



PEP – 2024

PRELIMS EXCLUSIVE PROGRAMME

ONE STOP DESTINATION FOR PRELIMS PREPARATION

Current Affairs Handout

August 2022





Contents

ENVIRONMENT TOPICS	4	INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS	12
ANANG TAL LAKE	4	MINERAL SECURITY PARTNERSHIP , CRITICAL MINERAL	12
KUSHIYARA RIVER	4	CRITICAL MINERALS	13
FENI RIVER	4	BIOLOGICAL AND TOXIN WEAPONS CONVENTION (BWC) 1972	13
ARAVALI RANGE	4	NON-PROLIFERATION TREATY- NPT	13
HASDEO ARANYA REGION	5	NEW START TREATY	14
OCEAN THERMAL ENERGY CONVERSION (OTEC) PLANT	5	UN TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS	14
NATIONAL INSTITUTE OF OCEAN TECHNOLOGY (NIOT)	5	COMPREHENSIVE NUCLEAR-TEST-BAN TREATY	15
CHERUTHONI DAM	5	PARTIAL TEST BAN TREATY	15
RANGANATHITTU BIRD SANCTUARY	6	CONFERENCE ON DISARMAMENT	15
INDIA ADDS 11 MORE WETLANDS TO THE LIST OF RAMSAR SITES TO MAKE A TOTAL 75	6	GROUP 24	16
NEW RAMSAR SITES	6	OECD	16
ENDOSULFAN	6	OECD/G20 INCLUSIVE FRAMEWORK TAX DEAL	17
NON-WOVEN PLASTIC CARRY BAGS	7	BASE EROSION AND PROFIT SHIFTING (BEPS):	17
PYRENE	7	INDIA-BANGLADESH JOINT WATER COMMISSION	17
PUROS	7	TRANS-HIMALAYAN MULTI-DIMENSIONAL CONNECTIVITY NETWORK	18
PER-AND POLYFLUOROALKYL SUBSTANCES	8	INTERNATIONAL NORTH SOUTH TRANSPORT CORRIDOR	18
OZONE DEPLETING GAS INDEX	8	PORCUPINE STRATEGY	19
INDIAN VIRTUAL HERBARIUM	8	PEN-PLUS STRATEGY	19
A HERBARIUM SPECIMEN	9	SCIENCE AND TECHNOLOGY	20
INDIAN ANTARCTIC ACT, 2022, ANTARCTIC TREATY	9	BETELGEUSE	20
BATTERY WASTE MANAGEMENT RULES, 2022	10	EXO-MOONS	20
EXTENDED PRODUCER RESPONSIBILITY (EPR):	10	STRONG THERMAL EMISSION VELOCITY ENHANCEMENT	20
ENVIRONMENTAL COMPENSATION:	10	SHORTEST DAY 29 JULY : LEAP SECONDS .	21
RECYCLING:	11	SMALL SATELLITE LAUNCH VEHICLE (SSLV) D-1	21
ONLINE PORTAL:	11	ASTROBEE	21
ZOMBIE ICE	11		
INTERNATIONAL RELATIONS	12		



IASBABA

INDIA'S FIRST COMMERCIAL SPACE SITUATIONAL AWARENESS (SSA) OBSERVATORY	22	MINORITY STATUS IN INDIA	34
FACIAL RECOGNITION TECHNOLOGY	22	NOTIFIED MINORITIES IN INDIA.....	35
'ANUBIS', 'ROAMING MANTIS' AND 'BIAN LIAN'	23	CONSTITUTIONAL PROVISIONS FOR MINORITIES	35
ALPHA FOLD	23	Article 29	35
ROSHINI: INDIA'S FIRST SATELLITE WATER LANTERN	24	Article 30:	35
INDIA'S FIRST INDIGENOUSLY DEVELOPED HFC BUS	24	Article 350-B:	35
QUANTUM KEY DISTRIBUTION	24	DATA ANONYMIZING DRAFT GUIDELINES	36
CLOUD SEEDING	25	ARMED FORCES TRIBUNAL	37
POLAR AMPLIFICATION	25	KHANIJ BIDESH INDIA LTD.	38
INDARC	26	INDIAN OLYMPIC ASSOCIATION	38
POLITY.....	27	ECONOMY	39
FOREIGN EXCHANGE MANAGEMENT (OVERSEAS INVESTMENT) RULES, 2022 ..	27	MOONLIGHTING	39
CAROTAR	28	CANTILLON EFFECT.....	39
WEAPONS OF MASS DESTRUCTION AND THEIR DELIVERY SYSTEM (PROHIBITION OF UNLAWFUL ACTIVITIES) AMENDMENT ACT, 2022.....	28	PERPETUAL BONDS (CONSOL BOND)	39
SPECIAL MARRIAGE ACT, 1954.....	28	REGIONAL RURAL BANKS	40
ABOUT SPECIAL MARRIAGE ACT (SMA), 1954:.....	29	BLUE BONDS	40
PANCHAYATS (EXTENSION TO THE SCHEDULED AREAS) (PESA) ACT, 1996	29	ACCOUNT AGGREGATOR.....	40
INDIAN TELEGRAPH RIGHT OF WAY (AMENDMENT) RULES, 2022.....	30	MESLIN FLOUR	41
DENOTIFIED NOMADIC TRIBES	31	GOLD INDUSTRY IN INDIA	41
STATUS IN INDIA	31	JUTE PRODUCTION	41
COMMISSIONS FOR DENOTIFIED TRIBES IN INDIA	31	COAL RESERVES IN INDIA	42
S. SUBRAMANIAM BALAJI VS TAMIL NADU (2013) JUDGEMENT	32	BHARAT BILL PAYMENT SYSTEM	43
REVIEWING ITS OWN JUDGEMENTS BY SUPREME COURT: UNDER ARTICLE 137 ..	32	VANDE BHARAT EXPRESS	44
ARTICLE 143	33	SUPER VASUKI	44
ARTICLE 145	33	WORLD'S HIGHEST RAILWAY BRIDGE	45
PARLIAMENTARY PRIVILEGES	33	DEFENCE.....	45
		INS VIKRAMADITYA.....	45
		HELLFIRE R9X MISSILE	45
		SWARM DRONE SYSTEMS	46
		NIPUN MINES AND BUTTERFLY MINES	46
		ZORAVAR TANK	47
		LANDING CRAFT ASSAULT	47
		VINBAX 2022.....	48
		HEALTH	49
		LANGYA VIRUS	49

[Notes](#)



IASBABA

SOUTHERN RICE BLACK-STREAKED DWARF VIRUS	49	ADICHANALLUR.....	54
CHRONIC FATIGUE SYNDROME.....	49	BRONZE IDOLS	54
MONKEYPOX VACCINE	50	BARA IMAMBARA	55
LUMPI PRO-VAC	50	SHRIMAD RAJCHANDRA MISSION	56
INDICES AND REPORTS	51	SHRIMAD RAJCHANDRAJI.....	56
WORLD POPULATION PROSPECTS 2022 ..	51	MISCELLANEOUS	56
INDIA WIND ENERGY MARKET OUTLOOK 2026.....	51	MALVINAS ISLAND	56
ART AND CULTURE	52	SOMALIA.....	57
LACHIT BORPHUKAN	52	TAIWAN	58
PANDURANG KHANKHOJE.....	52	TAIWAN STRAIT	58
MANDALA ART	53	YELLOW SEA.....	58
HYDERABAD LAC BANGLES	53	BOHAI SEA	59
MITHILA MAKHANA	54	GIRMITIYA COUNTRIES.....	59
ARANMULA KANNADI	54	FIRST ISLAND CHAIN.....	59
		FUNCTIONALLY LITERATE DISTRICT	60

[Notes](#)



ENVIRONMENT TOPICS

[Notes](#)

ANANG TAL LAKE

- Recently, a gazette notification has been issued to declare Anang Tal Lake located near Qutub Minar in Mehrauli in the National Capital Territory of Delhi as a National Monument.
- The mini lake, known as Anang Tal, was created in 1060 AD by Raja Anang Pal Tomar, the founder of Delhi.
- It lies in area between the flood plain of river and Delhi Ridge. Delhi Ridge is a Northern extension of ancient Aravalli Range.
- Tradition ascribes this tank to a Tomar King, Anang Pal II, the builder of Lal Kot.
- It is said to have been a place of general resort but now it is dried up and used for cultivation.
- It is also said that Alauddin Khalji A.D 1296-1316 utilized the water of this tank when he built minar and extended the Qutub-ul-Islam mosque.

KUSHIYARA RIVER

- The Kushiara River is a distributary river in Bangladesh and Assam.
- It forms on the India-Bangladesh border as a branch of the Barak River when the Barak separates into the Kushiara and Surma.
- The waters of the Kushiara pick up tributaries from Manipur, Mizoram, and Assam.
- The Kushiara rejoins with the Surma at Markuli in Ajmiriganj upazila (Bangladesh) and flows south upto Bhairab Bazar (Bangladesh) receiving the name Kalni.
- The Kalni meets with the Dhanu (Bangladesh), a branch of the Surma and renamed as the Meghna.

FENI RIVER

- The Feni River, also known as Feni Nodi in Bengali, forms part of the India-Bangladesh border.
- It originates in the South Tripura district, passes through Sabroom town on the Indian side, and meets the Bay of Bengal after it flows into Bangladesh
- It has great agricultural importance for the people living in the towns near to this river.
- This river is also the source of their livelihood through which they obtain a number of benefits like watering their crops with its water and also using the water for their regular use.
- Maitri Setu, a 1.9km Long Bridge Over Feni River is constructed in Tripura to link India-Bangladesh.

ARAVALI RANGE

- Aravali range stretch for a distance of about 720 km from Himmatnagar in Gujarat to Delhi, spanning Haryana, Rajasthan, Gujarat, and Delhi.
- The Aravalis date back to millions of years when a pre-Indian subcontinent collided with the mainland Eurasian Plate.



IASBABA

Notes

- Carbon dating has shown that copper and other metals mined in the ranges date back to at least the 5th century BC.
- The Aravallis of North western India, one of the oldest fold mountains of the world, now form residual mountains with an elevation of 300m to 900m.
- Guru Shikhar Peak on Mount Abu is the highest peak in the Aravalli Range (1,722 m).
- It has been formed primarily of folded crust, when two convergent plates move towards each other by the process called orogenic movement.
- The mountains are divided into two main ranges – the Sambhar Sirohi Range and the Sambhar Khetri Range in Rajasthan, where their extension is about 560 km.
- The hidden limb of the Aravallis that extends from Delhi to Haridwar creates a divide between the drainage of rivers of the Ganga and the Indus.

HASDEO ARANYA REGION

- The Hasdeo Aranya (Aranya means forest) lies in the catchment area of the Hasdeo river and is spread across 1,878 sq km in North-Central Chhattisgarh.
- The Hasdeo river is a tributary of the Mahanadi river which originates in Chhattisgarh and flows through Odisha into the Bay of Bengal.
- The Hasdeo forests are also the catchment area for the Hasdeo Bango Dam built across the Hasdeo river which irrigates six lakh acres of land, crucial to a State with paddy as its main crop.
- Besides, the forests are ecologically sensitive due to the rich biodiversity they offer and due to the presence of a large migratory corridor for elephants.

OCEAN THERMAL ENERGY CONVERSION (OTEC) PLANT

- Recently, the National Institute of Ocean Technology, an autonomous institute under the Union Ministry of Earth Sciences (MoES) is establishing an Ocean Thermal Energy Conversion Plant with a capacity of 65 kilowatts (kW) in Kavaratti, Lakshadweep.
- Ocean Thermal Energy Conversion (OTEC) is a process for producing energy by harnessing the temperature differences (thermal gradients) between ocean surface waters and deep ocean waters.
- Oceans are huge heat reservoirs as they cover almost 70% of Earth's surface.
- The total OTEC potential around India is estimated as 180,000 MW, considering 40% of gross power for parasitic losses.

NATIONAL INSTITUTE OF OCEAN TECHNOLOGY (NIOT)

- It was established in November 1993 as an autonomous society under the Ministry of Earth Sciences, Government of India.
- It aims to develop reliable indigenous technologies to solve various engineering problems associated with harvesting of non-living and living resources in the Indian Exclusive Economic Zone.

CHERUTHONI DAM

- The Cheruthoni Dam, located in Idukki District, Kerala is a 138m tall concrete gravity dam.



IASBABA

[Notes](#)

- Cheruthoni is a town on the banks of Cheruthoni River, a major tributary of the Periyar River, the second longest river in Kerala state.
- This dam was constructed in 1976 as part of the Idukki Hydroelectric Project along with two other dams Idukki and Kulamavu.

RANGANATHITTU BIRD SANCTUARY

- Declared a sanctuary in 1940 at the behest of the famous ornithologist Dr. Salim Ali, the Ranganathittu Bird Sanctuary is a paradise for bird watchers and nature lovers.
- The sanctuary is spread over an area of 0.67 sq km and located on the banks of River Cauvery.
- The Ranganathittu Bird Sanctuary is also known as the 'Pakshi Kashi' of Karnataka.
- It is a bird sanctuary in the Mandya District of the state of Karnataka in India.
- It is the largest bird sanctuary in the state with 40 acres in area, and comprises six islets on the banks of the Kaveri River.
- In 2014, around 28 sq. km around the sanctuary was declared as an eco-sensitive zone.
- The sanctuary has been designated as a protected Ramsar site since 2022.

INDIA ADDS 11 MORE WETLANDS TO THE LIST OF RAMSAR SITES TO MAKE A TOTAL 75

- The 11 new sites include: Four sites in Tamil Nadu, Three in Odisha, Two in Jammu & Kashmir and One each in Madhya Pradesh and Maharashtra.
- India is one of the Contracting Parties to Ramsar Convention, signed in Ramsar, Iran, in 1971.
- India signed it on 1st Feb 1982.
- During 1982 to 2013, a total of 26 sites were added to the list of Ramsar sites, however, during 2014 to 2022, the country has added 49 new wetlands to the list of Ramsar sites.
- Tamil Nadu has maximum no. of Ramsar sites (14 no's), followed by UP which has 10 nos. of Ramsar sites.

