Programme

- ⌚ The Vaishvik Bhartiya Vaigyanik (VAIBHAV) fellowships programme to be implemented by the Department of Science and Technology (DST), Ministry of Science and Technology.
- ⌚ The 75 selected fellows would be invited to work in 18 identified knowledge verticals including quantum technology, health, pharma, electronics, agriculture, energy, computer sciences, and material sciences amongst others.

#### Salient Features of VAIBHAV Fellowship Programme:

- ⌚ **Knowledge Verticals:** The program will focus on 18 identified knowledge verticals, which include quantum technology, health, pharmaceuticals, electronics, agriculture, energy, computers and science.
- ⌚ **Eligibility:** The Fellowship is open to outstanding scientists and technologists of Indian origin (Non-Resident Indian (NRI)/Non-Resident Indian of Indian Origin/Overseas Citizen of India (OCI)) who are actively engaged in research activities in their respective countries.
- ⌚ **Collaboration Period:** Selected Fellows will have the opportunity to conduct research in collaboration with Indian higher education institutions, universities and publicly funded scientific institutions. They can reside in an Indian institution of their choice for two months per year, up to a maximum of three years.
- ⌚ **Funding for Fellowship:** This will ensure a conducive environment for fellowship research including travel, accommodation and contingencies, international and domestic travel expenses, accommodation and contingencies.



### Government of India's Initiatives for Overseas Indians:

- ⌚ Pravasi Bharatiya Divas (PBD) is celebrated every year on 9 January to mark the contribution of the overseas Indian community in the development of India.
- ⌚ The Know India Program (KIP) is a flagship initiative of the Ministry of External Affairs (MEA) to engage with the diaspora, to introduce Indian-origin youth (18-30 years) to their Indianness and contemporary India.
- ⌚ The Vajra (Visiting Advanced Joint Research) Faculty Scheme of the Department of Science and Technology enables NRIs, and overseas scientific communities, to participate and contribute to research and development in India.

### 55. Scientists Create Human Embryo-Like Structures with Stem Cells

Recently, a team of scientists from UK and USA has made a major breakthrough in the field of In Vitro Fertilization (IVF) and human reproduction.

- ⌚ These scientists have developed the world's first artificial human embryo-like structures using stem cells. These embryos appear to be similar to natural embryos from early stages of human development.
- ⌚ Although these artificial human embryo-like structures lack the development of a beating heart or brain, they do contain cells that can form into a placenta, yolk sac, and embryo.

#### Importance of new achievement:

- ⌚ This will help in understanding the effects of genetic disorders and biological causes of recurrent miscarriage.
- ⌚ Reportedly, neither eggs nor sperm would be needed for the creation of a human embryo.

#### Stem Cells:

- ⌚ These are stem cells, which have the unique ability to develop into specialized cell types of the body.
- ⌚ As the body develops, stem cells continue to provide new cells. Also, they replace specialized cells that have been damaged or destroyed.

#### Types of Stem Cells:

- ⌚ **Embryonic stem cells:** These cells are formed during the blastocyst stage of the embryo. These are pluripotent, but do not contribute to the development of extra-embryonic cells such as the placenta.
- ⌚ **Adult Stem Cells:** These cells are found in specific tissues. They repair and build cells of these tissues only.





- ⌚ **Induced pluripotent stem cells (iPS):** These are created by fusion of adult stem cells with embryonic stem cells. They help in medical treatment.

## 56. Improvement in India-Africa trade

Recently the Union Minister detailed the progress made in bilateral trade of both the sides at the 18th CII-EXIM Bank Conclave on India-Africa Growth Partnership.

- ⌚ India's bilateral trade with Africa was set to increase by 9.26% to about \$100 billion in the financial year 2022-23. India aims to double the trade volume to US\$ 200 billion by 2030.
- ⌚ India-Africa bilateral trade is in balance. Exports to the tune of US\$ 51.2 billion and imports to the tune of US\$ 46.65 billion in the financial year 2022-23.

### India-Africa Partnership:

- ⌚ The partnership between the two sides has a long history. There has been solidarity and political contact between India and Africa since the early 1920s.
- ⌚ This was the period when India and African countries were fighting against the colonial rule and their oppression.
- ⌚ However, India's economic partnership with Africa began to grow rapidly in the early 2000s.

### Importance of Africa for India:

- ⌚ Africa has abundant reserves of mineral oil and natural gas. These reserves can help ensure India's energy security.
- ⌚ The African region (especially the Horn of Africa region) is critical to India's security.
- ⌚ The support of African countries becomes crucial in India's ambition to get permanent membership of the United Nations Security Council (UNSC).

### Development initiatives taken by India in Africa:

- ⌚ 27 Least Developed Countries (LDCs) in Africa are benefiting from duty-free tariff preference on a non-reciprocal basis.
- ⌚ India provides concessional Line of Credit (LoC) to African countries for construction of railway lines, electrification projects, agricultural mechanization etc.
- ⌚ Several African countries are participating in the International Solar Alliance (ISA).
- ⌚ Initiatives like e-Vidya Bharti, e-Arogya Bharti, Vaccine Maitri have been started.



### 57. IREDA participates in 'Intersolar Europe 2023' Exhibition

Recently a three-day Intersolar Europe 2023 exhibition was organized in Munich, Germany. Indian Renewable Energy Development Agency (IREDA) participated in this exhibition.

- ⌚ The organization had the opportunity to provide global exposure to its initiatives in financing renewable energy projects, promoting energy efficiency and supporting the development of India's renewable energy sector at the expo.

#### Intersolar Europe

- ⌚ Intersolar Europe is the world's leading exhibition for the solar industry and is held annually in München, Munich, Germany.
- ⌚ Both the exhibition and the conference focus on the areas of photovoltaics, solar thermal technologies, solar plants as well as grid infrastructure and solutions for the integration of renewable energy.
- ⌚ In the more than 30 years since its establishment, Intersolar Europe has become the most important industry platform for manufacturers, suppliers, distributors, service providers and partners of the solar industry.
- ⌚ Intersolar Europe is part of The Smarter e Europe, which includes a total of four exhibitions, a comprehensive program as well as parallel conferences.

#### Main objectives of IREDA:

- ⌚ To provide financial assistance to specific projects and schemes for generation of electricity and/or energy through new and renewable sources and for energy conservation through energy efficiency.
- ⌚ To maintain its position as a leading institution for providing efficient and effective financing for renewable energy and energy efficiency/conservation projects.
- ⌚ Enhancing IREDA's share in the renewable energy sector through innovative financing.
- ⌚ Improving the efficiency of services provided to customers through continuous improvement of systems, processes and resources.
- ⌚ To strive to remain a competitive organization through customer satisfaction.

### 58. Subsidies don't help fight climate change

According to a recently released World Bank report, subsidies do not help fight climate change.

#### Key findings of report:

- ⌚ The report highlights the negative consequences of ineffectively subsidizing the agriculture, fisheries and fossil fuel sectors.



- ⌚ It has been said in this report that several trillion dollars of subsidies are being provided to these sectors indirectly and directly. These sectors, in turn, are exacerbating the negative effects of climate change.
- ⌚ These subsidies amount to over 8% of global GDP.
- ⌚ The distribution of subsidies across regions and countries is highly uneven and unequal.

#### **Effects of Subsidies:**

- ⌚ Agricultural subsidies are responsible for the loss of 2.2 million hectares of forests per year, or 14% of global deforestation.
- ⌚ The ever-increasing use of fossil fuels is encouraged in one way or another by subsidies. It is a major cause of 7 million premature deaths every year due to ever-increasing air pollution.
- ⌚ More than \$35 billion is being subsidized annually for fisheries. Due to this, the stock of fish is decreasing, and the number of big fishing vessels is increasing. Due to this, the profitability of the fishing sector is decreasing.

#### **Guiding Principles for Successful Subsidy Reforms:**

- ⌚ Public acceptance has to be built and the credibility deficit addressed;
- ⌚ Complementary measures have to be implemented to improve the effectiveness and reduce the cost of reforms;
- ⌚ Short-term price shocks have to be mitigated through social security and compensation;
- ⌚ Regressive subsidies must be phased out through careful and phased reduction;
- ⌚ Revenue has to be redistributed through long-term reinvestment with equal or progressive returns.

### **59. Remittances Remain Resilient but Likely to Slow**

Recently, the World Bank in its latest 'Migration and Development Brief Report' has underlined the slowdown in remittance flows across the world.

#### **Key findings of report:**

- ⌚ In the year 2022, remittance inflows in India were to increase by more than 24% to reach a record high of \$111 billion. In the year 2023, it is estimated to increase by only 0.2%.
- ⌚ About 36% of remittance flows to India come from the United States, the United Kingdom and Singapore.
- ⌚ Remittance flows to low- and middle-income countries (LMICs) are projected to grow by only 1.4% in 2023. There was an increase of 8% in the year 2022.
- ⌚ South Asia is likely to have the lowest remittance growth rate (0.3%). The reason for this is the high base in the year 2022 along with the decrease in demand for highly skilled IT personnel in the United States and Europe.
- ⌚ Remittance refers to the transfer of money by migrant workers to their country of origin. Migrant workers usually send money to their families living in their home countries.



### Effect of remittance:

- ⌚ It is an important source of foreign exchange for a country. Also, it helps to strengthen the value of the local currency.
- ⌚ Remittances contribute about 3% to India's GDP.
- ⌚ It increases consumer demand for goods and services.

### 60. World Day against Child Labour

UN-World Day against Child Labor observed on June 12, 2023. This year the theme of the day was "Social Justice for All; End Child Labour".

- ⌚ According to an estimate, 160 million children in the world do labor for their livelihood. This means that almost one out of every 10 children is working as a laborer somewhere instead of going to school.
- ⌚ Child trafficking can be seen in many forms such as domestic labor, forced child labor in industries, beggary, human organ trade and commercial sexual exploitation.
- ⌚ According to the National Crime Records Bureau (NCRB), eight children were trafficked every day in India for labour, beggary and sexual exploitation in 2021.

### Reasons Responsible for Child Trafficking

- ⌚ Poverty and hunger, lack of employment, caste and community based discrimination,
- ⌚ Unfair practices in rural areas, and other external factors like COVID-19 pandemic, climate change, etc.

### Anti-Trafficking Laws in India

- ⌚ **Immoral Traffic (Prevention) Act, 1956:** This law prohibits immoral traffic and prostitution.
- ⌚ **The Ashram System (Abolition) Act, 1976:** This law abolished the bonded labor system to prevent economic and physical exploitation of the weaker sections of the people.
- ⌚ **Transplantation of Human Organs and Tissues Act, 1994:** This law makes the commercial use of human organs a punishable offence.
- ⌚ **Protection of Children from Sexual Offences (POCSO) Act, 2012:** This law provides protection to children from crimes like sexual offences, sexual harassment and pornography.



## 61. Arbitration and Conciliation Act, 1996

Recently, the Ministry of Law and Justice has constituted an expert committee to reform the Arbitration and Conciliation Act.

- ⌚ Amidst intensified efforts to make India a hub for international arbitration, an expert committee has been constituted under the chairmanship of TK Vishwanathan, former Secretary, Department of Law.
- ⌚ The committee will recommend reforms in the Arbitration and Conciliation Act, 1996 to reduce the judicial burden on the courts.
- ⌚ The committee will recommend a framework for an ideal arbitration system. The system will be efficient, effective and affordable as well as meet the needs of the users.

### Arbitration and Conciliation Act, 1996

- ⌚ The law seeks to include rules relating to domestic arbitration, international commercial arbitration, foreign arbitration arbitration and conciliation.
- ⌚ The law draws its authority from the United Nations Commission on International Trade Law (UNCITRAL) Model Law on International Commercial Arbitration, 1985 and the UNCITRAL Rules on Conciliation, 1980. It was revised in 2015, 2019 and 2021.

### Five Types of Alternative Dispute Resolution (ADR) Negotiation

It is traditionally concluded on a face-to-face basis between the parties concerned and their solicitors. It does not involve a neutral third party.

- ⌚ **Mediation:** It is a very flexible process. This can be used effectively at any point during a dispute.
- ⌚ **Collaborative law:** Under this both the parties are represented by a collaborative lawyer and both the parties agree not to litigate.
- ⌚ **Arbitration:** Under this, a decision is made by a neutral arbitrator after the presentation of evidence, which is also called arbitration.
- ⌚ **Conciliation:** Under this, a neutral third party, on the basis of information received from the concerned parties, provides options for a negotiated settlement.

## 62. SEBI Issues Guidelines On Product Offerings By Online Bond Platform Providers

Recently the Securities and Exchange Board of India (SEBI) has issued guidelines on offering of products by Online Bond Platform Providers (OBPPs).

- ⌚ SEBI has prohibited OBPPs from offering products other than listed debt securities on their platform.



- ⌚ SEBI has permitted them to offer securities like Government Securities, Treasury Bills, Listed Sovereign Gold Bonds.
- ⌚ OBPPs have to get themselves registered as stock brokers in the debt segment of the stock exchange. The holding company, subsidiary or associate company of OBPPs shall neither use the brand name nor offer unregulated products. SEBI has defined Online Bond Platform (OBP) as an electronic system other than a recognized stock exchange.
- ⌚ Debt securities (which are listed or proposed to be listed) are offered and traded on this system. For example, Bonds India, Golden Pi etc.
- ⌚ A person who provides or operates such a platform is called an OBPP. Bond is a debt instrument, which provides debt for a long period of time. Under a bond, the investor typically lends money to a corporate or government.
- ⌚ In this, the corporate or government borrows money at a variable or fixed rate of interest for a specified period. Bonds are used by companies, municipalities, states and sovereign governments to raise money.

#### Types of Bond:

- ⌚ **Fixed-rate bond:** The interest rate remains constant throughout the term of the bond.
- ⌚ **Floating-rate bonds:** The interest rate (coupon) in these bonds fluctuates according to the current market reference rate.
- ⌚ **Zero-coupon bond:** It does not pay any regular interest to investors and issuers. Bond holders are paid only the principal amount.

### 63. Three theatre commands on anvil as tri-services 'concur'

Recently, it has been agreed to establish three theater commands in the Indian Army, Navy and Air Force by 2024. Each of these commands will be headed by a senior three star general (Lieutenant General, Air Marshal and Vice Admiral).

- ⌚ These three commands will manage the Northern Border with China, the Western Border with Pakistan and the Maritime Command for Peninsular India. In this, the original proposal of the Air Defense Command (ADC) has been rejected.
- ⌚ A theater command is a unified command of all three armed forces (Army, Air Force and Navy) established for the security of a specified geographical area. Under this, a certain number of military personnel are appointed from all the three forces. It is under a commander. The Shekatkar Committee and the Kargil Review Committee had also recommended the formation of Theater Commands.
- ⌚ There are a total of 19 military commands in India. Of these, 17 are service-based. These are 7 related to the Army, 7 related to the Air Force and 3 related to the Navy.



**Currently there are only two Joint Commands in India:**

- ⌚ **Andaman and Nicobar Command:** It is a geographical command.
- ⌚ **Strategic Military Command:** It is a functional command. It manages the country's nuclear arsenal.

**Importance of Theater Command:**

- ⌚ a system in a cost-effective manner that enables integrated military operations during war.
- ⌚ This will help in enhancing synergy and coordination among the three services and in more effective management of national security challenges.
- ⌚ This will also help in effective planning and military operations.

**64. Gita Press, Gorakhpur to be Awarded Gandhi Peace Prize for the Year 2021**

Recently, the Gandhi Peace Prize for the year 2021 has been announced to be given to Gita Press, Gorakhpur.

- ⌚ After deliberations on June 18, 2021, the jury chaired by the Prime Minister has unanimously selected Geeta Press, Gorakhpur for the Gandhi Peace Prize for the year 2021.
- ⌚ The award has been given to Geeta Press, Gorakhpur for its outstanding contribution in bringing about change in the social, economic and political spheres through non-violence and other Gandhian ideals.

**Gandhi Peace Prize**

- ⌚ The Gandhi Peace Prize is given annually by the Government of India. The award was instituted in the year 1995 on the occasion of the 125th birth anniversary of the Father of the Nation, Mahatma Gandhi, as a tribute to his ideals.
- ⌚ The award is open to all persons without distinction of nationality, race, language, caste, creed or sex.
- ⌚ The award carries an amount of one crore rupees, a citation, a plaque and an outstanding traditional handicraft/handloom masterpiece.
- ⌚ Past awardees include organizations such as ISRO, Ramakrishna Mission, Grameen Bank of Bangladesh, Vivekananda Kendra (Kanyakumari), Akshaya Patra (Bengaluru), Ekal Abhiyan Trust (India) and Sulabh International (New Delhi).
- ⌚ In recent years Sultan Qaboos bin Said Al Said of Oman in 2019, and Bangabandhu Sheikh Mujibur Rahman of Bangladesh in 2020 have been awarded the Gandhi Peace Prize.