NEW RAMSAR SITES

- Odisha – Tampara Lake and Hirakud Reservoir, Ansupa Lake
- Madhya Pradesh – Yashwant Sagar
- Tamil Nadu – Chitrangudi Bird Sanctuary, Suchindram Theroor Wetland Complex, Vaduvur Bird Sanctuary and Kanjirankulam Bird Sanctuary
- Maharashtra – Thane Creek
- Jammu and Kashmir – Hygam Wetland Conservation Reserve and Shallbugh Wetland Conservation Reserve.

ENDOSULFAN

- Endosulfan is an organochlorine insecticide which was first introduced in the 1950s and is commonly known by its trade name Thiodan.
- It is linked to a slew of grave medical conditions, such as neurotoxicity, physical deformities, poisoning and more.



IASBABA

Notes

- It is sprayed on crops like cotton, cashew, fruits, tea, paddy, tobacco etc. for control of pests such as whiteflies, aphids, beetles, worms
- Endosulfan is listed under both the Rotterdam Convention on the Prior Informed Consent and the Stockholm Convention on Persistent Organic Pollutants.

NON-WOVEN PLASTIC CARRY BAGS

- Concerned over the rampant use of environmentally hazardous 'non-woven' plastic carry bags across the State, the Himachal Pradesh government has decided to impose a complete ban on its use from January 1, 2023.
- the State government had banned the use of non-woven plastic carry bags less than 60 Gram per Square Meter (GSM), apart from the use of plastic carry-bags, irrespective of their sizes and thickness.
- Non-woven bags are made of Polypropylene, a kind of plastic.
- Non-woven polypropylene is not biodegradable or compostable and may take many years to break down in the environment and this is a matter of increasing concern for all plastics.
- Plastics, such as non-woven polypropylene, degrade in the environment into smaller and smaller pieces of plastic called microplastics.

PYRENE

- Researchers at the Council of Scientific & Industrial Research (CSIR) have identified a fungus capable of removing toxic, recalcitrant (Not easily controlled), and carcinogenic Pyrene or Polycyclic Aromatic Hydrocarbons (PAHs) from the environment.
- Pyrene, possessing four benzene rings, belongs to the highly toxic class of PAHs, with carcinogenic and mutagenic properties.
- It gets lodged into the environmental matrices like soil, water and atmosphere, resulting in widespread environmental pollution, necessitating adequate remediation of contaminated environmental matrices.
- The rapid pace of economic development and industrialisation has resulted in the release of several PAHs into the environment.
- PAHs are a class of chemicals that occur naturally in coal, crude oil, and gasoline. These are ubiquitous environmental pollutants originating from multiple sources, including combustion of petrogenic fossil fuels, and incomplete incineration of municipal wastes and biomass.

PUROS

- A Delhi Based Startup has developed a helmet called "Puros". This helmet can help two-wheeler riders breathe clean air.
- Puros is an anti-pollution helmet that can help 2-wheeler riders breathe clean air.
- The helmet has a system set at the back that picks up all particulate matter coming from outside and cleans the air before it reaches the biker.
- It also has a Bluetooth-enabled app that lets the rider know when it requires cleaning.



- This helmet will help the two-wheeler riders who were having prolonged daily exposures and that too, to a double whammy of particulate matter and vehicular emissions in the air that they breathe.

PER-AND POLYFLUOROALKYL SUBSTANCES

- The per-and polyfluoroalkyl substances (PFAS) are a group of chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. Fluoropolymer coatings can be in a variety of products.
- Fluoropolymer coatings can be in a variety of products.
- These include clothing, furniture, adhesives, food packaging, heat-resistant non-stick cooking surfaces, and the insulation of electrical wire.
- Many PFAS, including perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), are a concern because they:
 - do not break down in the environment,
 - can move through soils and contaminate drinking water sources,
 - build up (bioaccumulate) in fish and wildlife.
- PFAS persist in the environment and exposure in people can occur by consuming PFAS-contaminated water or food.
- PFAS may affect growth and development in addition to reproduction, thyroid function, the immune system, and injure the liver.

OZONE DEPLETING GAS INDEX

- The ozone Depleting Gas Index by the National Oceanic and Atmospheric Administration (NOAA) tracks the overall stratospheric concentration of ozone-depleting chlorine and bromine.
- They Collect air samples around the globe and analyze them annually.
- Index says that the overall concentration of Ozone depleting substance (ODS) in the lower stratosphere had declined by over 50%.
 - However, the pace of reduction in ODSs over Antarctica has been slower.
- Montreal Protocol on Substances that Deplete the Ozone Layer has played an important role in the progress by regulating the production and trade of ODS.

INDIAN VIRTUAL HERBARIUM

- It is a database of dried plants that maximises the usefulness of the collections.
- Apart from digital images of the herbarium specimens, the label data on each species include all information about the herbarium specimen such as family, genus, species, author citation, sub-species, variety (if any), collector, collection number, collection date, herbarium region, localities, plant description, habitat and comments (if any) are available.
- It is the biggest virtual database of flora in the country.
- It was developed by scientists of the Botanical Survey of India (BSI).



A HERBARIUM SPECIMEN

- It consists of dried plant parts with labelled information on Scientific name and collection data.
- It has immense use in plant identification, systematics studies and ecological studies.
- The Botanical Survey of India has more than 30,00,000 herbarium specimens persevered in different herbaria located in the different parts of the country.

INDIAN ANTARCTIC ACT, 2022, ANTARCTIC TREATY

Key Features of the Bill

Applicability:

- The provisions of the Bill will apply to any person, vessel or aircraft that is a part of an Indian expedition to Antarctica under a permit issued under the Bill.

Central committee:

- The central government will establish a Committee on Antarctic Governance and Environmental Protection.
- The Committee will be chaired by the Secretary of the Ministry of Earth Sciences.

The functions of the Committee include:

- granting permits for various activities,
- implementing and ensuring compliance of relevant international laws for protection of Antarctic environment,
- obtaining and reviewing relevant information provided by parties to the Treaty, Convention, and Protocol, and
- negotiating fees/charges with other parties for activities in Antarctica.

Need for permit: permit will be required for various activities such as:

- an Indian expedition to enter or remain in Antarctica,
- a person to enter or remain in an Indian station in Antarctica,
- a vessel or aircraft registered in India to enter or remain in Antarctica,
- a person or vessel to drill, dredge or excavate for mineral resources, or collect samples of mineral resources,
- activities which may harm native species, and
- waste disposal by a person, vessel or aircraft in Antarctica.
- Before a permit is granted by the Committee, the applicant has to carry out an environmental impact assessment of the proposed activities.
- Moreover, a permit must not be granted unless a waste management plan has been prepared for the expedition by the Committee.

Prohibited activities: The Bill prohibits certain activities in Antarctica including:

- nuclear explosion or disposal of radioactive wastes,
- introduction of non-sterile soil, and
- discharge of garbage, plastic or other substance into the sea which is harmful to the marine environment.



IASBABA

- Offences and penalties: The Bill specifies penalties for contravention of its provisions.

Other important provisions

- It also directs creating a fund called the Antarctic fund that will be used for protecting the Antarctic environment.
- The Bill also extends the jurisdiction of Indian courts to Antarctica and lays out penal provision for crimes on the continent by Indian citizens, foreign citizens who are a part of Indian expeditions, or are in the precincts of Indian research stations.

Antarctic Treaty

- The Antarctic treaty remains the only example of a single treaty that governs a whole continent.
- The Antarctic Treaty was signed between 12 countries in Washington on 1st December 1959 for making the Antarctic Continent a demilitarized zone to be preserved for scientific research only.
- The twelve original signatories are Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Union of Soviet Socialist Republics, the UK and the US.
- It entered into force in 1961 and has since been acceded by many other nations.
- Currently it has 54 parties.
- India became a member of this treaty in 1983.

BATTERY WASTE MANAGEMENT RULES, 2022

- Recently, the government notified Battery Waste Management Rules, 2022 to ensure environmentally sound management of waste batteries.
- The new rules replace the Batteries (Management and Handling) Rules, 2001.
- The new rules cover all types of batteries -
 - Electric Vehicle batteries,
 - Portable batteries,
 - Automotive batteries and
 - Industrial batteries.

EXTENDED PRODUCER RESPONSIBILITY (EPR):

- The rules function based on the concept of Extended Producer Responsibility (EPR).
- The producers (including importers) of batteries are responsible for the collection and recycling/refurbishment of waste batteries
- They are also responsible for the use of recovered materials from wastes into new batteries.

ENVIRONMENTAL COMPENSATION:

- On the principle of Polluter Pays Principle, environmental compensation will be imposed for non-fulfilment of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules.
- Funds under compensation:

[Notes](#)



IASBABA

Notes

- The funds collected under environmental compensation shall be utilised in the collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

RECYCLING:

- EPR mandates that all waste batteries to be collected and sent for recycling/refurbishment, and its prohibits disposal in landfills and incineration.
- Producers can engage themselves or authorise any other entity for the purpose.
- The rules promote setting up of new industries and entrepreneurship in collection and recycling/refurbishment of waste batteries.

ONLINE PORTAL:

- The rules will enable setting up a mechanism and centralised online portal for the exchange of EPR certificates between producers and recyclers/refurbishers to fulfil the obligations of producers.

ZOMBIE ICE

- The recent study has showed that melting of the Greenland ice sheet will unavoidably raise the global sea levels by at least 10.6 inches or 27 centimetres, no matter what climate action the world decides to take right now.
- This is because of 'zombie ice', which is certain to melt away from the ice cap and blend into the ocean.
- Also referred to as dead or doomed ice, zombie ice is one that is not accumulating fresh snow even while continuing to be part of the parent ice sheet.
- Such ice is "committed" to melting away and increasing sea levels.

**INTERNATIONAL RELATIONS****INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS**

- Recently, The International Maritime Organization (IMO) council awarded Certificate of Commendation to the Indian Navy, Indian Coast Guard and Master along with crew members of tugboat Ocean Bliss for exceptional and courageous efforts towards the rescue operation of M/T New Diamond.
- STCW was adopted in 1978 by a conference at the International Maritime Organization (IMO) in London and entered into force in 1984.
- India is a signatory to the convention.
- The Convention was significantly amended in 1995 and 2010 entered into force on 1 January 2012.
- The Convention prescribes minimum standards relating to training, certification and watchkeeping for seafarers which countries are obliged to meet or exceed.
- The 1978 STCW Convention was the first to establish minimum basic requirements on training, certification and watchkeeping for seafarers on an international level.
- Previously the minimum standards of training, certification and watchkeeping of officers and ratings were established by individual governments, usually without reference to practices in other countries.
- As a result, minimum standards and procedures varied widely, even though shipping is extremely international by nature.

MINERAL SECURITY PARTNERSHIP, CRITICAL MINERAL

- The goal of the MSP is to ensure that critical minerals are being “produced, processed, and recycled in a manner that supports the ability of countries to realise the full economic development benefit of their geological endowments.
- " Specifically, the MSP focuses on critical minerals that are inputs for electric vehicles and advanced batteries.
- Participating countries pursue investment in mining, processing and recycling development that maintains high environmental and social governance standards.
- The creation of this partnership is a response to the increasing demand of critical minerals and their tight supply chain.
- Australia, Canada, Finland, France, Germany, Japan, Korea, Sweden, the United Kingdom, the United States, and the European Union have joined the MSP.

Objectives of the MSP include:

- Strengthened information sharing between partner countries
- Increased investment in secure critical minerals supply chains
- Developed recycling technologies



CRITICAL MINERALS

- Critical minerals are elements that are the building blocks of essential modern-day technologies and are at risk of supply chain disruptions.
- These minerals are now used everywhere from making mobile phones, computers to batteries, electric vehicles and green technologies like solar panels and wind turbines.

Major Critical Minerals:

- Graphite, Lithium and Cobalt are used for making EV batteries.
- Aerospace, communications and defence industries also rely on several such minerals as they are used in manufacturing fighter jets, drones, radio sets and other critical equipment.
- While Cobalt, Nickel and Lithium are required for batteries used in electric vehicles, rare earth minerals are critical, in trace amounts, in the semiconductors and high-end electronics manufacturing.

Minerals Security Partnership (MSP)

- It is an initiative by the United States to bolster critical mineral supply chains.
- Partners: Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, the United Kingdom, the United States, and the European Commission.

BIOLOGICAL AND TOXIN WEAPONS CONVENTION (BWC) 1972

- Biological weapons use microbiological agents (such as bacteria, viruses or fungi) or toxins to intentionally cause death or harm to humans, animals, or plants.

Related Initiatives:

- The 1925 Geneva Protocol banned the use of biological weapons in war.
- India ratified the Geneva Convention in 1950.
- Subsequently, the Biological and Toxin Weapons Convention (BTWC), which entered into force in 1975 prohibited the development, production, stockpiling, acquisition and retention of biological weapons.
- India ratified this in 1974.

NON-PROLIFERATION TREATY- NPT

- Recently, an international conference to review the Nuclear Non-proliferation Treaty (NPT) concluded at the United Nations in New York without a consensus document.
- The NPT came into force in 1970.
- The provisions of the Treaty envisage a review of the operation of the Treaty every five years.
- The Tenth Review Conference, scheduled for 2020, was delayed because of the Covid-19 pandemic.
- Aim: It seeks to inhibit the spread of nuclear weapons.
- Members: A total of 191 States have joined the Treaty, including the five nuclear-weapon States.
- **India, Israel, South Sudan and Pakistan** never signed NPT and North Korea has declared withdrawal in the past.



IASBABA

[Notes](#)

- **Important Pillars:**

- First Pillar: The States-Parties commit to general and complete disarmament.
- Second Pillar: Non-Nuclear Weapon States (NNWS) forgo development or acquiring nuclear weapons.
- Third Pillar: States-Parties can access and develop nuclear technology for peaceful applications.

NEW START TREATY

- Recently, Russia suspended inspection under the new START treaty over western sanctions.
- Treaty Structure: It is Treaty between the United States of America and Russia
- It is a treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms.
- It enhances U.S. national security by placing verifiable limits on all Russian deployed intercontinental-range nuclear weapons.
- The United States and the Russian Federation have agreed to extend the treaty through February 4, 2026.