**Gitapress, Gorakhpur**

- ⌚ Gita Press established in the year 1923 is one of the largest publishers in the world. It has published 41.7 crore books in 14 languages, including 16.21 crore Shrimad Bhagavad Gita books. This organization has never taken advertisements for its publications for revenue generation.



## 65. Light pollution is skyrocketing

Recently scientists have warned that due to light pollution, it will not be possible for us to see stars in the sky in the next two decades.

- ⌚ Scientists say that the night sky is becoming more illuminated at a rate of about 10% per year due to the increase of light pollution.
- ⌚ Light pollution is increasing rapidly. This has accelerated especially since 2016, when astronomers reported that almost a third of the world's population could not see the Milky Way.
- ⌚ Such artificial light (usually outside the houses) which is excessive, misdirected, or causing disturbance is called Light or Photo pollution.

### Components of Light Pollution:

- ⌚ **Glare:** Excessive brightness that causes discomfort in vision.
- ⌚ **Skyglow:** The glow of the night sky over populated areas.
- ⌚ **Light trespass:** The use of light where it is not needed or where it causes inconvenience to others.
- ⌚ **Lighting Clutter:** When there are too many bright and confusing lights at one place, it is called Clutter.

### Impact of Light Pollution-

- ⌚ Specifically, it has adverse health effects on humans and their natural physiological cycles, ie circadian rhythms.
- ⌚ Circadian rhythms are physical, mental, and behavioral changes that follow a 24-hour cycle.
- ⌚ Due to this astronomical research gets hampered.
- ⌚ It hinders the migration and hunting of nocturnal wildlife, especially birds
- ⌚ This causes disorientation in terrestrial animals such as Olive Ridley sea turtles.

### Measures to prevent light pollution:

- ⌚ The brightness of the light can be reduced;
- ⌚ blue-white light should be used sparingly;
- ⌚ It must be ensured that the light has a high red and orange color component;
- ⌚ Motion sensor should be used so that light can be turned on only when needed (there is some movement) etc.





## 66. G20 Agriculture Ministers Meeting

The G-20 countries have adopted an agreed outcome document for the first time. The title of this document is: “**Outcome Documents and Chairs Summary**”.

Four priority sectors have been outlined in this meeting.

1. Promoting agricultural diversification and improving social protection systems to enhance food security and nutrition.
2. Financing climate-resilient technologies for sustainable agricultural production.
3. Promoting inclusive growth through resilient agricultural supply chains.
4. Emphasis on digitization of agriculture sector and standardization of agricultural data platforms.

### Two major components in the Outcome Document -

#### Deccan High Level Principles:

These principles have demonstrated the G20 collective responsibility to:

- 🕒 In dealing with global food security crises;
- 🕒 providing humanitarian assistance to vulnerable countries and populations;
- 🕒 strengthening food security systems and providing access to nutritious food;
- 🕒 Focusing on climate smart and climate resilient agriculture supply chains etc.

#### INTERNATIONAL MILLETS AND OTHER ANCIENT FOODS RESEARCH INITIATIVE (MAHARISHI):

- 🕒 The objective of this initiative is to advance research collaboration and create awareness about millets and other ancient cereals, in the International Year of Millets, 2023 and beyond. It may be noted that the United Nations General Assembly has declared the year 2023 as the International Year of Nutritious Cereals.
- 🕒 In this meeting, India proposed that the African Union should be granted full membership of the G20 at the upcoming Delhi summit. The African Union is made up of 55 member states. It represents all the countries of the African continent. It has permanent observer status in the United Nations General Assembly.

## 67. Jammu & Kashmir, Ladakh Felt Back-To-Back Tremors

Recently several earthquakes of low intensity have been recorded in Jammu-Kashmir and Ladakh within a span of 24 hours. It may be noted that the geological structure of the Himalayas makes this region particularly vulnerable to earthquakes.

- 🕒 This is because its geology is mainly determined by the collision of the Indian tectonic plate with the Eurasian plate. According to scientists, this collision is still going on.



- ⌚ The Indian plate is subducting under the Eurasian plate in the north and north-east direction.

**Geology of the Himalayas in its southern part consists of the following three major tectonic units:**

1. Main Central Thrust (MCT)
2. Main Boundary Thrust (MBT)
3. Himalayan Frontal Thrust (HFT) or Main Frontal Thrust (MFT)

Of these, MCT is the highest and oldest. It is a downward fault in the northernmost direction. The MCT forms a tectonic contact between the Great and the Lesser Himalayas. The MBT separates the Lesser Himalayas and the Shivalik Himalayas. The HFT is the southernmost and newest thrust.

All these three faults connect with the 'Basal Detachment Plane'. It is called 'Decollement' in geophysical language. This plane is called 'Main Himalayan Thrust' (MHT).

Both the MBT and HFT faults are believed to be more active than the MCT in the present era.

There is a stretch of about 700 km in the central Himalayas where the MFT has shown no signs of fragmentation for several centuries. This is called the 'Central Seismic Gap'. Seismic gap zones are areas at high risk for future earthquakes of greater magnitude.

### 68. Leadership in Energy and Environmental Design (LEED)

Recently, India has overtaken the US and China in the Leadership in Energy and Environmental Design (LEED) net zero certification.

- ⌚ The LEED rating system provides a framework for healthy, efficient, low-carbon based and cost-effective green buildings.
- ⌚ It is a globally recognized certification system. It is called U.S. Developed by the Green Building Council. It is administered by the Green Business Certification Corporation.
- ⌚ Under this, buildings are recognized at four certification levels. These are the four levels – Certified, Silver, Gold and Platinum. LEED India program is administered by the Indian Green Building Council (GBC).
- ⌚ LEED Zero is a complement to LEED certification. It recognizes projects that have achieved net zero or net positive status in the categories of carbon, energy, water or waste. There are 73 LEED Zero certified projects in India. This is 45% of the total of over 150 LEED Zero certifications.
- ⌚ About a third of India's total carbon emissions come from the building and other construction sector. Haryana and Tamil Nadu are the leading states in certification. India's DLF Group is a global leader in overall Lead Zero certification.



- ⌚ The Green Rating for Integrated Habitat Assessment (GRIHA) is India's own green building rating system. The system has been jointly developed by The Energy and Resources Institute (TERI) and the Ministry of New and Renewable Energy.
- ⌚ GRIHA is a five star rating system. Its rating is valid for a period of 5 years.

#### **Other initiatives for green building in India -**

- ⌚ IGBC Rating Systems,
- ⌚ Energy Conservation Building Code prepared by Bureau of Energy Efficiency (BEE);
- ⌚ BEE rating system for commercial buildings etc.

### **69. India gifts missile corvette INS Kirpan to Vietnam**

Recently India has gifted INS Kirpan to Vietnam to boost defense ties with it.

- ⌚ INS Kirpan is a Khukri class missile corvette. It can perform a variety of roles in coastal and offshore patrolling, coastal security, surface warfare, anti-piracy etc.
- ⌚ Defense cooperation is considered a part of defense diplomacy. It is an ideal means of furthering national foreign policy objectives.
- ⌚ This can help in laying the groundwork for friendship on a global scale, preventing conflicts, promoting mutual trust and capabilities, etc.

#### **Importance of defense cooperation in meeting foreign policy goals:**

- ⌚ This will enhance the security of the immediate neighborhood and the Indian Ocean Region (IOR).
- ⌚ Joint capability to face natural calamities and unrest in neighboring countries will improve.
- ⌚ Apart from India's neighboring countries, it will also help in strengthening relations with major global powers and creating a 'base of friendship'.
- ⌚ Capabilities of one's own armed forces can be enhanced by exposure to other nations' technologies, organizations, doctrines, concepts, etc. Domestic defense industry will get a boost. India currently has defense cooperation agreements with more than 53 countries.

### **70. Phonon splitting using quantum mechanics**

Recently physicists have succeeded in splitting phonons using quantum mechanics.