Strategic Offensive Limits:

- The New START Treaty entered into force on February 5, 2011.
- Under the treaty, the United States and the Russian Federation had seven years to meet the treaty's central limits on strategic offensive arms (by February 5, 2018) and are then obligated to maintain those limits for as long as the treaty remains in force.
- Force Structure: Each Party has the flexibility to determine for itself the structure of its forces subject to the central limits.
- The New START Treaty gives the United States the flexibility to deploy and maintain U.S. strategic nuclear forces in a way that best serves U.S. national security interests.
- It limits all Russian deployed intercontinental-range nuclear weapons, including every Russian nuclear warhead that is loaded onto an intercontinental-range ballistic missile that can reach the United States in approximately 30 minutes.
- Verification and Transparency: The treaty contains detailed procedures for the implementation and verification of the central limits on strategic offensive arms (discussed above) and all treaty obligations.

UN TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS

- Recently, the Five permanent United Nations Security Council members (China, France, Russia, the U.K. and US) pledged to prevent atomic weapons spreading and to avoid nuclear conflict.
- The pledge was made in a rare joint statement ahead of a review of the Non-Proliferation Treaty (NPT) 1970.



IASBABA

[Notes](#)

- The NPT is an international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to foster the peaceful uses of nuclear energy, and to further the goal of disarmament.
- The treaty was signed in 1968 and entered into force in 1970. Presently, it has 190 member states.
- India is not a member.
- It requires countries to give up any present or future plans to build nuclear weapons in return for access to peaceful uses of nuclear energy.
- It represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.
- Nuclear-weapon states parties under the NPT are defined as those that manufactured and exploded a nuclear weapon or other nuclear explosive devices before 1st January, 1967.

COMPREHENSIVE NUCLEAR-TEST-BAN TREATY

- Recently, the United States State Department has accused China and Russia of conducting nuclear tests with low yields, in violation of the Comprehensive Nuclear-Test-Ban Treaty (CTBT).
- CTBT was negotiated at the Conference on Disarmament in Geneva and adopted by the United Nations General Assembly in 1996.
- The Treaty intends to ban all nuclear explosions - everywhere, by everyone. It was opened for signature in 1996 and since then 182 countries have signed the Treaty, most recently Ghana has ratified the treaty in 2011.
- India, North Korea and Pakistan have not yet signed the Treaty.
- The Treaty will enter into force after all 44 States listed in Annex 2 to the Treaty will ratify it.
- These States had nuclear facilities at the time the Treaty was negotiated and adopted.
- As of August 2011, 36 of these States have ratified the Treaty. Eight States still need to do so: China, North Korea, Egypt, India, Iran, Israel, Pakistan and the United States.

PARTIAL TEST BAN TREATY

- The Test Ban Treaty was signed in Moscow on August 5, 1963; ratified by the United States Senate on September 24, 1963; and entered into force on October 10, 1963.
- This Treaty requires all the party members to prohibit, prevent, and abstain from carrying out nuclear weapons tests or any other nuclear explosions in the atmosphere, in outer space, underwater, or in any other environment.
- India is a member of PTBT.

CONFERENCE ON DISARMAMENT

- UN Conference on Disarmament (CD) is not a formal United Nations (UN) organization.
- It is linked to UN through personal representative of UN Secretary-General.
- It is multilateral forum established in 1979 by international community to negotiate multilateral arms control and disarmament agreements.
- It is headquartered in Palais des Nations, Geneva, Switzerland.



IASBABA

Notes

- The conference has 65 members represent all areas of the world, including all known nuclear-weapon states (including India, Pakistan, Israel and North Korea)
- Resolutions adopted by UN General Assembly often request conference to consider specific disarmament matters.
- In turn, conference annually reports its activities to UNGA.
- In the 1990s, the Conference had held intensive efforts to draft CTBT text and its two annexes, but it did not succeed in reaching consensus on the adoption of the text.
- Currently UNCD conducts discussion on Fissile Material Cut-off Treaty (FMCT), a pact to prevent an arms race in outer space, nuclear disarmament and negative security assurances (NSA).

GROUP 24

- The G-24 is a group of countries that work together to coordinate the positions of developing countries on international monetary and financial issues.
- G-24 membership is not strictly limited to 24 countries, and it actually had 28 full members as of December 2020.
- Although there are some exceptions, the G-24 as a whole contains many nations with excellent growth potential for investors.
- Despite the G-24 success during the first several decades of its existence, its members' fortunes diverged sharply to the point that the group made less sense in 2020.
- The G-24's website listed its full members like Algeria, Argentina, Brazil, Colombia, Congo, Cote d'Ivoire, Ecuador, Egypt, Ethiopia, Gabon, Ghana, Guatemala, Haiti, India, Iran, Kenya, Lebanon, Mexico, Morocco, Nigeria, Pakistan, Peru, the Philippines, South Africa, Sri Lanka, Syria, Trinidad and Tobago, and Venezuela.
- While the G-24 is not an organ of the International Monetary Fund (IMF), the IMF provides services for the G-24.
- Meetings of the G-24 are attended by heads of the World Bank Group, the IMF, and senior UN officials.
- The group meets two times per year.

OECD

- The Organisation for Economic Co-operation and Development (OECD) is an international, intergovernmental economic organization of 38 countries with market economies that work with each other, as well as with more than 70 non-member economies to promote economic growth, prosperity, and sustainable development.
- The organisation's headquarters is at the Château de la Muette in Paris, France.
- OECD provides its members with a forum in which governments can work together to share experiences and seek solutions to common problems.
- Most members in the organisation are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries.
- The OECD member states collectively comprised 2% of global nominal GDP (US \$49.6 trillion) and 42.8% of global GDP (Int \$54.2 trillion) at purchasing power parity (PPP) in 2017.



IASBABA

Notes

- OECD Secretariat is led by the Secretary-General and provides support to Standing and Substantive Committees.
- It is organized into Directorates.
- The European Commission participates in the work of the OECD alongside the EU member states.
- Exchanges between governments benefit from the information, analysis, and preparation of the OECD Secretariat.
- India is not a member of the OECD. But India has had a cooperation programme with it since 1997.
- India became the 27th member of the organisation's Development Centre.
- The OECD Council at the Ministerial level adopted a resolution on 16 May 2007 to strengthen cooperation with India, as well as with Brazil, China, Indonesia and South Africa, through a programme of enhanced engagement, defining these countries as Key Partners of the organisation.

OECD/G20 INCLUSIVE FRAMEWORK TAX DEAL

- India has joined the Organisation for Economic Co-operation and Development (OECD) and G20 Inclusive Framework tax deal of global corporate tax.
- The deal seeks to reform international tax rules and ensure that multinational enterprises pay their fair share wherever they operate.
- Around 130 countries, representing more than 90 percent of global GDP, adopted the global corporate tax rate of at least 15 percent.
- The countries also agreed on a fairer distribution of 'profits and taxing rights with respect to multinationals including digital giants such as Amazon and Google.

BASE EROSION AND PROFIT SHIFTING (BEPS):

- Base Erosion and Profit Shifting (BEPS) indicate tax avoidance strategies that Multinational Corporations (MNCs) employ for reducing their tax bases.
- Developing countries' higher reliance on corporate income tax means they suffer from BEPS disproportionately. BEPS practices cost countries USD 100-240 billion in lost revenue annually.

INDIA-BANGLADESH JOINT WATER COMMISSION

- The Joint Rivers Commission of India and Bangladesh was constituted in the year 1972 as a bilateral mechanism to address issues of mutual interest on common / border / transboundary rivers.
- The JRC is headed by Water Resources Ministers of both countries.
- It is commencing after a long gap of twelve years, although technical interactions under the framework of JRC have continued in the interim.
- As India and Bangladesh share 54 rivers, of which seven have been identified earlier for developing the framework of water-sharing agreements on priority.
- During the latest meeting, they agreed to include eight more rivers for data exchange.



IASBABA

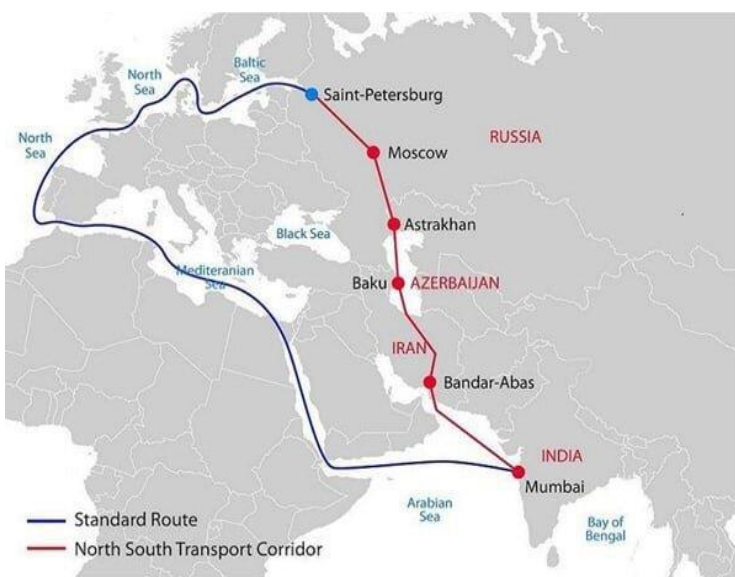
Notes

- It discussed the whole gamut of issues related to common rivers between the two countries, especially the Ganges, Teesta, Manu, Muhuri, Khowai, Gumti, Dharla, Dudhkumar, and Kushiya.
- The Kushiya River is a distributary river in Bangladesh and Assam.
- It forms on the India-Bangladesh border as a branch of the Barak River when the Barak separates into the Kushiya and Surma.
- The waters of the Kushiya pick up tributaries from Manipur, Mizoram, and Assam.
- The Kushiya rejoins with the Surma at Markuli in Ajmiriganj upazila (Bangladesh) and flows south upto Bhairab Bazar (Bangladesh) receiving the name Kalni.
- The Kalni meets with the Dhanu (Bangladesh), a branch of the Surma and renamed as the Meghna.

TRANS-HIMALAYAN MULTI-DIMENSIONAL CONNECTIVITY NETWORK

- China and Nepal recently gave their consent to construct “Trans-Himalayan Multi-Dimensional Connectivity Network”.
- China will also give a grant assistance of USD 118 million to Nepal, to undertake several projects in 2022.
- The network is also called as “Trans-Himalayan network”.
- It is an economic corridor between Nepal and China, under the Belt and Road Initiative.
- The construction of this network was appreciated by Chinese President as switching Nepal “from a landlocked to a land-linked country”.
- The network comprises of multiple transportation infrastructure projects, one such project being “China–Nepal railway”.
- China-Nepal railway project is at feasibility study stage.

INTERNATIONAL NORTH SOUTH TRANSPORT CORRIDOR



- The International North-South Transport Corridor(INSTC) recently began.
- It started off with the two containers that journeyed from Russia to India via Iran.
- The legal framework for the INSTC is provided by a trilateral agreement signed by India, Iran and Russia at the Euro-Asian Conference on Transport in 2000.

- **Aim:**
- To reduce the carriage cost between India and Russia by about 30% and reduce the transit time from 40 days by more than half.



IASBABA

Notes

- The corridor is expected to consolidate the emerging Eurasian Free Trade Area.
- **Components:**
- Northern and Western Europe — the Russian Federation;
- Caucasus — Persian Gulf (Western route);
- Central Asia — Persian Gulf (Eastern Route);
- Caspian Sea - -Iran Persian Gulf (Central Route).
- It is a 7,200-km multi-modal transport corridor that combines road, rail and maritime routes connecting Russia and India via Central Asia and Iran.
- It links the Indian Ocean to the Caspian Sea via the Persian Gulf onwards into Russia and Northern Europe.
- It offers the shortest connectivity route between India and Russia.

PORCUPINE STRATEGY

- The “porcupine doctrine”, which was proposed in 2008 by US Naval War College research professor William S Murray, is a strategy of asymmetric warfare focused on fortifying a weak state’s defences to exploit the enemy’s weaknesses rather than taking on its strengths.
- It is about building defences that would ensure that Taiwan “could be attacked and damaged but not defeated, at least without unacceptably high costs and risks.
- Dr Zeno Leoni, identifies three defensive layers in the porcupine approach
- The outer layer is about intelligence and reconnaissance to ensure defence forces are fully prepared.
- Behind this come plans for guerrilla warfare at sea with aerial support from sophisticated aircraft provided by the US.
- The innermost layer relies on the geography and demography of the island.
- The ultimate objective of this doctrine is that of surviving and assimilating an aerial offensive well enough to organise a wall of fire that will prevent the Chinese People’s Liberation Army (PLA) from successfully invading.

PEN-PLUS STRATEGY

- Recently Africa adopted a pen-plus strategy at the 72nd session of the Regional Committee of the United Nations World Health Organization (WHO) held in Lomé, Togo.
- PEN-PLUS is basically a regional strategy to address serious non-communicable diseases at first level referral health facilities.
- This strategy supports capacity building of district hospitals and other first class referral facilities for early diagnosis and management of serious non-communicable diseases, resulting in reduction in mortality.
- The strategy urges countries to establish standardized programs to combat chronic and serious non-communicable diseases to ensure that essential medicines, technologies and diagnostics are available and accessible in district hospitals.



SCIENCE AND TECHNOLOGY

BETELGEUSE

- Using the European Space Organisation's (ESO) Very Large Telescope (VLT), astronomers have noticed the unprecedented dimming of Betelgeuse, a red supergiant star (over 20 times bigger than the Sun) in the constellation Orion.
- Betelgeuse was born as a supermassive star millions of years ago and has been "dramatically" and "mysteriously" dimming for the last six months.
- What has intrigued some astronomers is the fact that along with the dimming, the star's shape has been changing as well. Instead of appearing round, the star now appears to be "squashed into an ova."
- While Betelgeuse's behaviour is out of the ordinary, it doesn't mean that an eruption is imminent since astronomers predict the star to blast sometime (supernova explosion, which is the largest explosion to take place in space) in the next 100,000 years or so.

EXO-MOONS

- Recently, Scientists have discovered nearly five thousand exoplanets with the help of ground-based and space telescopes.
- Exomoons are considered to be those natural satellites that revolve around exoplanets.
- However, exomoon around any of these planets continues to remain untraceable.
- The signals of exo-moons are too weak, because of their small sizes.
- Origin:
- The solar system consists of a large number of natural satellites with numerous masses and sizes.
- A number of these satellites influence the ambient environment of the Solar planet.
- It is for this reason that a huge number of exomoons are expected to be present, which may also play an important role in the habitability of rocky exoplanets in the habitable zone of stars.

STRONG THERMAL EMISSION VELOCITY ENHANCEMENT

- The cosmic phenomenon known as "Strong Thermal Emission Velocity Enhancement (STEVE) made a surprise appearance after a huge solar storm hit Earth.
- STEVE first appeared in the sky in 2017 and has been appearing often since.
- There is evidence to support the claim that the phenomenon has been visible in the sky since 1705
- It is a rare, mysterious, glowing purple arc that runs east to west and occurs closer to the equator.
- The phenomenon is believed to be caused by a 25 km wide ribbon of hot plasma moving at a speed of 6 km/s (compared to 10 m/s outside the ribbon) at an altitude of 450 km



IASBABA

[Notes](#)

- It has been observed in New Zealand, Canada, Alaska and the United Kingdom during a specific time of the year - between October to February which lead NASA scientists to believe that its occurrence is related to seasons.

SHORTEST DAY 29 JULY : LEAP SECONDS

- On July 29, the Earth broke its record for the shortest day as it completed a full spin in 1.59 milliseconds less than its standard 24-hour rotation.
- Earth recently has been increasing its speed.
- Back in 2020, the Earth saw its shortest month that has ever been recorded since the 1960s.
- On July 19 of that year, the shortest of all time was measured. It was 1.47 milliseconds shorter than a typical 24-hour day.

SMALL SATELLITE LAUNCH VEHICLE (SSLV) D-1

- ISRO developed a small satellite launch vehicle (SSLV) to cater the launch of up to 500 kg satellites to Low Earth Orbits on 'launch-on-demand' basis.
- The first developmental flight SSLV-D1/EOS-02 Mission is scheduled from the First Launch Pad of Satish Dhawan Space Centre, Sriharikota.
- SSLV-D1 mission would launch EOS-02, a 135 kg Satellite, into low earth orbit of about 350 km to the equator, at an inclination of about 37 degrees.
- The mission also carries AzaadiSAT satellite.
- SSLV is configured with three solid stages 87 t, 7.7 t and 4.5 t.
- The satellite insertion into the intended orbit is achieved through a liquid propulsion-based velocity trimming module.
- SSLV is capable of launching Mini, Micro, or Nanosatellites (10 to 500 kg mass) to a 500 km planar orbit.
- SSLV provides low-cost access to Space on demand basis.
- It offers low turn-around time, flexibility in accommodating multiple satellites, launch-on-demand feasibility, minimal launch infrastructure requirements, etc.
- SSLV-D1 is a 34 m tall, 2 m diameter vehicle having a lift-off mass of 120 t.

ASTROBEE

- Astrobbee, NASA's new free-flying robotic system, will help astronauts reduce time they spend on routine duties, leaving them to focus more on the things that only humans can do.
- Working autonomously or via remote control by astronauts, flight controllers or researchers on the ground, the robots are designed to complete tasks such as taking inventory, documenting experiments conducted by astronauts with their built-in cameras or working together to move cargo throughout the station.
- In addition, the system serves as a research platform that can be outfitted and programmed to carry out experiments in microgravity - helping us to learn more about how robotics can benefit astronauts in space.



IASBABA

Notes

- The Astrobees system consists of three cubed-shaped robots, software and a docking station used for recharging.
- The robots use electric fans as a propulsion system that allows them to fly freely through the microgravity environment of the station.
- Cameras and sensors help them to “see” and navigate their surroundings.
- The robots also carry a perching arm that allows them to grasp station handrails in order to conserve energy or to grab and hold items.
- Astrobees builds on the legacy and lessons learned from the SPHERES robots – short for Synchronized Position Hold, Engage, Reorient, Experimental Satellite – which have been aboard the station for over a decade.
- Once the Astrobees system has been fully commissioned, it will take over for SPHERES as the space station’s robotic test facility, helping us to learn new capabilities in our journey to explore space.
- Astrobees's free-flying robots, named Bumble and Honey, were launched to the space station on Apr. 17, 2019, aboard Northrop Grumman's 11th commercial resupply services mission (Northrop Grumman CRS-11) from NASA's Wallops Flight Facility in Virginia.
- Astrobees's third free-flying robot, named Queen, and three perching arms were launched to the space station on Jul. 25, 2019, aboard SpaceX's 18th commercial resupply services mission (SpaceX CRS-18) from Cape Canaveral Air Force Station in Florida.

INDIA'S FIRST COMMERCIAL SPACE SITUATIONAL AWARENESS (SSA) OBSERVATORY

- India's first commercial Space Situational Awareness (SSA) Observatory will be set up in the Garhwal region of Uttarakhand.
- The observatory will monitor activities that take place in space and look out for military satellites and space debris.
- The observatory will be set up by Digantara, a Bengaluru-based space sector start-up.
- At present, the US is a dominant player in monitoring space debris.
- The observatory will bring value to the nation by serving as an essential data source for advancing knowledge of the realm of space.
- It will be able to supplement its space-based sensors in their mission to monitor satellites and debris in orbits ranging from Low Earth Orbit (LEO) to Geosynchronous Earth Orbit (GEO).

FACIAL RECOGNITION TECHNOLOGY

- Right to Information (RTI) responses received by the Internet Freedom Foundation, a New-Delhi based digital rights organisation, reveals that the Delhi Police treats matches of above 80% similarity generated by its facial recognition technology (FRT) system as positive results.
- Facial recognition is an algorithm-based technology which creates a digital map of the face by identifying and mapping an individual’s facial features, which it then matches against the database to which it has access.



IASBABA

[Notes](#)

- In the Automated Facial Recognition System (AFRS), the large database (containing photos and videos of peoples' faces) is used to match and identify the person.
- Image of an unidentified person, taken from CCTV footage, is compared to the existing database using Artificial Intelligence technology, for pattern-finding and matching.
- The facial recognition system works primarily by capturing the face and its features through the camera and then using various kinds of software to reconstruct those features.
- The captured face along with its features is stored into a database, which can be integrated with any kind of software that may be used for security purposes, banking services, etc.

'ANUBIS', 'ROAMING MANTIS' AND 'BIAN LIAN'

- According to a recent study, more people are inclining toward digital payments and there is a rise in the number of people's interactions with their bank or bank accounts happen through their smartphones.
- Mobile banking Trojans are dangerous malware that can steal money from mobile users' bank accounts by disguising the malicious application as a legitimate app to lure unsuspecting people into installing the malware.
- A Trojan is a malicious code or software that looks legitimate but can take control of your device, including smartphones.
- The perpetrators infect the device through legitimate-looking and high-ranking malicious apps on Google Play, smishing (phishing messages sent through SMS).
- Anubis mobile banking trojan virus: It has been targeting Android users since 2017.
- Roaming Mantis is another prolific malware targeting mobile banking users.
- BianLian Malware: BianLian ransomware raises the cybercriminal bar by encrypting files with exceptional speed.
- Threat actors built the new BianLian ransomware in the Go programming language (aka Golang).

ALPHA FOLD

- Recently, DeepMind, a company based in London, announced that it had predicted the three-dimensional structures of more than 200 million proteins using AlphaFold.
- AlphaFold is an Artificial Intelligence-based protein structure prediction tool.
- It is based on a computer system called Deep Neural Network.
- Neural networks use a large amount of input data and provide the desired output exactly like how a human brain would.
- The real work is done by the black box between the input and the output layers, called the Hidden Networks.
- AlphaFold is fed with protein sequences as input.
- When protein sequences enter through one end, the predicted three-dimensional structures come out through the other.



ROSHINI: INDIA'S FIRST SATELLITE WATER LANTERN

- Union Minister of Earth Sciences, Jitendra Singh has launched India's first saline water lantern, 'Roshini', which uses seawater to power Light Emitting Diode (LED) lamps.
- The minister unveiled the first-of-its-kind lantern during his visit to Sagar Anveshika, a coastal research vessel operated by the National Institute of Ocean Technology (NIOT) Chennai for marine research.

INDIA'S FIRST INDIGENOUSLY DEVELOPED HFC BUS

- Recently, the Union Minister of State of Science & Technology launched India's first Hydrogen Fuel Cell (HFC) Bus.
- Bisphenol-A pilot plant in CSIR- National Chemical Laboratory (NCL), an important feedstock for the production of epoxy resins, polycarbonate and other engineering plastics was also inaugurated.

QUANTUM KEY DISTRIBUTION

- Recently, a joint team of experts from the Defence Research and Development Organisation (DRDO) and Indian Institute of Technology (IIT) Delhi demonstrated the Quantum Key Distribution (QKD) link.
- It was done for a distance of over 100 kilometres between Prayagraj and Vindhyachal in Uttar Pradesh.
- The technological breakthrough of demonstrating a QKD Link was achieved over the commercial-grade optical fibre already available in the field.
- QKD is primarily a mechanism to undertake secure communication, which utilises a cryptographic protocol involving various components of quantum mechanics.
- The technology enables two communicating sides to come up with random secret keys shared by both of them and known exclusively to them, so only they can use it to encrypt and decrypt messages, thus achieving a very highly-secure communication.
- The distribution of encryption keys is the crucial factor for this. Sharing of keys over the air or wired links requires encryption, which in turn requires encryption keys to be pre-shared.
- Quantum-based communication offers a robust solution to sharing the keys securely.

Minor Minerals

- Recently, the Union Cabinet has approved a proposal to amend the Second Schedule to the MMDR (Mines and Minerals Development and Regulation) Act to specify the royalty rates of certain minerals, including potash, emerald and platinum group of metals.
- Minor minerals are those which are prescribed by Mines and Minerals (Development and Regulation) Act, 1957 (section 3(e)) as being categorized as 'minor minerals'.
- Any mineral which by the notification of the Central Government may declare to be a minor mineral.
- The State Government may, by notification in the Official Gazette, make rules for regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals and for purposes connected therewith.



IASBABA

Notes

- In addition to those specified under MMDR Act, here are few minerals that the Central Government has declared as minor minerals: boulder, shingle, chalcedony pebbles, lime shell, kankar and limestone, brick-earth, fuller's earth, bentonite, road metal, slate, marble, stone used for making household utensils, quartzite and sandstone, saltpeter and ordinary earth.

Major minerals

- Major minerals are those specified in the Mines and Minerals (Development and Regulation) Act, 1957.
- Some of the major minerals include Lignite, Uranium, Coal, Gold, Iron ore, Lead-Zinc, Magnesium, Tungsten, and Diamond etc.

CLOUD SEEDING

- Cloud seeding is the process of spreading either dry ice or more commonly, silver iodide aerosols, into the upper part of clouds to try to stimulate the precipitation process and form rain.
- Cloud seeding uses planes to spray clouds with chemicals to condense smaller particles into larger rain droplets.
- In India, cloud seeding operations were conducted during the years 1983, 1984–87, 1993–94 by Tamil Nadu Govt due to severe drought.
- In the years 2003 and 2004 Karnataka government initiated cloud seeding.

POLAR AMPLIFICATION

- On August 11, Finnish Meteorological Institute researchers published their study in the Communications Earth & Environment journal, concluding that the Arctic is heating four times faster than the rest of the planet.
- The warming is more concentrated in the Eurasian part of the Arctic, where the Barents Sea north of Russia and Norway is warming at an alarming rate — seven times faster than the global average.
- Global warming, expedited due to anthropogenic forces since pre-industrial times and has increased the planet's average temperature by 1.1 degrees Celsius.
- While changes are witnessed across the planet, any change in the surface air temperature and the net radiation balance tend to produce larger changes at the north and south poles.
- This phenomenon is known as polar amplification; these changes are more pronounced at the northern latitudes and are known as the Arctic amplification.
- Among the many global warming-driven causes for this amplification, the ice-albedo feedback, lapse rate feedback, water vapour feedback and ocean heat transport are the primary causes.
- Sea ice and snow have high albedo implying that they are capable of reflecting most of the solar radiation as opposed to water and land.
- In the Arctic's case, global warming is resulting in diminishing sea ice.



IASBABA

- As the sea ice melts, the Arctic Ocean will be more capable of absorbing solar radiation, thereby driving the amplification.
- The ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.

INDARC

- IndARC Observatory is the first Indian underwater moored observatory located in the arctic region.
- It was deployed in 2014 at Kongsfjorden fjord, Svalbard in Norway, which falls in the middle of Norway and the North Pole.
- The main goal of deploying this observatory is to study the Arctic climate.
- In many ways, the Arctic climate impacts the monsoon season.
- The Indian moored observatory was designed and developed by a group of scientists from various prestigious organizations like the Earth System Science Organization (ESSO), National Centre for Antarctic and Ocean Research (NCAOR), National Institute of Ocean Technology (NIOT), and finally, the Indian National Centre for Ocean Information Services (INCOIS).

[Notes](#)



POLITY

[Notes](#)**FOREIGN EXCHANGE MANAGEMENT (OVERSEAS INVESTMENT) RULES, 2022**

- Recently the union government notified new norms for overseas investments by Indians.
- The Overseas Investment Rules and Regulations, notified under the Foreign Exchange Management Act (FEMA), will be administered by the Reserve Bank of India (RBI), and shall subsume all existing norms pertaining to overseas investments as well as acquisition and transfer of immovable property outside India.
- New norms are aimed at making it easier for domestic corporates to invest abroad, while making it tougher for loan defaulters and others being probed by investigative agencies and regulators to shift funds out of the country.
- No Indian resident shall be allowed to make investments into foreign entities that are engaged in real estate activity, gambling in any form, and dealing with financial products linked to the Indian rupee without the central bank's specific approval.
- To make it difficult for bank defaulters and fraudsters to acquire assets abroad, often as a precursor to leaving the country, the new rules mandate they secure a No Objection Certificate (NOC) from their lender, or concerned regulators and investigative agencies before making any 'financial commitment'.
- This NOC shall be mandatory for any person who has a bank account classified as a non-performing asset, or is labelled a wilful defaulter by any bank, or is under the investigation by a financial service regulator, the Enforcement Directorate (ED) or the Central Board of Investigation (CBI).
- The rules, framed in consultation with the central bank, provide that if lender banks or the concerned regulatory body or investigative agency fail to furnish the NOC within 60 days of receiving an application, it may be presumed that they have no objection to the proposed transaction.
- Any resident in India acquiring equity capital in a foreign entity or overseas direct investment (ODI), will have to submit an Annual Performance Report (APR) for each foreign entity, every year by December 31.
- No such reporting shall be required where a person resident in India is holding less than 10% of the equity capital without control in the foreign entity and there is no other financial commitment other than equity capital or a foreign entity is under liquidation.
- Any resident individual can make ODI by way of investment in equity capital or overseas portfolio investment (OPI) subject to the overall ceiling under the Liberalised Remittance Scheme (LRS) of the Reserve Bank. Currently, the LRS permits \$2,50,000 outward investment by an individual in a year.
- An Indian entity can make OPI not exceeding 50% of its net worth as on the date of its last audited balance sheet.