- ⌚ Scientists have successfully split the phonon. In addition, scientists have also demonstrated the properties and ability of phonons to manipulate and control quantum states.
- ⌚ Phonons are in a quasiparticle state. These represent the collective vibrations of atoms or molecules in a solid substance.



- ⌚ This achievement could lead to the development of sound-sensitive quantum computers or ultra-sensitive measuring instruments in the future.
- ⌚ Currently, photons (particles of light) are used as qubits in linear optical quantum computing. Qubits are the basic unit of information in a quantum computer.
- ⌚ Both the photon and the phonon are important topics for quantum computing research. However, studying phonons is challenging due to their high sensitivity to sound and problems with scalability and detection.

#### **Photon:**

- ⌚ Photons are tiny packets of energy present in light or electromagnetic waves.
- ⌚ Photons can also travel in vacuum.
- ⌚ Photons of different wavelengths usually do not interact.
- ⌚ Photons exhibit both particle and wave properties. Hence it is also known as “wave-particle duality”.

#### **Phonons:**

- ⌚ Phonons are tiny packets of energy present in sound waves.
- ⌚ Phonons need a medium like air or water to travel.
- ⌚ Phonons of different wavelengths collide with each other and interact, or mix. This causes them to produce a different wavelength.

### **71. Gender Gap Report, 2023: ‘World Economic Forum’**

- ⌚ Recently the World Economic Forum (WEF) has released the annual Gender Gap Report, 2023.

#### **Key Findings of the Index**

- ⌚ India ranks 127 out of 146 countries in terms of gender equality. There has been an improvement of eight places from last year.
- ⌚ India was ranked 135th in the 2022 edition of the report. The country has improved by 1.4 percentage points and eight places since the last edition, indicating partial improvement towards the 2020 parity level.
- ⌚ India has achieved equality in enrollment at all levels of education.



- ⌚ India has reduced the overall gender gap by 64.3%. However, it was pointed out that India has reached only 36.7% equality level on economic participation and opportunity.
- ⌚ India's neighbors Pakistan at 142nd, Bangladesh at 59th, China at 107th, Nepal at 116th, Sri Lanka at 115th and Bhutan at 103rd rank in the index.
- ⌚ According to the 2023 Global Gender Gap Index, no country has yet achieved full gender equality. However, the top nine countries (Iceland, Norway, Finland, New Zealand, Sweden, Germany, Nicaragua, Namibia and Lithuania) have closed at least 80% of their gender gap.
- ⌚ According to the report, it will take 131 years to reach full gender parity at the current rate of closing the gender gap.
- ⌚ For the 14th year in a row, Iceland (91.2%) holds the top spot. It remains the only country to have reduced its gender inequality gap by more than 90%. The global top five includes three other Nordic countries- Norway (87.9%, 2nd), Finland (86.3%, 3rd) and Sweden (81.5%, 5th) – a country in the East Asia and Pacific region – New Zealand (85.6%, 4th).
- ⌚ The report noted that in India, while pay and income equality has increased, the share of women in senior positions and technical roles has declined slightly since the last census.
- ⌚ India has recorded 25.3% equality in terms of political empowerment, with women representing 15.1% of parliamentarians. This is the highest for the country since the first gender gap report was released in 2006.
- ⌚ The Global Gender Gap Index annually measures the current status and development of gender equality across four key dimensions (economic participation and opportunity, educational attainment, health and survival, and political empowerment).

## 72. TRAI releases recommendations on 'Licensing Framework

Recently Telecom Regulatory Authority of India (TRAI) has issued recommendations related to 'Licensing Framework and Regulatory Mechanism for laying of submarine cables in India'.

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Through this framework, the rules related to setting up submarine (under the sea) Cable Landing Station (CLS) in India will be simplified.



In August 2022, the Department of Telecom raised concerns related to Submarine Cable (SMC) and Cable Landing Station (CLS). It was also asked to make some recommendations to address these concerns.

SMCs are laid on the seabed. It connects countries digitally. Also, they interconnect terrestrial telecommunication networks.

In contrast, CLS is the place in the country where a submarine cable comes above ground (CLS).

**Key Points:**

Operation and Maintenance services of CLS and Submarine Cable (SMC) can be given the status of Essential Services and Critical Information Infrastructure (CII).

**CLS and Submariner:**

- ⌚ Goods and materials required for operation and maintenance of cables should be exempted from customs duty and GST.
- ⌚ Applications for Environmental Impact Assessment (EIA) and Coastal Regulation Zone (CRZ) clearance required for SMC and CLS can also be done online as a part of the Saral Sanchar portal.
- ⌚ A clause should be included in the Indian Telecom Bill, 2022 to promote, protect and give priority to 'CLS' and 'SMC' in India.
- ⌚ The Bill provides a mechanism for using the right of way to create telecom infrastructure. 'Right of way' means the right of way through real property owned by another person/entity.

**73. Turnover on e-NAM to cross Rs 1 trillion this fiscal**

e-NAM (National Agriculture Market) is a pan India electronic trading portal. It was launched in 2016. This portal connects the existing Agricultural Produce Market Committee mandis together.

The portal creates a unified national market for agricultural commodities through the following features:

- ⌚ Streamlining processes across integrated markets,
- ⌚ Bridging information gaps between buyers and sellers, and
- ⌚ By promoting pricing of commodities on a real-time basis. This portal is fully funded by the Central Government.
- ⌚ It is implemented by the Small Farmers Agri-Business Union under the Union Ministry of Agriculture and Farmers Welfare.



### Other salient features of e-NAM-

- ⌚ The portal facilitates trade from warehouses on the basis of e-NWR (Electronic Negotiable Warehouse Receipt).
- ⌚ Under the NWR system, the ownership of the goods stored in the warehouse is transferred without physically delivering them.
- ⌚ Platform of Platforms (PoP) facility has been made available. With this, farmers can sell their produce even outside the limits of their state.
- ⌚ On this, 41 service providers from different platforms provide diverse value chain services like trading, quality checking, warehousing, fintech.
- ⌚ Artificial Intelligence (AI) based assistive devices have been integrated with the e-NAM platform.

### 74. Water, Ice, Society, Ecosystems in the Hindu Kush Himalaya

Recently the report Water, Ice, Society, and Ecosystems in the Hindu Kush Himalaya (HI-WISE) has been released.

The HI-WISE report has been released by the International Center for Integrated Mountain Development (ICIMOD). The Hindu Kush Himalaya (HKH) is one of the highest mountain ranges in the world. It is also called 'Third Pole' and 'Water Tower of Asia'.

#### Key Points of Report:

- ⌚ **Cryosphere:** Glacier mass loss has accelerated by 65%.
- ⌚ About 80% of the current volume of glaciers could be lost by the end of this century.
- ⌚ **Key Suggestion:** The effects of melting glaciers should be assessed. Adaptation strategies should be made accordingly.
- ⌚ It is also necessary to assess the changes in permafrost. Consequently, it is also necessary to assess the threats posed to livelihoods and infrastructure.
- ⌚ Permafrost is the thick sub-surface layer of soil. Its temperature remains below freezing point throughout the year.
- ⌚ **Water:** The rapid melting of glaciers will lead to peak water conditions around the middle of this century.
- ⌚ Peak water means that the rate at which water is being consumed is not replenishing the source of fresh water at the same rate. There is also evidence of a 'slow onset' of glacier retreat as well as an increased risk of heavy rainfall.



### 75. Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)

Recently, UNDP has partnered with DAY-NULM to empower women entrepreneurs.

- ⌚ This partnership between the United Nations Development Program (UNDP) and the Deendayal Antyodaya Yojana-National Urban Livelihoods Mission aims to empower women to make a good career choice in the field of entrepreneurship.
- ⌚ Women account for only 15 percent of the total entrepreneurs in India. This will especially help women looking to start and expand their own enterprises in areas such as the care economy, digital economy, electric mobility, waste management.
- ⌚ This is a three year project. This can be extended beyond 2025. Eight cities will be covered in its initial phase. It will help develop community business mentors called Biz-Sakhis in selected project sites.

#### **Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)**

It is a Centrally Sponsored Scheme. It is a scheme under the Ministry of Housing and Urban Affairs that focuses on reducing poverty and vulnerability of the urban poor households.

#### **Objective:**

- ⌚ Under this, a target has been set for universal coverage of the urban poor for skill development and credit facilities.
- ⌚ Under this, skill training is provided to the urban poor for market-based jobs and self-employment. Also, their access to credit is made easier.
- ⌚ It has expanded its coverage to all 4,041 statutory cities and towns. Thus covering most of the urban population of India.