CAROTAR

- Recently, The Central Board of Indirect Taxes and Customs (CBIC) issued a circular, stating that custom officers should be sensitive in applying CAROTAR (Customs Administration of Rules of Origin under Trade Agreements) Rules, 2020 and maintain consistency with the provisions of relevant trade agreements or its Rules of Origin.
- Exemptions specified in a Free Trade Agreement (FTA) with regard to country of origin will prevail in case of conflict between revenue department and importer.
- CAROTAR, 2020 set guidelines for enforcement of the 'rules of origin' for allowing preferential rate on imports under Free Trade Agreements.
- They supplement the existing operational certification procedures prescribed under different trade agreements.
- They were notified in August, 2020 by the Ministry of Finance.

WEAPONS OF MASS DESTRUCTION AND THEIR DELIVERY SYSTEM (PROHIBITION OF UNLAWFUL ACTIVITIES) AMENDMENT ACT, 2022

- Recently, the Government of India introduced in the Lok Sabha the Weapons of Mass Destruction (WMD) and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill, 2022.
- The bill envisages to prohibit financing of any activity in relation to WMD and to empower to act against financiers of such activities.

highlights of the Bill:

- The bill seeks to modify the Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005.
- Original Legislation: The 2005 Act was enacted to prohibit unlawful activities in relation to weapons of mass destruction and their delivery systems.
- This Act covers unlawful activities relating to biological, chemical and nuclear weapons and their delivery systems.
- It also provides for integrated legal measures to exercise controls over the export of materials, equipment and technologies in relation to weapons of mass destruction and their delivery systems and for prevention of their transfers to non-State actors or terrorists.
- Need of Amendment: The existing Act pertaining to weapons of mass destruction does not cover the financial aspect of such delivery systems and the new provisions are essential to meet international obligations.
- The United Nations Security Council's targeted financial sanctions and the recommendations of the Financial Action Task Force have mandated against financing of proliferation of weapons of mass destruction and their delivery systems.

SPECIAL MARRIAGE ACT, 1954

- Recently, the Supreme Court (SC) dismissed a writ petition challenging provisions of the Special Marriage Act (SMA), 1954 requiring couples to give a notice declaring their intent to marry 30 days before their marriage.
- The SC Rejected the petition on the grounds that the petitioner was no longer an aggrieved party as she had already solemnised her marriage under SMA.



ABOUT SPECIAL MARRIAGE ACT (SMA), 1954:

- Marriages in India can be registered under the respective personal laws Hindu Marriage Act, 1955, Muslim Marriage Act, 1954, or under the Special Marriage Act, 1954.
- It is the duty of the Judiciary to ensure that the rights of both the husband and wife are protected.
- The Special Marriage Act, 1954 is an Act of the Parliament of India with provision for civil marriage for people of India and all Indian nationals in foreign countries, irrespective of religion or faith followed by either party.
- When a person solemnises marriage under this law, then the marriage is not governed by personal laws but by the Special Marriage Act.

Features:

- Allows people from two different religious backgrounds to come together in the bond of marriage.
- Lays down the procedure for both solemnization and registration of marriage, where either of the husband or wife or both are not Hindus, Buddhists, Jains, or Sikhs.
- Being a secular Act, it plays a key role in liberating individuals from traditional requirements of marriage.

Provisions:

Prior notice:

- As per Section 5 of the Act Couples have to serve a notice with the relevant documents to the Marriage Officer 30 days before the intended date of marriage.

Registration:

- Both parties are required to be present after the submission of documents for issuance of public notice inviting objections.
- Registration is done 30 days after the date of notice after deciding any objection that may have been received during that period by the SDM.
- Both parties along with three witnesses are required to be present on the date of registration.

PANCHAYATS (EXTENSION TO THE SCHEDULED AREAS) (PESA) ACT, 1996

- The Parliament enacted a special legislation called Panchayat (Extension to Scheduled Areas) Act (PESA) in 1996 and came into force on 24th December 1996.
- It is now applicable in the Fifth Schedule areas, which deals with the administration of the districts dominated by the tribal communities, and is in force in 10 states of the country.
- These states include Jharkhand, Chhattisgarh, Odisha, Andhra Pradesh, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Rajasthan and Telangana.

Objectives



IASBABA

Notes

- To extend the provisions of Part IX of the Constitution relating to the Panchayats to the Scheduled Areas with certain modifications.
- To provide self-rule for the bulk of the tribal population.
- To have village governance with participatory democracy and to make the Gram Sabha a nucleus of all activities.
- To evolve a suitable administrative framework consistent with traditional practices.
- To safeguard and preserve the traditions and customs of tribal communities.

The Gram Sabhas under PESA Act were entrusted with wide-ranging powers to:

- Enforce prohibition or to regulate or restrict the sale and consumption of any intoxicant.
- Ownership of minor forest produce.
- Prevent alienation of land in the Scheduled Areas and to take appropriate action to restore any unlawfully alienated land of a Scheduled Tribe.
- Manage village markets by whatever name is called.
- Exercise control over money lending to the Scheduled Tribes.
- Exercise control over institutions and functionaries in all social sectors.
- Control over local plans and resources for such plans including tribal sub-plans.
- In 2013, while hearing a case, the Supreme Court of India referred to the PESA and asked the Odisha government to go to the Gram Sabha to get permission for bauxite mining in Kalahandi and Rayagada districts.
- Local forest dwellers were asked whether bauxite mining will affect their religious and cultural rights and they decided against the mining on Niyamgiri hills which led to the cancellation of a huge project.
- The case is considered a milestone that shows the power of the Gram Sabhas but this one of the rare achievements of PESA even as it underlines the possibilities the Act carries.

INDIAN TELEGRAPH RIGHT OF WAY (AMENDMENT) RULES, 2022

- The Department of Telecommunications has released the Indian Telegraph Right of Way (Amendment) Rules, 2022.
- The amendments are expected to expedite the upgradation and expansion of the 5G telecom networks.
- Telecom licensees can enter into an agreement with private property owners and will not require any permission from any government authority for installing telecom infrastructures such as towers, poles or optical fibre.
- No administrative fee shall be charged by the Central government for the establishment of poles on land owned/controlled by it. For State/UTs, this fee will be limited to ₹1,000 per pole. The fee for laying overground optical fibre shall be limited to ₹1,000/ Km.
- Telecom licensees will be able to use street infrastructure to deploy telecom equipment at a cost of ₹150/annum in rural areas and ₹300/annum in urban areas.



IASBABA

[Notes](#)

- Telecom licensees shall not be required to pay compensation for land for the establishment of poles.
- GatiShakti Sanchar portal will be the single window for getting all the Right of Way(RoW) clearances.

DENOTIFIED NOMADIC TRIBES

- The term 'De-notified Tribes' stands for all those communities which were once notified under the Criminal Tribes Acts, enforced by the British Raj between 1871 and 1947.
- These Acts were repealed by the Independent Indian Government in 1952, and these communities were "De-Notified".
- A few of these communities which were listed as de-notified were also nomadic.
- Terms such as nomads and semi-nomads are applied to 'social groups who undertook a fairly frequent, usually seasonal physical movement as part of their livelihood strategy in the recent past.
- The term semi-nomad is mostly used to describe those sections of nomads whose duration, distance and frequency of movement is comparatively less than others.
- The distinction between nomads and semi-nomads do not involve distinguishable ethnic categories or social groups, it rather describes the degree of mobility practiced by them.

STATUS IN INDIA

- It has been estimated that South Asia has the world's largest nomadic population. In India, roughly 10 % of the population is Denotified and Nomadic.
- While the number of Denotified Tribes is about 150, the population of Nomadic Tribes consists of about 500 different communities.
- While the Denotified Tribes have almost settled in various States of the country, the Nomadic Communities continue to be largely nomadic in pursuit of their traditional professions.
- The Government in July 2014 had constituted National Commission for Denotified, Nomadic and Semi-Nomadic Tribes (NCDNT) for a period of three years to prepare a State-wise list of castes belonging to Denotified and Nomadic Tribes and to suggest appropriate measures in respect of Denotified and Nomadic Tribes that may be undertaken by the Central Government or the State Government.

COMMISSIONS FOR DENOTIFIED TRIBES IN INDIA

- Idate Commission Report.
- The Renke Commission (2008) was earlier commissioned to identify and list the DNT communities.
- A Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic communities has also been constituted vide gazette Notification dated 21.02.2019 for Development and Welfare of De-notified, Nomadic and Semi-Nomadic communities.



S. SUBRAMANIAM BALAJI VS TAMIL NADU (2013) JUDGEMENT

- Recently, the Supreme Court referred to a three-judge Bench a series of petitions seeking a judicial direction that political parties who make “wild” promises of largesse should also reveal in their poll manifestos where they will get the money to pay for them.
- The reference is a shift from the court’s own stand in the S. Subramaniam Balaji vs Tamil Nadu judgment of 2013.
- In the Balaji case judgment, the SC had held that making promises in election manifestos do not amount to a ‘corrupt practice’ under Section 123 of the Representation of People Act (RP).
- The Courts’ recent stand is that parties who form the government riding the wave created by their pre-poll promises of “free gifts” are bleeding the State finances dry by actually trying to fulfil their outlandish promises using public money.
- The Supreme Court has therefore decided to revisit the Balaji verdict.

Judgement

- The court’s judgment held that promises by a political party cannot constitute a ‘corrupt practice’ on its part.
- It would be “misleading” to construe that all promises in the election manifesto would amount to corrupt practice.
- The manifesto of a political party is a statement of its policy. The question of implementing the manifesto arises only if the political party forms a government.

REVIEWING ITS OWN JUDGEMENTS BY SUPREME COURT: UNDER ARTICLE 137

- The Centre recently moved the Supreme Court seeking a review of its order prematurely releasing six convicts serving life imprisonment for the assassination of former Prime Minister Rajiv Gandhi in 1991.
- A judgement of the Supreme Court becomes the law of the land, according to the Constitution.
- It is final because it provides certainty for deciding future cases.
- Article 137 of the Constitution of India grants the Supreme Court the power to review any of its judgments or orders.
- This power is however subject to the Rules made by the Supreme Court under Article 145, as well as the provisions of any law enacted by parliament.
- Lawyers in review petitions usually make their case through written submissions, and not oral arguments.
- The same judges who passed the original verdict usually also hear the review petition.
- In a 2013 ruling, the Supreme Court itself laid down three grounds for seeking a review of a verdict it has delivered:
 - The discovery of new and important matter or evidence which, after the exercise of due diligence, was not within the knowledge of the petitioner or could not be produced by him.
 - Mistake or error apparent on the face of the record



IASBABA

[Notes](#)

- Any other sufficient reason.
- The court here specified that any sufficient reason means a reason that is analogous to the other two grounds.

ARTICLE 143

- The Constitution (Article 143) authorises the president to seek the opinion of the Supreme Court in the two categories of matters:
- On any question of law or fact of public importance which has arisen or which is likely to arise.
- On any dispute arising out of any pre-constitution treaty, agreement, covenant, engagement, sanad or other similar instruments.

ARTICLE 145

- Article 145(3) provides, “The minimum number of Judges who are to sit for the purpose of deciding any case involving a substantial question of law as to the interpretation of this Constitution or for the purpose of hearing any reference under Article 143 shall be five.”
- Article 145 gives to the Supreme Court power to frame rules including rules regarding condition on which a person can practice in the Supreme Court.
- Such a rule would be valid and binding on all.
- Such a rule if framed would not have anything to do with the disciplinary jurisdiction of Bar Councils.

PARLIAMENTARY PRIVILEGES

- Parliamentary privilege refers to rights, immunities, and exemptions enjoyed by MP individually and collectively to discharge their functions responsibly.

Source of the Privileges

- Article 105 for the Parliament and Article 194 for State Legislature
- Various laws are made by Parliament
- Rules of both the Houses
- Parliamentary conventions
- Judicial interpretations

Individual Privileges:

- These are the rights that each member of parliament has in his official capacity. For instance, MPs are free to speak their minds in the House, cannot be detained in civil proceedings 40 days before or after the start of the current session of Parliament, and are not required to serve on juries.
- During the session of the legislature, a member cannot be arrested.
- Additionally, members cannot be detained 40 days before or after the session's beginning or end.
- Parliamentarians have a right to free speech inside the chambers.



IASBABA

- They are not subject to any legal action as a result of their statements made in the parliament or its committees.
- However, it is controlled by the guidelines.
- When Parliament is in session, they have the option to decline to provide testimony and appear as a witness in a case that is pending in court.

Collective Privileges:

- These are the collectively conferred privileges and are more generic in nature. For instance, the right to publish documents, reports, and discussions and to forbid others from doing the same.
- Right to hold private meetings, the Right to be informed of members' arrests and releases, and the authority to penalize for disrespect or violating a privilege.
- There can be no judicial procedure served without notifying the presiding officer.
- The Indian parliament has the right to keep outsiders out of its sessions.
- The parliamentary privilege also includes the houses' private sessions.
- The two houses have the authority to establish regulations for their working methods, business conduct, and work assessment.
- In the event of a privilege violation, the parliament may suspend or expel members.
- If a member or outsider violates a privilege, the parliament may punish them.
- The court cannot examine into the activities of the houses and committees of the parliament.

MINORITY STATUS IN INDIA

- Supreme Court says that Minority status of religious, linguistic communities is State-dependent.
- It held that every person in India can be a minority in one State or the other.
- Minority status of religious and linguistic communities is "State-dependent".
- It says a religious or linguistic community which is a minority in a particular State can claim protection and right to run own educational institutions under Articles 29 and 30.

Background

- The court was hearing a petition filed by a Mathura resident, complaining that followers of Judaism, Bahaism and Hinduism, who are the real minorities in some states cannot establish and administer educational institutions of their choice because of non-identification of 'minority' at State level, thus jeopardising their basic rights guaranteed under Articles 29 and 30.
- The petition has argued that the recognition of Muslims, Christians, Sikhs, Buddhists and Parsis nationally by the Centre as 'minorities' ignored the fact that religious communities like Hindus were "socially, economically, politically non-dominant and numerically inferior" in several States.

[Notes](#)



IASBABA

Notes

- It pointed out that Hindus were a mere 1% in Ladakh, 2.75% in Mizoram, 2.77% in Lakshadweep, 4% in Kashmir, 8.74% in Nagaland, 11.52% in Meghalaya, 29% in Arunachal Pradesh, 38.49% in Punjab and 41.29% in Manipur.
- The petition also challenged Section 2(c) of the National Commission for Minorities (NCM) Act 1992, which gave “unbridled power” to the Centre to notify minorities in defiance of the Supreme Court’s 11-judge Bench judgment in T.M.A Pai case.

Judgements related to determination on minority status

TMA Pai Case:

- The SC had said that for the purposes of Article 30 that deals with the rights of minorities to establish and administer educational institutions, religious and linguistic minorities have to be considered state-wise.

Bal Patil Case:

- In 2005, the SC in its judgement in ‘Bal Patil’ referred to the TMA Pai ruling.
- The legal position clarifies that henceforth the unit for determining status of both linguistic and religious minorities would be ‘state’.

How is a community notified as a minority?

- Under Section 2(c) of the National Commission for Minorities Act of 1992 central government has the power to notify a community as a minority

NOTIFIED MINORITIES IN INDIA

- Currently, only those communities notified under section 2(c) of the NCM Act, 1992, by the central government are regarded as minority.
- In 1993, the first Statutory National Commission was set up and five religious communities viz. The Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis) were notified as minority communities.
- In 2014, Jains were also notified as a minority community.

CONSTITUTIONAL PROVISIONS FOR MINORITIES

Article 29

- It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.
- It grants protection to both religious minorities as well as linguistic minorities

Article 30:

- All minorities shall have the right to establish and administer educational institutions of their choice.
- The protection under Article 30 is confined only to minorities (religious or linguistic) and does not extend to any section of citizens (as under Article 29).

Article 350-B:

- The 7th Constitutional (Amendment) Act 1956 inserted this article which provides for a Special Officer for Linguistic Minorities appointed by the President of India.



IASBABA

[Notes](#)

- It would be the duty of the Special Officer to investigate all matters relating to the safeguards provided for linguistic minorities under the Constitution.

DATA ANONYMIZING DRAFT GUIDELINES

- Recently, the Ministry of Electronics and Information Technology (MeitY) released a policy proposal titled as, “Draft India Data Accessibility & Use Policy, 2022”.
- The policy objectives mentioned in this draft are primarily commercial in nature. It aims to radically transform India’s ability to harness public sector data.
- Earlier, a government committee headed by Infosys co-founder Kris Gopalakrishnan has suggested that non-personal data generated in India be allowed to be harnessed by various domestic companies and entities.

Major Proposals of the Draft Data Accessibility Policy:

- **India Data Office:** The document proposes the establishment of an India Data Office (IDO) to streamline and unify data access and sharing among government and other stakeholders.
 - It will define frameworks for high-value data sets, finalise data standards and metadata standards and review policy implementation, among others.
 - Every ministry or department should have Data Management Units, headed by Chief Data Officers, which will work closely with the IDO to ensure the implementation of this policy.
- **Coverage:** All data and information generated, created, collected, or stored by the central government and authorised agencies shall be covered by the policy. The measures can also be adopted by state governments.
- **Restricted Data:** All government data will be open and shareable unless it falls under a negative list of data sets.
 - Data categorised under the negative list of datasets that won’t be shared, and restricted access and shared only with trusted users, as defined by the respective ministry or department, under the controlled environment.
- **Data Toolkit:** All ministers or departments will receive a data-sharing toolkit to help assess and manage risk associated with data sharing and publication.
 - The framework will assist data officers in determining whether a data set qualifies for release, restricted sharing, or must be placed on the negative list, as well as the proper release channel and degree of anonymity required.
- **Aligned to Existing Laws:** Data shall remain the property of the agency/ department/ ministry/ entity which generated/collected it. Access to data under this policy shall not be in violation of any acts and rules of the government of India in force.
 - The legal framework of this policy shall be aligned with various acts and rules covering the data.



ARMED FORCES TRIBUNAL

- Defence Minister said that the Government is committed to make the Armed Forces Tribunal (AFT) more empowered and responsive and implement measures that were required in this direction.
- It was established in August 2009 by the Armed Forces Tribunal Act 2007.
- The Law Commission's 169th report stated that disciplinary and service matters required quick resolutions and proposed a special tribunal for the military forces.
- It is a military tribunal with the power of adjudication or trial of disputes and complaints related to commission, appointments, enrolments and conditions of service.
- Besides the Principal Bench in New Delhi, AFT has 10 Regional Benches.

Composition

- The Tribunal is composed of Judicial Members as well as Administrative Members.
- The Judicial Members are retired High Court Judges.
- Administrative Members are retired Members of
- the Armed Forces who have held rank of Major General/ equivalent or above for a period of three years or more; or
- the Judge Advocate General(JAG) who have experience in the post for at least one year.

Power/Jurisdiction

- The Tribunal is empowered to adjudicate appeals against any order, decision, finding or sentence passed by a court-martial or any related matter.
- It is also empowered to grant bail to an accused who is in military custody.
- The Tribunal may have the powers to substitute for the findings of the court martial. It may:
 - remit the whole or any part of the sentence, with or without conditions;
 - mitigate the punishment awarded
 - commute such punishment to any lesser punishment or enhance the sentence awarded by a court martial.
- Armed Forces Tribunal has both Original and Appellate Jurisdiction

Jurisdiction of other courts

- In 2015, a Supreme Court bench had held that AFT verdicts could not be challenged before the high courts.
- It had also said that an appeal against the AFT orders would lie before the apex court but only if a point of law of general public importance is involved.
- In January 2020, the Supreme Court made it clear that the verdicts of the Armed Forces Tribunals (AFT) can be challenged before the high courts.
- In March 2022, Delhi High Court held that the Armed Forces Tribunal Act, 2007 excludes the administrative supervision of the High Court under Article 227(4) of the Constitution.



IASBABA

[Notes](#)

- However, it does not exclude the judicial superintendence and jurisdiction under Article 226.

KHANIJ BIDESH INDIA LTD.

- It is a Joint Venture Company set up with the participation of three Central Public Sector Enterprises namely, National Aluminium Company Ltd.(NALCO), Hindustan Copper Ltd.(HCL) and Mineral Exploration Company Ltd. (MECL).
- It was formed in 2019 for sourcing strategic minerals like lithium and cobalt from overseas locations.
- It is under the Ministry of Mines.
- The equity participation between NALCO, HCL and MECL is in the ratio of 40:30:30.
- KABIL has been created in a bid to ensure India's mineral security and to attain self-reliance in the area of strategic and critical minerals. KABIL has been mandated to identify and acquire overseas mineral assets like Lithium, Cobalt etc.
- KABIL ensure mineral security of the nation as well as help in realizing overall objective of import substitution.

Functions:

- The KABIL would carry out identification, acquisition, exploration, development, mining and processing of strategic minerals overseas for commercial use and meeting country's requirement of these minerals.
- The sourcing of these minerals or metals is to done by creating trading opportunities, G2G collaborations with the producing countries or strategic acquisitions or investments in the exploration and mining assets of these minerals in the source countries.
- The new company will help in building partnerships with other mineral rich countries like Australia and those in Africa and South America, where Indian expertise in exploration and mineral processing will be mutually beneficial bringing about new economic opportunities.

INDIAN OLYMPIC ASSOCIATION

- Indian Olympic Association (IOA) was established in 1927 as a Non-Profit Organisation under Societies Registration Act, 1860.
- It is an autonomous body recognised by the Ministry of Youth Affairs and Sports.
- The creation of the Indian Olympic Association was related to India's participation in the 1920 and 1924 Olympics.
- In 1923–24, a provisional All India Olympic Committee was formed, and the All India Olympic Games (that later became the National Games of India) were held in Feb 1924.
- This gave impetus to the development and institutionalization of sports in India, and, in 1927, the Indian Olympic Association (IOA), was created.
- And so the Indian Olympic Association was formed in 1927, and since that year it was officially recognised by the International Olympic Committee as India's national Olympic organisation.



IASBABA

- It also acts as the Indian Commonwealth Games Association, responsible for selecting athletes to represent India at the Commonwealth Games.

ECONOMY

MOONLIGHTING

- The practice of working for one organisation while also taking up extra responsibilities and jobs, typically without the employer's knowledge, is referred to as moonlighting.
- It refers to the practice of taking up secondary jobs after regular work hours.
- It is called so the side employment is typically performed at night or on the weekends.
- The phrase became well-known when Americans began looking for second jobs in addition to their regular 9-to-5 jobs to supplement their income.

CANTILLON EFFECT

- The Cantillon effect refers to the idea that changes in the money supply in an economy causes redistribution of purchasing power among people, disturbs the relative prices of goods and services, and leads to the misallocation of scarce resources.
- It is generally accepted by economists today that an increase in the overall money supply in an economy causes a proportionate rise in the prices of goods and services over the long-run which is known as the 'Cantillon effect'.
- The Cantillon effect is named after the 18th century French economist Richard Cantillon.
- According to the Quantity theory of money, the total amount of money in an economy plays a crucial role in determining the general price level.
- So, if the money supply in an economy doubles this should lead to a rough doubling of prices across the economy. In other words, money has largely been considered to be "neutral," in the sense that changes in its supply have no real effect on the economy.

PERPETUAL BONDS (CONSOL BOND)

- A perpetual bond, also known as a "consol bond" or "perp," is a fixed income security with no maturity date.
- This type of bond is often considered a type of equity, rather than debt.
- One major drawback to these types of bonds is that they are not redeemable.
- The primary issuers of perpetual bonds are government entities and banks.
- Banks issue such bonds as a means of helping them meet their capital requirements – the money received from investors for the bonds qualifies as Tier 1 capital.
- AT1 bonds are a type of perpetual debt instrument with no maturity date.
- AT1 Bonds are mainly used to raise long-term capital.
- They offer high returns but at a higher risk.
- In the case of a crisis, the RBI can instruct the troubled bank to write off this bond without consulting the investors.

[Notes](#)



REGIONAL RURAL BANKS

- Regional Rural Banks Act, 1976:
- Regional Rural Banks (RRBs) were set up as government-sponsored, regional based rural lending institutions under the Regional Rural Banks Act, 1976.
- The RRBs were established as per the recommendations of the Narasimham Committee to cater to the rural credit needs of the farming and other rural communities.
- The Prathama Grameen Bank was the first bank to be established on 02nd October 1975. The Syndicate Bank became the first commercial bank to sponsor the Prathama Grameen Bank RRB
- Regional Rural Banks (RRBs) are government owned scheduled commercial banks of India that operate at regional level in different states of India.
- The area of operation is limited to the area notified by the government of India covering, and it covers one or more districts in the State.
- The equity of the Regional Rural Banks is held by the stakeholders in a fixed proportion. This proportion is 50:35:15, distributed as:
 - Central Government – 50%
 - Sponsor Bank – 35%
 - State Government – 15%

BLUE BONDS

- Blue bonds are pioneering financial instruments that are designed to support sustainable marine and fisheries projects.
- They are a subset of the green bonds.
- The World Bank defines blue bonds “as a debt instrument issued by governments, development banks or others to raise capital from impact investors to finance marine and ocean-based projects that have positive environmental, economic and climate benefits.”
- In 2018, the Republic of Seychelles launched the world’s first sovereign blue bond.
- SEBI has suggested strengthening the framework for green bonds by amplifying the definition of green debt securities and enhancing disclosures.

ACCOUNT AGGREGATOR

- Account Aggregator is a non-banking financial company that simply facilitates sharing of financial information in a real-time and data-blind manner between regulated entities.
- The licence for Account Aggregators(AAs) is issued by the Reserve Bank of India(RBI).
- State Bank of India, ICICI Bank, Axis Bank, IDFC First Bank, Kotak Mahindra Bank, HDFC Bank, IndusInd Bank and Federal Bank have joined the Account Aggregator(AA) network that will enable customers to easily access and share their financial data.

Benefits of Account Aggregator



IASBABA

Notes

- Customers: AA framework allows customers to avail various financial services from a host of providers on a single portal based on a consent method under which the consumers can choose what financial data to share and with which entity.
- Less Physical Interaction: AA creates secure, digital access to personal data at a time when Covid-19 has led to restrictions on physical interaction.
- Reduction in Frauds: It also reduces the fraud associated with physical data by introducing secure digital signatures and end-to-end encryption for data sharing.

MESLIN FLOUR

- The Union Cabinet has approved changes in the policy of exports of wheat and has removed the exemptions on Wheat or Meslin Flour from export restrictions or ban.
- This will now allow the government to put a restriction on the export of Wheat Flour which will ensure a curb on the rising prices of wheat flour.
- Meslin Flour is a wheat and rye blend that is sown and harvested together. It is typically traded alongside wheat.
- In 2020, the top exporters of meslin flour were Turkey, Kazakhstan, and Germany.
- In 2020, the top importers of meslin flour were Afghanistan, Iraq, and Netherlands.

GOLD INDUSTRY IN INDIA

- As per National Mineral Inventory data, the total reserves/resources of gold ore (primary) in the country have been estimated at 501.83 million tonnes as of 2015
- The largest reserves of gold ores are located in Bihar (44 per cent), followed by Rajasthan (25 per cent), Karnataka (21 per cent), West Bengal (3 per cent), Andhra Pradesh (3 per cent), Jharkhand (2 per cent).
- The remaining 2 per cent reserves are in Chhattisgarh, Madhya Pradesh, Kerala, Maharashtra and Tamil Nadu.
- The Geological Survey of India (GSI) is actively engaged in geological mapping, followed by mineral exploration and surveys, of various mineral commodities with an aim to identify potential mineral rich zones and establish resources.
- MMDR (Mines and Minerals Development and Regulation) Act, 1957 regulates the overall mining sector in India

JUTE PRODUCTION

- According to the third advance estimates released by the Union Ministry of Agriculture and Farmers Welfare in May 2022, it has fallen by over 13 percent in the past decade — 1.77 million tonnes in 2021-22, from 2.03 million tonnes in 2011-12.
- The average area under jute in the country was 0.82 million ha between 2000-01 and 2009-10, according to a 2021 report by the Commission for Agricultural Costs and Prices (CACP).
- This declined to 0.73 million ha between 2010-11 and 2019-20.
- While India's production and acreage declined, Bangladesh's production and area under jute has increased over the years.
- India is still the largest producer of jute but in terms of acreage, Bangladesh is the largest cultivator.