### 76. Bonn Climate Change Conference

It was organized to set the agenda and prepare for the proposed COP 28 meeting in Dubai.

#### **Key discussions during the meeting:**

- ⌚ During this, a draft framework for Global Stocktake was released. It is a process whose purpose is to assess the progress of countries against climate change.
- ⌚ Also, it will determine the ways and means to advance global action against climate change.
- ⌚ The first Global Stocktake will be released at COP 28 as per the 2015 Paris Agreement.





### Mitigation Work Program (MWP):

- ⌚ It was launched in 2021 at COP 26 held in Glasgow. It aims to focus on cutting emissions to advance action against climate change.
- ⌚ Developing countries complain that developed countries have not yet transferred the finance and technology to meet their emissions targets.

### Loss and Damage Principle:

It was adopted at COP 27. There is a difference of opinion between developed and developing countries on how to finance under this principle.

### The New Collective Quantified Goal (NCQG)

- ⌚ The New Collective Quantified Targets (NCQG) were adopted at the Paris Climate Conference, 2015. Under this, climate finance was agreed before 2025. However, there is every possibility of NCQG missing its target.
- ⌚ Developed countries have not agreed to implement the NCQG. They have called for a review to declare it as a collective goal for all developed and developing countries.

## 77. Union Govt Withdraws Draft Livestock Bill After Protests

Recently, the government has withdrawn the draft “The Livestock and Livestock Products ((Importation and Exportation) Bill, 2023” in view of concerns expressed by animal rights activists.

- ⌚ In such a situation, the existing Livestock Importation Act, 1898 and Livestock Importation (Amendment) Act, 2001 regulating livestock will continue to be applicable.

### Features of Livestock Importation Act, 1898:

- ⌚ Under this law, the central government is empowered to regulate, limit or prohibit the import of any such livestock, which can spread infection.
- ⌚ The power to implement the Government order in this regard has been delegated to the Customs authorities.
- ⌚ State Governments can also make rules regarding imported livestock within their jurisdiction.
- ⌚ The Act was last amended in 2001. The definition of livestock products was changed by the amendment. Also, the provisions of the Customs Act, 1962 were also included in it.

### Why is there a need for a new law to replace the 1898 Act?

- ⌚ The 1898 law regulates only the import of livestock. It does not include provisions relating to exports.
- ⌚ It does not contain the power to make provisions relating to the promotion and development of the export of livestock and livestock products.



- ⌚ It gives a limited definition of livestock. Feline and dog species animals (Canine) are not included in the scope of its definition.
- ⌚ It is necessary to change this law to curb zoonotic diseases spread by import and export of any infectious livestock.

### 78. PM Kisan Mobile App with Face Authentication Feature

Recently, the Union Agriculture and Farmers Welfare Minister has launched the PM-Kisan mobile app with face authentication feature under “Pradhan Mantri Kisan Samman Nidhi”.

#### PM-Kisan Mobile of face authentication feature

- ⌚ Using the face authentication feature from this app, the farmer can easily complete e-KYC by scanning the face without OTP or fingerprint even sitting at a remote home, and can also help 100 other farmers to do e-KYC at their doorstep.
- ⌚ Now the difficulties related to Aadhaar verification and bank account details updation on PM Kisan Portal have been resolved by effective use of digital public goods.
- ⌚ Realizing the need to complete e-KYC compulsorily, the Government of India has empowered the officers of the State Governments to do e-KYC of the farmers, so that each officer can complete the e-KYC process for 500 farmers.

#### PM-KISAN Samman Nidhi

- ⌚ PM-Kisan is a Central Sector Scheme which was launched on February 24, 2019 to meet the financial needs of land holding farmers.
- ⌚ PM Kisan is one of the world’s largest DBT schemes in which Rs 6,000 per annum is directly transferred to farmers in Aadhaar linked bank accounts in three installments.
- ⌚ By amending this scheme in the year 2019, all landholder farmers (irrespective of the amount of land they have) were considered as beneficiaries of this scheme.

### 79. ‘Vitasta’ is festival to show true colour of Kashmir

Recently, the Union Home Minister addressed as the chief guest at the Vitasta Festival organized by the Ministry of Culture in Srinagar.

The Home Minister said that those who consider Jhelum as a river, do not recognize human culture and its height. He said that Jhelum has been the best witness of human civilization, and this Vitasta festival organized here is a festival to show Kashmir to the whole world.



The objective of Vitasta Mahotsav is to introduce the entire country to the great cultural heritage, diversity and uniqueness of Kashmir. The festival focuses on the folk beliefs associated with the Vitasta (Jhelum) river, which has been considered very sacred since Vedic times.

The mention of this river is found in many ancient texts like Neelmat Purana, Vitasta Mahamaya, Harcharita Chintamani, Rajatarangini. It is believed that the pure currents of this revered river destroy all the evils of human nature.

### **Jhelum River:**

- ⌚ The Jhelum River has five major tributaries; The Sutlej is one of the major tributaries of the Beas, Ravi, Chenab and Jhelum which eventually merge into the Indus River in Pakistan.
- ⌚ Jhelum is a west flowing river.
- ⌚ The Jhelum (Vyeth in Kashmiri, Vitasta in Sanskrit and Hydaspes in Greek) is the main waterway of the Kashmir Valley.
- ⌚ The Jhelum River originates from a spectacular spring called “Chashma Verinag”, which is located at the foot of the Banihal Pass in the south eastern corner of the Kashmir Valley.
- ⌚ The basin of this river has a 4675 m high grotto and the highest peaks of Brahmaskal. The Lidder River is the main source of water for the Jhelum River.

### **80. India and America signed defense partnership**

Recently, the Prime Minister of India was on a state visit to the US. During this period the following have been signed under the Strategic Defense Partnership between India and the US :

- ⌚ India – US Defense Acceleration Ecosystem (INDUS-X); And
- ⌚ MoU between General Electric (GE) and Hindustan Aeronautics Limited (HAL) for the manufacture of GE F-414 jet engine in India.
- ⌚ INDUS-X has been launched by the US Department of Defense (DoD) and the Indian Ministry of Defense (MoD). INDUS-X will facilitate joint defense technology innovation between the industries of both the countries. Also, it will facilitate co-production of advanced defense technology.
- ⌚ In addition, an India-US Joint Innovation Fund is also being set up for funding defense start-ups. It is a part of the US Initiative on Critical and Emerging Technologies (iCET). Under this, America will be able to eliminate barriers controlling the export of defense technology to India.
- ⌚ Under the MoU, General Electric will provide key technologies of GE F-414 jet engine to HAL. This will enable it to be used in HAL’s Light Combat Aircraft (LCA) Tejas MK2.



## 81. The Ten Principal Upanishads

Recently, the Prime Minister was called on by US President Joe Biden and First Lady Jill Biden at the White House in Washington DC.

During the meeting, PM Modi presented several gifts to Biden, including a 7.5-carat lab-grown diamond, an exquisite sandalwood box and a first edition print of the 1937 book “The Ten Principal Upanishads”.

### The Ten Principal Upanishads

- ⌚ Some of the major Sanskrit Upanishads have been translated into English under the name “The Ten Principal Upanishads” by Sri Purohit Swami and Irish poet William Butler Yeats. It is considered one of the best translations of the Upanishads.
- ⌚ Of the traditional 109 Upanishads, ten are considered major. These are: Ish, Ken, Kath, Prashna, Mundaka, Mandukya, Taittiriya, Aitareya, Chhandogya and Brihadaranyaka.
- ⌚ Written in the mid-1930s, the book was the result of William Butler Yeats’ desire to create a translation that was true to the original text and still accessible to the common man.

### Shruti & Smriti:

- ⌚ The Shruti texts are considered the most authoritative, and include the four Vedas (Rigveda, Yajurveda, Samaveda and Atharvaveda) and related texts. These include the Brahmanas (ritual texts), the Aranyakas and the Upanishads.
- ⌚ The second category of Hindu scriptures the “Smriti”, is less authentic, and in many respects are believed to be derived from the Shruti texts, but are more popular. These include the great epics of the Ramayana and the Mahabharata, the Dharmashastras, the Puranas and all other post-Vedic texts.