IASBABA

- It also accounts for nearly 75 percent of the global jute exports, while India's share is just 7 percent.
- Even India imports jute products (yarn, floor coverings and jute hessian) from Bangladesh.
- In 2020- 21, India imported products worth Rs 1,123 crore from Bangladesh.
- Imports from Bangladesh had adversely affected the domestic industry, given that the landed price of jute and its products from the neighbouring country was less than the domestic rate.

Jute

- Temperature: A mean maximum and minimum temperature of 34oC and 15oC and a mean relative humidity of 65% are required.
- Rainfall required: Around 150-250 cm
- Soil Type:
- Jute can be raised on all kinds of soils from clay to sandy loam, but loamy alluvial soils are best suited.
- The new grey alluvial soils of good depth, receiving silt from the annual floods are the best for jute cultivation.
- Highly profitable commodity:
- Its leaves are sold in markets as a vegetable even before the crop is harvested.
- The inner stem can be used to manufacture paper while the outer layer produces fibre.

Jute-ICARE

- Jute-ICARE (Improved Cultivation and Advanced Retting Exercise) programme for increasing the productivity and quality of jute.
- It was launched by National Jute Board (NJB).
- The objective is to support the small and marginal jute growers with adequate pre- and post-harvesting operations.

COAL RESERVES IN INDIA

- India is the second largest producer and consumer of coal after China.
- Jharkhand is the largest coal-producing state in India.
- The top coal-producing states includes Odisha, Chhattisgarh, West Bengal, Madhya Pradesh, Telangana and Maharashtra.
- Coal accounts for approximately 55% of the country's energy needs compared to other energy sources.

Types of Coal:

Anthracite:

- Anthracite is the best quality of coal which carries 80 to 95 per cent carbon content.
- It ignites slowly with a blue flame and has the highest calorific value.
- It is found in small quantity in Jammu and Kashmir.

Bituminous:

[Notes](#)



IASBABA

- Bituminous carries 60 to 80 per cent of carbon content and a low level of moisture content.
- It is widely used and has high calorific value.
- It is found in Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh.

Lignite:

- Lignite is often brown in colour. It carries 40 to 55 per cent carbon content.
- It is an intermediate stage which happens during the alteration of woody matter into coal.
- It has high moisture content, so it gives smoke when burnt.
- It is found in Rajasthan, Lakhimpur (Assam), and Tamil Nadu.

Peat:

- Peat has less than 40 per cent carbon content.
- It is in the first stage of transformation from wood to coal.
- It has low calorific value and burns like wood.

About Global Energy Monitor:

- In 2007, responding to a call to action by climate scientist James Hansen, an informal group of journalists and environmental advocates began documenting 151 proposed coal plants in the United States which eventually became Global Energy Monitor.
- Global Energy Monitor was founded on principles of transparency and accountability.
- In 2014, GEM released the Global Coal Plant Tracker, an interactive database cataloguing thousands of coal-fired plants in all stages of development.
- GEM's team consists of researchers from around the world whose work enhances public understanding of the global energy system.
- Global Energy Monitor is a mission-driven Non-Profit organization.
- A majority of funding comes in the form of charitable donations from foundations and individuals.

BHARAT BILL PAYMENT SYSTEM

- The Reserve Bank of India has eased the norms for non-bank entities for setting up Bharat Bill Payment operating units by reducing the net worth that is required to Rs 25 crore.
- BBPS is an interoperable platform that is used for bill payments and the coverage of this platform is extended to all categories of billers raising recurring bills. Payments through this platform can be made via transfer cheques, cash, and electronic modes. The BBPS is owned by the National Payments Corporation of India (NPCI). It is a payment platform that provides safety and reliability of transactions. The users of this platform enjoy benefits such as:
 - a centralized customer grievance redressal mechanism,
 - standardized bill payment experience
 - prescribed customer convenience fee

[Notes](#)



IASBABA

Notes

- Currently, the BBPS has been integrated with the Unified Payments Interface (UPI) for safe, easy, and instant payments that can be done through UPI-enabled smartphones.
- All those entities that have received authorization from the RBI to conduct bill payments on the BBPS are known as BBPOU.
- They can be non-bank or bank entities.
- The NPCI functions as the authorized Bharat Bill Payment Central Unit (BBPCU), which is responsible for setting various business standards, procedures, and rules for business and technical requirements for all participants.
- NPCI, as the BBPCU, also undertakes settlement and clearing activities that are related to transactions routed via the BBPS.

VANDE BHARAT EXPRESS

- The Vande Bharat Express offers a myriad of superior amenities which will provide passengers with aircraft like travelling experience.

Features

- Advanced state-of-the-art safety features including Kavach technology - an indigenously developed Train Collision Avoidance System.
- The train has been provided with bogies having fully suspended traction motors for 160 kmph operational speed along with the advanced state-of-the-art suspension system ensuring a smooth and safe journey and enhanced riding comfort for passengers.
- The train has been designed to increase Indian Railways' Green footprint by dispensing with the power cars and saving about 30 per cent of electricity with the advanced regenerative braking system.
- In any emergency situation, loco pilot and train guard can easily communicate with each other as well as passengers, the loco pilot of the Vande Bharat Express.
- The new Vande Bharat trains would have improved features including reclining seats, automatic fire sensors, CCTV cameras, on-demand content with wifi Facility, three-hour battery backup and GPS systems to make travelling safer and more comfortable.
- It also has a photocatalytic ultraviolet air purification system in the roof-mounted package unit (RMPU) for air purification.
- The weight of the train has been reduced by 38 tonnes to 392 tonnes and it can continue functioning even with two feet of flood waters on the tracks. These are made of stainless steel.
- Due to less weight, the passengers would feel extra comfortable even at high speed.

SUPER VASUKI

- Indian Railways has set a new record by operating its longest and heaviest freight train ever called 'Super Vasuki'.
- It was the longest and heaviest freight train ever run-on Indian Railways.



WORLD'S HIGHEST RAILWAY BRIDGE

- Recently, the 'Golden Joint' of the Chenab railway bridge was inaugurated in Jammu and Kashmir.
- It is the World highest Railway bridge.
- It is a steel and concrete arch bridge between Bakkal and Kauri in the Reasi district of Jammu and Kashmir.
- It is situated 359 m above the Chenab river.
- It comprises 93 deck segments, each weighing around 85 tonnes.
- It is located on the single line linking Katra (Jammu) with Qazigund (Kashmir).
- The project is part of the 272-km long railway line from Udhampur to Baramulla joining Jammu with the Kashmir valley.

DEFENCE

INS VIKRAMADITYA

- Recently, the Prime Minister of India commissioned India's first indigenous aircraft carrier Indian Naval Ship (INS) Vikrant in Kochi.
- Currently, India has two aircraft carriers (INS Vikramaditya (from Russia) & INS Vikrant (present one)).
- The name 'INS Vikrant' originally belonged to India's first aircraft carrier which was acquired from the UK, and played a vital role in the 1971 War with Pakistan before it was decommissioned in 1997.
- Designed and developed by the Indian Navy's in-house Warship Design Bureau (WDB) and built by Cochin Shipyard Limited, a Public Sector Shipyard under the Ministry of Ports, Shipping and Waterways.
- It has been built with state-of-the-art automation features and is the largest ship ever built-in maritime history of India.
- The ship is capable of operating an air wing consisting of 30 aircraft comprising MiG-29K fighter jets, Kamov-31, MH-60R multi-role helicopters, in addition to indigenously manufactured Advanced Light Helicopters (ALH) and Light Combat Aircraft (LCA) (Navy).
- The ship can accommodate an assortment of fixed-wing and rotary aircraft.
- The warship will also offer an "incomparable military instrument with its ability to project Air Power over long distances, including offensive, Air Interdiction, Anti-Surface Warfare, defensive Counter-Air, Airborne Anti-Submarine Warfare and Airborne Early Warning.

HELLFIRE R9X MISSILE

- Better known in military circles as the AGM-114 R9X, the Hellfire R9X is a US-origin missile known to cause minimum collateral damage while engaging individual targets.
- Hellfire is actually an acronym for Heliborne, Laser, Fire and Forget Missile and it was developed in the US initially to target tanks from the Apache AH-64 attack helicopters.



IASBABA

[Notes](#)

- Later, the usage of these missiles spread to several other variants of helicopters and also ground and sea-based systems and drones.
- Developed by Lockheed Martin and Northrop Grumman, the Hellfire missile has other variants such as 'Longbow' and 'Romeo' apart from the 'Ninja'.

SWARM DRONE SYSTEMS

- Swarm drones are lightweight drones that carry multiple packages to a single destination at a time. In simple, **multiple drones are engaged in a single operation.**
- In this system, multiple drones receive commands from a single drone. They overcome single drone's payload and battery limitations.
- They work on Swarm Intelligence which is the **collective behaviour of decentralized and self-organized Systems.**
- The Swarm drones of Indian Army has a range of 50 kilometres.
- These drones can make deep in roads behind enemy lines with the capability to hit the target from a distance of 500 metres.
- The drones carry out randomised sonic missions using artificial intelligence. They are driven by continuous satellite feeds.
- These drones can also be used for dropping food, ammunition, medicine and other special needs for soldiers positioned in locations cut away from supply line.

NIPUN MINES AND BUTTERFLY MINES

- The UK Ministry of Defence, in its intelligence assessment of the ongoing war in Ukraine, has and sounded an alarm on the possible use of PFM-1 series 'Butterfly Mines' by the Russian military in Donetsk and Kramatorsk.
- The PFM-1 and PFM-1S are two kinds of anti-personnel landmines that are commonly referred to as 'Butterfly mines' or 'Green Parrots'.
- These names are derived from the shape and colour of the mines.
- The main difference between the PFM-1 and PFM-1S mine is that the latter comes with a self destruction mechanism which gets activated within one to 40 hours.
- The 'Butterfly mine' has earned a reputation for being particularly attractive to children because it looks like a coloured toy.
- It is very sensitive to touch and just the act of picking it up can set it off.
- Because of the relatively lesser explosive packed in this small mine, it often injures and maims the handler rather than killing them.
- These mines are also difficult to detect because they are made of plastic and can evade metal detectors.
- These mines can be deployed in the field of action through several means, which include being dropped from helicopters or through ballistic dispersion using artillery and mortar shells.
- These mines glide to the ground without exploding and later explode on coming in contact.
- Since these mines were green in colour when they were first put to use they also earned the name 'Green Parrots'.



IASBABA

Notes

- The PFM series mines are moulded in polythene plastic and have two wings, one of which is heavier than the other.
- The thicker wing is the pressure activation for the main fuse which is contained in the central body.
- The thinner wing acts as a stabiliser for the mine when it is air-dropped, thus giving it the name 'butterfly'.
- As per data available on the mine, a pressure exceeding 5 kg will activate the mine which contains 40g of explosive.
- The rapid means of deployment of the mine and the fact that it can be indiscriminately scattered to impede the advance of an enemy makes it an attractive option for a field commander, regardless of the danger that these can pose for non-combatants living in the area.

ZORAVAR TANK

- Realising the protracted threat along the northern borders with China and the induction of the enemy's technologically "state-of-art" tanks, the Indian Army is pushing for "Project Zorawar".
- Zorawar will be the name of the Light Tanks which have been envisaged to be manufactured indigenously.
- Zorawar will be designed to operate from High Altitude Area, the marginal terrain to the Island territories and will be highly transportable for rapid deployment to meet any operational situation.
- Zorawar will have niche technologies to include Artificial Intelligence, Drone integration, Active Protection System, High Degree of Situational Awareness.
- Zorawar Singh Kahluria was the famed military general of Dogra King Gulab Singh and was adept at mountain warfare. New tanks will be named after him.
- Missile-firing capability, counter-drone apparatus, warning system and a power-to-weight ratio will make the tanks "very agile".
- The light tanks will help the Army overcome the limitations of medium battle tanks and equip the force for all contingencies in high altitude area, marginal terrain and island territories besides its utilisation in the plains, semi-deserts and deserts.

LANDING CRAFT ASSAULT

- Defence Minister handed over two new weapons – the Nipun mines, the Landing Craft Assault (LCA) and the F-INSAS system – to the Army.
- F-INSAS stands for Future Infantry Soldier As A System, a programme for infantry modernisation aimed at increasing the operational capability of the soldier.
- As part of the project, soldiers are being equipped with modern systems that are lightweight, all-weather-all-terrain, cost-effective and low maintenance.
- The full-gear of the F-INSAS system includes an AK-203 assault rifle, a multi-mode hand grenade, which can be used in defensive and offensive modes.
- The weapon kit also has a multi-purpose knife for close quarters combat.



IASBABA

Notes

- Apart from this, the F-INSAS provides soldiers with ballistic helmets and ballistic goggles for protection against small projectiles and fragments, along with a bullet-proof vest.
- The F-INSAS also comes with hands-free, secured advanced communications set for real-time exchange of information with the command post and fellow soldiers for enhanced situational awareness.
- Conceived in the 2000s, F-INSAS is one among many soldier modernisation programmes across the world.
- The US has Land Warrior, while the UK has FIST (Future Integrated Soldier Technology).
- According to estimates, over 20 armies around the world are following such programmes.
- The DRDO had conceptualised the F-INSAS in line with the targets of the Army's Infantry Soldier Modernisation Programme with an aim to optimise the soldier's performance across the full spectrum and duration of a military operation.
- Nipun mines are indigenously designed and developed anti-personnel mines, termed by the DRDO as 'soft target blast munition'.
- These mines are meant to act as the first line of defence against infiltrators and enemy infantry.
- They have been developed with the efforts of Armament Research and Development Establishment, a Pune-based DRDO facility, and Indian industry.
- Anti-personnel mines are meant to be used against humans as against anti-tank mines that are aimed at heavy vehicles.
- They are smaller in size and can be deployed in large numbers.
- The Army has said that the mine will provide protection to the troops on the borders and is more potent and effective than the existing anti-personnel mine in its arsenal.
- The Landing Craft Assault (LCA) is meant to serve as a replacement for the boats with limited capabilities currently in use in the Pangong Tso lake.
- The LCA, which has been indigenously developed by Goa-based Aquarius ShipYard Limited, is said to have better launch, speed and capacity to operate across water obstacles in eastern Ladakh.