## 82. Joint “Artemis Mission” of ISRO and NASA

Recently India has agreed to sign the Artemis Accords and send a joint mission with NASA to the International Space Station (ISS).

India has decided to join the Artemis Accords. The agreement brings together like-minded countries for space exploration for civilian purposes.

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In addition to the above agreement, NASA and the Indian Space Research Organization (ISRO) have also agreed to send a joint mission to the ISS in 2024.



In the year 2020, NASA started the Artemis Accords with the help of the US State Department (Department of State) along with seven other countries. These 7 countries are: Australia, Canada, Italy, Japan, Luxembourg, United Arab Emirates and United Kingdom.

The Artemis Accords are a set of non-binding principles. It is designed to guide civilian space exploration. Under the Artemis program, NASA aims to land the first woman and the first black man on the surface of the Moon by 2025. By the way, the main goal of this mission is to explore Mars and the world beyond it.

The Artemis program stands for Acceleration, Reconnection, Turbulence and Electrodynamics of Moon's Interaction with the Sun.

#### **Principles of the Artemis Accords:**

- 🕒 Use of space for peaceful purposes,
- 🕒 Ensure transparency in the space programme,
- 🕒 Promoting interoperability,
- 🕒 Registering space objects,
- 🕒 Preserving space related heritage,
- 🕒 Reducing conflicts between countries in space use and
- 🕒 Management of space debris.

#### **Significance of Indo-US Space Agreement:**

- 🕒 India and America will share data, technology and resources. Also, work together to ensure the safety and sustainability of lunar exploration.
- 🕒 It will help in improving the programme, facilities and training design for the Gaganyaan mission.
- 🕒 India's space sector companies can become part of the global supply chain.

#### **83. Ban on more drugs harmful for vultures**

Recently, the Drugs Technical Advisory Board (DTAB) has recommended the ban of two other drugs known to be harmful to vultures.

The DTAB has agreed to ban the manufacture, sale and distribution of two drugs used in the treatment of livestock to protect vultures. These drugs are – Ketoprofen and Aceclofenac.

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DTAB is part of the Central Drugs Standard Control Organization (CDSCO) under the Ministry of Health and Family Welfare. It makes recommendations to the Ministry on policy decisions relating to technical aspects of the Drugs and Cosmetics Act and Rules.



Ketoprofen, aceclofenac, diclofenac and nimesulide are non-steroidal anti-inflammatory drugs (NSAIDs). They are used in animal medicine. These drugs are harmful to vultures and other birds of prey. Diclofenac is already banned in India.

#### 84. ECI publishes draft delimitation proposal for Assam

Recently, the Election Commission of India published the draft delimitation proposal for Assam. This draft of delimitation has been prepared as per the provision of Section 8-A of the Representation of the People Act, 1950.

According to Article-170 and Article-82 of the Constitution, the delimitation of assembly and parliamentary constituencies in Assam has been done on the basis of the 2001 census.

According to Articles 170 and 82, the number of seats in the Legislative Assembly of each State and the allocation of seats in the Lok Sabha to the States shall not be changed until the relevant figures of the first census after the year 2026 are published.

It may be noted that the last delimitation in Assam was done in the year 1976.

#### Proposed Delimitation:

- ⌚ The number of seats in the Legislative Assembly and Lok Sabha in the state of Assam has been fixed at 126 and 14 respectively.
- ⌚ Out of 126 seats in the Legislative Assembly, 19 seats have been reserved for Scheduled Tribes and 09 seats for Scheduled Castes.
- ⌚ Out of 14 seats in Lok Sabha, 2 seats have been reserved for Scheduled Tribes and 1 seat for Scheduled Castes.
- ⌚ An attempt has been made to make all the constituencies as geographically compact as possible, and in their delimitation taking into account physical features, density of population, existing boundaries of administrative units, communication facilities and public convenience.

#### What is delineation, and how is it done?

- ⌚ Delimitation is the process of defining the boundaries of Lok Sabha and State Assembly constituencies to ensure that each seat has approximately the same number of voters.
- ⌚ According to the Election Commission order, “during the delimitation exercise, the Commission takes into account physical facilities, existing boundaries of administrative units, convenience of communication and public convenience”.



## Election Commission of India:

It is a constitutional body. It was established on 25 January 1950. In the Constitution of India, provision has been made regarding the Election Commission from Articles 324 to 329.

## Powers and Functions of the Election Commission:

- ⌚ Determining the territory of the constituencies of the whole of India on the basis of the Delimitation Commission Act of the Parliament.
- ⌚ Preparation of electoral roll from time to time and registration of all eligible voters.
- ⌚ Fixing the date and time-table of the election and examining the nomination papers.
- ⌚ Granting recognition to political parties and allotting election symbols to them.
- ⌚ To act as a court of law to settle disputes regarding recognition of political parties and allocation of election symbols.
- ⌚ To appoint an officer to inquire into the dispute relating to the election system. To prepare code of conduct for parties and candidates at the time of election.

## 85. State visit of Prime Minister to Egypt

Recently the Prime Minister of India Shri Narendra Modi went on a state visit to Egypt on June 2023. The President of Egypt, H.E. Mr. Abdel Fattah El-Sisi receiving the Prime Minister, Shri Narendra Modi at Al-Ittihadiya Palace on 25 June 2023.

## Signing of Strategic Partnership Agreement

- ⌚ An agreement was signed by the two leaders to elevate the bilateral relationship to a “strategic partnership agreement”.
- ⌚ Significantly, the two leaders met in January this year, when Al-Sisi came to India as the chief guest of the Republic Day celebrations 2023. At that time, he decided to elevate India-Egypt bilateral relations to a “strategic partnership”.
- ⌚ Three MoUs were also signed in the fields of agriculture, archeology and antiquities and competition law.

## Order of the Nile

- ⌚ The President of Egypt, Abdel Fattah El-Sisi, conferred the ‘Order of the Nile’, Egypt’s highest civilian award, on Prime Minister Shri Narendra Modi on 25 June 2023 at a special ceremony held at the Presidency of Cairo.
- ⌚ Prime Minister Shri Narendra Modi is the first Indian to receive this award.



## Heliopolis Commonwealth War Grave Cemetery

The Prime Minister, Shri Narendra Modi, visited the Heliopolis Commonwealth War Grave Cemetery in Cairo. The Prime Minister paid tributes to over 4300 brave Indian soldiers who laid down their lives in Egypt and Aden during World War I.

## Al-Hakim Mosque

- 🕒 Prime Minister Shri Narendra Modi visited Al-Hakim mosque in Cairo. The Prime Minister also met leaders of the Bohra community, who are actively involved in the maintenance of this Fatimid era Shia mosque.
- 🕒 It is a historically and culturally significant site dating back to the 11th century in Cairo, Egypt.
- 🕒 This mosque is a testimony to the rich heritage and culture of India and Egypt. The Dawoodi Bohra community has renovated this mosque.
- 🕒 Al-Hakim Mosque was named after the 16th Fatimid caliph al-Hakim bi-Amr Allah (985–1021).

## 86. US to return over 100 antiquities stolen from India

Recently, the US government has decided to return more than 100 Indian antiquities stolen from India.

India and the US have signed a Mutual Legal Assistance Treaty (MLAT) on criminal matters. The treaty also includes a provision to assist each other in returning antiquities to the countries of origin.

MLATs are a mechanism whereby countries cooperate with each other to provide and receive formal assistance in dealing with criminal matters. This will ensure that the offender does not escape due process of law. The Union Home Ministry is the nodal ministry for executing the orders of the Court under MLAT.

Some antiquities brought from America; such as the images of Shiva, Parvati, Nataraja and others belong to the Chola-era temples of Tamil Nadu.

The Antiquities and Art Treasures Act (AATA), 1972 makes the export of antiquities without a license from the Archaeological Survey of India a punishable offence. In addition, the Customs Act, 1962 also places restrictions on the export of antiquities.

## Nataraja Statues & Idols:

- 🕒 The bronze Nataraja idol of Shiva in dancing posture is an excellent example of Chola art. Shiva was the presiding deity of the Chola dynasty.





- ⌚ In this, Shiva is holding a drum in his upper right hand. The sound of Damru symbolizes the creation of the universe.
- ⌚ He has eternal fire in his upper left hand. This fire symbolizes the destruction of the universe. His lower right hand is in 'Abhayahasta Mudra'. It symbolizes the removal of fear.
- ⌚ In this idol, a dwarf-like figure is shown buried under the right leg of Shiva.
- ⌚ This dwarf-like figure is the symbol of ignorance and delusion, the demon 'Apsmar'. This demon is the reason for human being to go astray.
- ⌚ The forward left hand of Shiva indicates his raised left leg. This is the symbol of the path of salvation.

### 87. New Global Financing Pact

Recently the Paris Finance Conference summit on "New Global Financial Pact" has been concluded.

#### Objectives of the Summit:

- ⌚ Strengthening the system of providing finance to low-income countries in times of crisis and reducing their debt burden.
- ⌚ Reforming financial institutions established after World War II and providing funds to deal with climate change.

#### Key announcements made in the summit:

- ⌚ Arrangements will be made to provide an additional \$200 billion in loans from Multi-Development Banks (MDBs) to emerging economies.
- ⌚ The World Bank has announced disaster clauses related to loan agreements. Under these, loan repayment will be suspended in the event of extreme weather events.
- ⌚ 100 billion dollar funding will be provided to poor countries through SDR (Special Drawing Rights). SDR is an international reserve asset of the International Monetary Fund (IMF).
- ⌚ Reinvestment of SDRs from rich countries to poor countries has been proposed. With this, concessional finance will be made available to the developing countries.
- ⌚ A new 2.5 billion Euro Just Energy Transition Partnership (JETP) agreement has been announced for Senegal. It aims to increase the share of renewable energy in the energy mix.
- ⌚ There has been a spurt in bringing polluters under the tax net. Pollution tax is a tax levied on those persons who pollute the environment.
- ⌚ A global expert review on debt, nature and climate was proposed. It has been proposed to assess the impact of debt on capacity in low- and middle-income countries.
- ⌚ EU issues call to action on Paris aligned carbon markets. It aims to bring at least 60 per cent of global emissions within the ambit of carbon pricing mechanisms.



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### 88. Gaganyaan's 1st abort mission to be done in August-end

According to the ISRO chairman, the first abort mission of 'Gaganyaan' will be conducted by the end of August.

Abort missions test systems that allow the crew to be safely ejected from the spacecraft mid-flight in the event of a mission failure.

In the year 2018, ISRO had already conducted a pad abort test. The test was carried out to safely evacuate the crew from the spacecraft in case of an emergency on the launch pad.

ISRO has developed dedicated test vehicles for abort missions. These send the vehicle systems up to a certain altitude.

Under this, the process of safe evacuation of astronauts (escape system) is tested by creating failure conditions.

Gaganyaan's escape system is designed with five hyperactive solid fuel motors, high burn rate propulsion system, and fins to ensure stability. This system separates from the crew module.

The Gaganyaan mission aims to demonstrate indigenous capability for manned space flight mission in Low Earth Orbit (LEO) at an altitude of 400 km. Under this, the government has approved two unmanned missions and one manned mission.

LVM3 (Geosynchronous Satellite Launch Vehicle Mk-III) has been developed as the launch vehicle for the Gaganyaan mission. It includes solid phase, liquid phase and cryogenic phase. So far only the US, Russia and China have been successful in sending manned missions to outer space.

### 89. U.S. Approves the Sale of Lab-Grown Chicken

Recently, the United States has approved the manufacture and sale of cell-cultured chicken.

Cellular agriculture is a process in which animal-based products are produced from cell cultures instead of animals.



The following two different methods are adopted in this process:

- ⌚ **Cell Culture:** (cellular), and
- ⌚ **Micro-fermentation:** (acellular- no cellular or living matter in the end product, such as milk). In 2020, Singapore approved the sale of cell-cultured meat. It has become the first country in the world to do so.

**Benefits of cell-cultured meat:**

- ⌚ Reduction of Green House Gas (GHG) emissions: According to the Food and Agriculture Organization (FAO), global livestock accounts for 14.5% of total human-caused GHG emissions.
- ⌚ Making meat in the lab would require 45% less energy than conventional beef. Animal rights will be protected.
- ⌚ People will not need to change their dietary habits and they will also get nutritional security.
- ⌚ It can be made healthier than animal-based products by reducing the amount of fat in it.

**Challenges associated with cell cultured meat:**

- ⌚ The cost of cell-cultured meat is expected to remain high in the near future.
- ⌚ Limited availability of high-quality cells and suitable growth-environment constraints exist.
- ⌚ It can be difficult to produce the same taste, texture, fat content, etc. as beef meat.
- ⌚ Due to lack of awareness, there is uncertainty about its acceptance among the consumers.

## 90. Alphabet's Project Taara

Recently, Alphabet has started using lasers to deliver internet to remote areas.

Alphabet, under Project Tara, is currently using light beam internet technology in several regions around the world, including India and Africa. Alphabet is the parent company of Google.

Free Space Optical Communication (FSOC) technology is being used in Project TARA. In this the free space acts as a communication channel between the transceivers present in the line-of-sight.

It uses light beams to provide high-speed and high-capacity connectivity over long distances. It can transmit data at a high speed of up to 20 GBPS in both directions over a distance of 20 km.

FSOC stands for Outdoor Optical Wireless Communication (OWC). In contrast, indoor or short range OWC is called Light Fidelity (LiFi).

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Currently LiFi is using the visible light spectrum to transmit data. In addition, it can also transmit data on the infrared and ultraviolet light spectrum (invisible light spectrum).



### Advantages of FSOC technology:

- ⌚ It is more cost effective,
- ⌚ Can be used quickly,
- ⌚ Under this, data can be transmitted at high speed,
- ⌚ It is more useful in areas where physical constraints make it difficult to lay fiber cables.

### Challenges in its implementation:

- ⌚ Conditions such as fog and mist or obstructions such as birds flying in the path of the signal reduce signal reliability;
- ⌚ This requires better mirror (especially concave) control.

### 91. Seven products from Uttar Pradesh get Geographical Indication tag

Recently the Geographical Indications Registry based in Chennai has given Geographical Indication (GI) tags to 7 different products of Uttar Pradesh.

These 7 products are: 'Amroha Dholak', 'Mahoba Gaura Patthar Hastashlip', 'Mainpuri Tarkashi', 'Sambhal Horn Craft', 'Baghpat Home Furnishings', 'Barabanki Handloom Product' and 'Kalpi Handmade Paper'.

- ⌚ **Amroha Dholak:** A musical instrument made of natural wood. Mango, jackfruit and teak wood are preferred for making dholak.
- ⌚ **Baghpat Home Furnishings:** Baghpat and Meerut are famous for their exclusive handloom home furnishing products and fabrics passed on in cotton yarn through generations, and only cotton yarn is used in the handloom weaving process. Curtains, kitchen towels, table towers, pillow cushions and other furnishing products are being made in abundance in this area.
- ⌚ **Barabanki Handloom Product:** This cluster now manufactures products like scarves, dupattas and shawls in straight lines, geometric patterns and bold designs.
- ⌚ **Kalpi Handmade Paper:** The cluster of handmade paper making in Kalpi is a huge cluster, consisting of more than 5,000 artisans and around 200 units. The art of making handmade paper from waste paper and cloth yarn is prominent in Kalpi.
- ⌚ **Mahoba Gaura Stone Handicraft (Mahoba Gaura Patthar Hastashlip):** A stone craft. It is a very unique and soft stone whose scientific name is 'Pyro flight stone'. The Gaura stone used in handicrafts is a pure white colored stone, which is found exclusively in this region.
- ⌚ **Mainpuri Tarkashi:** Tarkashi is a popular art of Mainpuri, Uttar Pradesh, which is mainly brass wire inlay on wood. Tarkashi is an art in which brass, copper or silver wires are inlaid in wood. This art is used to decorate jewelry boxes, name plates, khadau (wooden sandals) etc. In Mainpuri, rosewood wood is specially used for this art.
- ⌚ **Sambhal Horn Craft:** The raw material used in this type of craft is from the horns of dead animals, due to which this industry remains in harmony with the natural balance.



## 92. UTPRERAK Center of Excellence

Recently Union Ministry of Power has set up a Center of Excellence (UTPRERAK) to promote the use of clean technology in industry and improve India's contribution to the global energy transition.

It has been named UTPRERAK i.e. Catalyst, which is an acronym for Advanced Technical Demonstration Centre. Established with the objective of promoting energy efficient technologies, the Center of Excellence will act as a catalyst for improving the energy efficiency of Indian industry.

The center has been set up by the Bureau of Energy Efficiency, Ministry of Power under the name of Advanced Industrial Technology Demonstration Center at the New Delhi campus of National Power Training Institute (NPTI), Ministry of Power.

This center will be a premier institute for industrial energy efficient technology. AITDC will showcase energy efficient technology in key industrial sectors.

It will act as an exhibition cum information center and knowledge repository. It will be a platform for knowledge exchange, where best practices from various sectors can be disseminated among industry professionals through workshops and seminars.

'Catalyst' will also act as a strategic capacity building institute. Also, it will provide one stop solution for energy professionals across the country for education and training in energy efficiency.

The comprehensive training is expected to be imparted to over 10,000 energy professionals from various industries and other potential sectors during the next five years.

## 93. Kharchi Puja Festival

Recently, Prime Minister Shri Narendra Modi has greeted the people on the occasion of Kharchi Puja.

Kharchi Puja festival is celebrated in the northeastern state of Tripura. It is also called 'Festival of 14 Gods'. This festival is celebrated every year on the eighth day of Amavasya in July or August.

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This year this auspicious festival started from 26th June. The festival focuses on the rituals of Chaturdasa Devta, the progenitor deity of the people of Tripura. It holds immense religious and cultural significance and showcases the rich history and traditions of the community.



The word 'Kharchi' is derived from two Tripuri words – 'Khar' or Kharta meaning sin, and 'Chi' or Si meaning 'cleansing'. During the festival, the people of Tripura worship their 14 gods as well as the earth.

Although the festival is of tribal origin, it is celebrated by both tribal and non-tribal communities of Tripura. On the day of the puja, the fourteen deities are taken to the Saidra River by the Chantai members. The deities are bathed with holy water and brought back to the temple. Animal sacrifice is also an important part of this festival.

### **Haora River/Saidra River**

- ⌚ The 53 km long river originates from the Boromura hills in central Tripura. It flows westward through the cities of Champaknagar, Jirania, Khumulwang, Khyerpur and the capital Agartala before entering Bangladesh.
- ⌚ The Kokborok-speaking Aboriginal people know it locally as the Saidra River.

### **94. India ranked 67th on Energy Transition Index**

Recently Energy Transition Index 2023 has been released by the World Economic Forum.

This index is published in association with Accenture. India ranked 67<sup>th</sup> in this Energy Transition Index-2023.

#### **Key Facts:**

- ⌚ Sweden topped the index, followed by Denmark, Norway, Finland and Switzerland in the top five of the list of 120 countries.
- ⌚ France (7) is the only G20 country in the top 10, followed by Germany (11), the US (12), and the UK (13).
- ⌚ The global energy transition has slowed down amid the global energy crisis and geopolitical instability, but India is among the countries that have made significant improvements, the report said.
- ⌚ The index states that India is the only major economy in which the pace of energy transition is accelerating across all dimensions. For example, despite continued economic growth, India has successfully reduced the energy intensity of its economy and the carbon intensity of its energy mix by providing energy access for all and effectively managing electricity affordability.
- ⌚ India has also been relatively less affected by the recent energy crisis, mainly due to the low share of natural gas in electricity generation and the increased utilization of existing generation capacities.



## World Economic Forum (WEF)

- ⌚ The World Economic Forum (WEF) is a Swiss non-profit organization, established in the year 1971 in Geneva (Switzerland).
- ⌚ It is recognized by the Swiss government as an international organization for public-private cooperation.
- ⌚ WEF is committed to improving the state of the world by engaging business, political, academia and other representatives of society to shape global, regional and industry projects.

### 95. "Critical Minerals for India" Unveiled

Recently, the Ministry of Mines has released the country's first report on "Critical Minerals for India", prepared by an expert team constituted by the Ministry.

This is the first time that India has identified a comprehensive list of critical minerals keeping in view the requirements of sectors such as defence, agriculture, energy, pharmaceutical, telecommunication etc.

The report defines a critical mineral as one whose supply may be at risk in the future, and which has a (relatively) greater impact on the economy than other raw materials.

### 30 Critical Minerals:

- ⌚ There are a total of 30 critical minerals for India: antimony, beryllium, bismuth, cobalt, copper, gallium, germanium, graphite, hafnium, indium, lithium, molybdenum, niobium, nickel, PGE, phosphorus, potash, rare earth elements, rhenium, silicon, strontium, tantalum, tellurium, tin, titanium, tungsten, vanadium, zirconium, selenium and cadmium. These are essential for the country's economic development and national security.
- ⌚ While elements such as cobalt, nickel and lithium are needed for batteries used in electric vehicles or cellphones, rare earth elements are important, in trace amounts, in semiconductor and high-end electronics manufacturing.
- ⌚ Most of the countries in the world have identified important minerals as per their national priorities and future requirements.

### Initiatives of India:

- ⌚ India has become the newest participant in the Mineral Security Partnership (MSP) to strengthen critical minerals supply chains.
- ⌚ Geological Survey of India carried out G3 stage mineral exploration (much advanced) during field season 2020-21 and 2021-22 in Salal-Haimana area of Reasi district of Jammu and Kashmir and estimated lithium ore resource of 5.9 million tonnes. ,
- ⌚ Khanij Bidesh India Limited (KABIL) has been mandated to identify, and acquire overseas mineral assets of Lithium, Cobalt and other critical and strategic nature to ensure their supply.



## 96. Ratification of Headquarters Agreement (HQA) between India and CDRI approved

Recently, the Union Cabinet has approved the ratification of the Headquarters Agreement (HQA) signed between the Government of India and the Coalition for Disaster Resilient Infrastructure (CDRI).

### Headquarters Agreement (HQA)

- ⌚ The Cabinet on August 28, 2019 approved the setting up of the CDRI with a subsidiary secretariat at New Delhi.
- ⌚ On June 29, 2022, the cabinet will facilitate recognition of CDRI as an international organization and grant of exemptions, immunities and privileges to CDRI under Section-3 of the United Nations (Privileges and Immunities) Act, 1947.
- ⌚ Based on this, CDRI will be given the status of an independent and international legal organization (Legal Persona), so that it can perform its functions internationally and more efficiently.

### Coalition for Disaster Resilience Infrastructure (CDRI)

- ⌚ The CDRI was launched by the Prime Minister of India on September 23, 2019 during the United Nations Climate Action Summit in New York.
- ⌚ CDRI is a global partnership of national governments, United Nations agencies and programs, multilateral development banks and the financial system, the private sector, academic and knowledge-based institutions.
- ⌚ It aims to make infrastructure systems resilient to climate and disaster risks, so as to ensure sustainable development.
- ⌚ CDRI currently has 31 countries, 06 international organizations and two private sector organizations as members.

## 97. Cabinet approved the introduction of the National Research Foundation Bill, 2023

Recently, the Union Cabinet has approved the introduction of the National Research Foundation (NRF) Bill, 2023 in the Parliament on 28 June 2023.

### National Research Foundation (NRF)

- ⌚ The bill will pave the way for setting up of the National Research Foundation (NRF). This foundation will sow the seed of research and development, develop and encourage it. It will promote a culture of research and innovation in universities, colleges, research institutes and research and development laboratories across the country.
- ⌚ The Bill will set up an apex body called the NRF to provide high-level strategic direction to scientific research in the country in line with the recommendations of the National Education Policy.





- ⌚ The total estimated cost of this apex body would be Rs 50,000 crore over a period of five years (2023-28).
- ⌚ The Department of Science and Technology will be the administrative arm of the NRF, which will be governed by a Governing Board consisting of eminent researchers and professionals from various disciplines.
- ⌚ The Prime Minister will be the ex-officio Chairman of this Board and the Union Minister of Science and Technology and the Union Minister of Education will be the ex-officio Vice-Chairman.
- ⌚ The functioning of the NRF will be administered by an Executive Council under the chairmanship of the Principal Scientific Adviser to the Government of India.
- ⌚ NRF will establish collaboration between industry and academia and government departments and research institutions, and create an interface mechanism for the participation and contribution of various industries and state governments, apart from scientific and related ministries.
- ⌚ It will focus on creating a policy framework and regulatory processes that encourage collaboration and increased spending by industry on R&D.
- ⌚ The Bill will also repeal the Science and Engineering Research Board (SERB), set up by an Act of Parliament in 2008, and subsume it into the NRF, which has a wider scope and covers activities other than those of the SERB.