VINBAX 2022

- The 3rd edition of Vietnam-India Bilateral Army Exercise "Ex VINBAX 2022" is conducted at Chandimandir, Haryana from August 1 to 20, 2022.
- The theme of Ex VINBAX 2022 is the "Employment and deployment of an Engineer Company and a Medical Team as part of United Nations Contingent for Peace Keeping Operations".
- The exercise will further strengthen the bilateral relations between India and Vietnam.

**HEALTH****LANGYA VIRUS**

- A new zoonotic virus has been discovered in the China's two eastern provinces.
- This new type of Henipavirus is also being called Langya Henipavirus or the LayV.
- Henipaviruses are classified as biosafety level 4 (BSL4) pathogens.
- They can cause severe illness in animals and humans, and as of now there are no licensed drugs or vaccines meant for humans.
- The newly discovered virus is a "phylogenetically distinct Henipavirus"
- The types of Henipaviruses that had been identified prior to this included Hendra, Nipah, Cedar, Mojiang and the Ghanaian bat virus.
- According to the US CDC, the Cedar virus, Ghanaian bat virus, and Mojiang virus are not known to cause human disease.
- But Hendra and Nipah infect humans and can cause fatal illness.
- Langya, meanwhile, is known to cause fever.

SOUTHERN RICE BLACK-STREAKED DWARF VIRUS

- Weeks after a mystery disease hit the paddy crop causing "dwarfing" of the plants in Punjab and Haryana, the scientists at Punjab Agricultural University (PAU) decoded the mystery blaming it on 'Southern Rice Black-Streaked Dwarf Virus' (SRBSDV), named after Southern China where it was first reported in 2001.
- This is the first time that SRBSDV has been found in Punjab.
- The SRBSDV is transmitted by white-backed plant hopper (WBPH) in a persistent circulative and propagative manner.
- In addition to rice, SRBSDV also infects different weed species as nymphs of WBPH can transmit the virus more efficiently as compared to adults.
- Long-distance transmission of this virus may occur through WBPH migrating with the typhoons and strong convection winds.
- There was no corrective measure for the viral disease, farmers should regularly monitor the crop for the presence of WBPH.

CHRONIC FATIGUE SYNDROME

- Myalgic encephalomyelitis (ME/CFS) is another name for Chronic Fatigue Syndrome.
- It is a severe and incapacitating condition that affects the neurological system, the immune system, and the body's energy production.
- Its possible outcomes include viral or bacterial infection, hormonal abnormalities, and genetic predispositions.
- Anyone, from toddlers to people of all ages, can be affected.
- Because there is no particular test for the condition, clinicians must depend on physical examinations, blood and urine testing, and other diagnostics. ME/CFS can affect people of various ages, from toddlers to adulthood.



IASBABA

The following are some possible causes or triggers for ME/CFS:

- Viral diseases, such as glandular fever,
- bacterial infections, such as pneumonia,
- Imbalance in the immune system
- hormone imbalance
- genes - ME/CFS appears to be more frequent in some families

MONKEYPOX VACCINE

- The monkeypox virus belongs to a family of viruses called orthopoxviruses, which is different from that of the coronaviruses.
- According to the WHO, it is a viral zoonosis — a virus transmitted to humans from animals — with symptoms similar, but less severe to smallpox.
- It is also an enveloped double-stranded DNA virus, unlike the RNA virus, that makes it far more stable and less prone to rapid mutations.
- There are two distinct genetic clades of the monkeypox virus: the central African (Congo Basin) clade and the West African clade.
- The Congo Basin clade has historically caused more severe disease and was thought to be more transmissible.
- There is yet no dedicated monkeypox vaccine
- In 2019, the USFDA, approved the JYNNEOS vaccine for the prevention of smallpox, monkeypox and other diseases caused by orthopoxviruses, including vaccinia virus.
- JYNNEOS, developed by Danish biotechnology company, Bavarian Nordic, contains a live vaccinia virus that does not replicate efficiently in human cells.
- The vaccinia virus is the smallpox virus but made incapable of replicating within the body. It is administered as two injections 28 days apart. The immune response takes 14 days after the second dose.
- Orthopoxvirus is a genus of viruses in the family Poxviridae and subfamily Chordopoxvirinae.
- Vertebrates, including mammals and humans, and arthropods serve as natural hosts.
- There are 12 species in this genus. Diseases associated with this genus include smallpox, cowpox, horsepox, camelpox, and monkeypox.
- The most widely known member of the genus is Variola virus, which causes smallpox.
- It was eradicated globally by 1977, through the use of Vaccinia virus as a vaccine.
- The most recently described species is the Alaskapox virus, first isolated in 2015.

LUMPI PRO-VAC

- Recently, the Agriculture and Farmers Welfare Minister launched the indigenous vaccine Lumpi-ProVac.
- It is an indigenous vaccine to protect livestock from Lumpy Skin disease.
- Developed by: National Research Centre on Equines, Haryana in collaboration with the Indian Veterinary Research Institute, Bareilly.
- Lumpy skin disease is an infectious viral disease of cattle.
 - It often occurs in epizootic form.

[Notes](#)



IASBABA

- It is characterized by the eruption of nodules in the skin, which may cover the whole of the animal's body.

INDICES AND REPORTS

WORLD POPULATION PROSPECTS 2022

- Recently, the 27th edition of the World Population Prospects, 2022 was released by the United Nations Department of Economic and Social Affairs, Population Division.
- India is projected to surpass China as the world's most populous country in 2023.
- In 2022, China remains the most populous country in the world with 1,426 million, but India has caught up with a marginally less population of 1,412 million.
- The population of China was 1,144 million in 1990 compared with India's at 861 million then.
- The UN projections say that by 2050, India's population will reach 1,668 million, far exceeding China's declining population at 1,317 million.
- The global population will reach 8 billion on November 15, 2022, more than three times the population of 2.5 billion in 1950.
- The UN projections suggest that the global population could grow to around 8.5 billion in 2030, 9.7 billion in 2050, and 10.4 billion in 2100.

INDIA WIND ENERGY MARKET OUTLOOK 2026

- The Global Wind Energy Council (GWEC) and MEC Intelligence (MEC+) have today launched "Renewing wind growth to power the energy transition: India Wind Energy Market Outlook 2026".
- This third annual edition looking at the wind energy outlook in India highlights wind energy's critical link to India's green energy transition.
- The outlook suggests that the country can add another 23.7 GW of capacity within the next five years provided necessary enabling policies, facilitative instruments, and the right institutional interventions are put in place.

[Notes](#)



ART AND CULTURE

LACHIT BORPHUKAN

- Recently, the Assam Chief Minister launched an event to mark the 400th anniversary of Lachit Borphukan, a celebrated general of the Ahom dynasty.
- Lachit Borphukan was a legendary army commander of the Ahom kingdom.
- He is known for his leadership in the 1671 'Battle of Saraighat' on the Brahmaputra against Mughal forces where he defeated the Mughal army.
- Earlier, The Battle of Alaboi was fought on August 5, 1669, between the Ahoms and Mughals where Mughals had won.

About Ahom kingdom (1228-1826)

- It was a late medieval kingdom in the Brahmaputra Valley in Assam.
- The kingdom is well known for maintaining its sovereignty for nearly 600 years and successfully resisting Mughal expansion in Northeast India.
- It was established by Sukaphaa, a Tai prince from Mong Mao

PANDURANG KHANKHOJE

- He was born in Wardha, Maharashtra. As a student, Khankhoje was an ardent admirer of the French Revolution and of the American War of Independence
- The Hindu reformer Swami Dayanand and his Arya Samaj movement, which called for a spirit of reform and social change, became the hero to a young student group led by Khankhoje.
- He was inspired by Bala Gangadhara Tilak.
- After spending time with nationalists from Japan and China, Khankhoje eventually moved to Mount Tamalpais Military Academy in California as a student of agriculture.
- Khankhoje was one of the founding members of the Ghadar Party, established by Indians living abroad in 1914, mostly belonging to Punjab.
- While in the US, Khankhoje met Lala Har Dayal, an Indian intellectual teaching at Stanford University.
- "Har Dayal had begun a propaganda campaign, publishing a newspaper that featured patriotic songs and articles in the vernacular languages of India. This was the seed from which the Ghadar Party would emerge.
- The Mexican Revolution of 1910 had led to the overthrow of the dictatorial regime, and this inspired Khankhoje.
- Along with the Indian workers, militant action was planned by Khankhoje in India, but the outbreak of the First World War halted these plans.
- He then reached out to Bhikaji Cama in Paris, and met with Vladimir Lenin in Russia among other leaders, seeking support for the Indian cause.
- However, as he was facing possible deportation from Europe and could not go to India, he sought shelter in Mexico.



IASBABA

Notes

- He was appointed a professor at the National School of Agriculture in Chapingo, near Mexico City.
- He researched corn, wheat, pulses, and rubber, developing frost and drought-resistant varieties, and was part of efforts to bring in the Green Revolution in Mexico.

MANDALA ART

- Literally meaning “circle” or “centre” in Sanskrit, mandala is defined by a geometric configuration that usually incorporates the circular shape in some form.
- It is believed to be rooted in Buddhism, appearing in the first century BC in India.
- In Hinduism, the mandala imagery first appeared in Rig Veda (1500 – 500 BCE).
- It is believed that by entering the mandala and moving towards its centre, one is guided through the cosmic process of transforming the universe from one of suffering to that of joy.
- The eight spokes of the wheel (the dharma chakra) represent the eightfold path of Buddhism (practices that lead to liberation from rebirth), the lotus flower depicts balance, and the sun represents the universe.
- In Hinduism, a mandala or yantra is in the shape of a square with a circle at its centre.
- While it continues to appear in thangka paintings, it has a central place in the practice of mainstream artists associated with the tantric and neo-tantric spiritual movements.
- In 1960s Sohan Qadri and Prafulla Mohanty gained widespread recognition for their works that were imbued with tantric symbolism, such as mandalas that are also used in the rituals of tantric initiation.
- Geometric compositions also dominated works of artists such as Biren De, GR Santosh, Shobha Broota, and famously SH Raza, who visualised the Bindu as the centre of his universe and the source of energy and life.

HYDERABAD LAC BANGLES

- Hyderabad-based Crescent Handicraft Artisans Welfare Association has filed an application for securing a Geographical Indications tag for lac bangles that are manufactured in the city.
- The Geographical Indications Registry, Chennai has accepted the application and the coveted tag may add to the lustre of the bangles which is a favourite of tourists and are part of the trousseau for brides from the city.
- The lac bangles can be seen in the shops that line the Laad Bazaar area near Charminar shimmering with mirror work and encrusted precious stones.
- They are handcrafted in the homes by an army of workers who use molten lac and shape them into bangles and turn them into speckled shimmering wonders.
- GI Tags of Telangana: Pochampally Ikat, Silver Filigree of Karimnagar, Nirmal Toys and Craft, Nirmal Furniture, Nirmal Paintings, Gadwal Sarees, Hyderabad Haleem, Cheriya Paintings, Siddipet Gollabhama, Narayanpet Handloom Sarees, Pochampally Ikat (Logo), Adilabad Dokra, Warangal Durries and Telia Rumaal.



MITHILA MAKHANA

- The government has awarded Geographical Indication (GI) tag to Mithila Makhana, a move which is expected to help growers get the maximum price for their premium produce.
- Mithila Makhana or Makhan is a special variety of aquatic fox nut cultivated in Mithila region of Bihar and Nepal.

ARANMULA KANNADI

- Aranmula Kannadi literally means the mirror of Aranmula, a small town in Pathanamthitta district, Kerala.
- It was the first craft item from the state to receive a geographical indication tag in 2005.
- These special and rare mirrors are created by a handful of highly skilled traditional artisan families belonging to the town's Vishwakarma community.
- The alloy formula they use is a secret passed down through generations.
- Made on demand, every piece, irrespective of its size, takes significant time and effort to finish.
- The uniqueness of this mirror is its front reflection, unlike the back reflection in normal glass mirrors. This means the reflective surface is placed on a back support, as opposed to regular mirrors where the reflective surface is behind glass.
- These mirrors also have a cultural significance in Kerala: It is regarded as one of the eight auspicious objects (ashtamangalya) displayed during religious festivals or auspicious occasions and ceremonies.
- It is believed to bring prosperity, luck and wealth into the life of its custodian.

ADICHANALLUR

- Recently, Archeological Survey of India unearthed a gold diadem from a huge burial urn.
- In the first trench, they found objects in bronze and gold similar to the 14 gold diadems discovered by Alexander Rea.
- Gold was an inland source from the region located north of the present northern borders of Tamil Nadu.
- Several gold workings are reported from the neighbourhood of the Hutti gold mines, the present Raichur district of Karnataka.
- Some of them have been dated to about 3,000 years ago.
- Sanganakallu, a Neolithic and Megalithic site near Bellary in Karnataka, has yielded gold foils but in small quantities and not from a burial context like at Adichanallur.

BRONZE IDOLS

- The Idol Wing-CID has traced two Chola-era bronze idols that were stolen about 50 years ago from the Vishwanatha Swamy Temple at Alathur in Tiruvarur district and smuggled to the United States.
- Three antique metal idols — Vishnu, Sridevi and Bhudevi belonging to the Vishwanatha Swamy Temple — had been burgled.



IASBABA

- The Idol Wing traced the idols of Yoganarasimha and Ganesha, Somaskandar idol and the Dancing Sambandar idol.

Indian Bronze Sculptures:

- The process of making alloy of metals by mixing copper, zinc and tin is called bronze.
- The 'Dancing Girl' from Mohenjodaro is the earliest bronze sculpture datable to 2500 BCE.
- At Daimabad (Maharashtra) datable to 1500 BCE, bronze 'Chariot' has been discovered.
- They are cast through cire-perdu or 'lost-wax' process.
- First a wax model of the image is made by hand of pure beeswax
- It is then pressed through a pichki or pharni — which squeezes the wax into noodle-like shape.
- These wax wires are then wound around to the shape of the entire image. The image is now covered with a thick coating of paste, made of equal parts of clay, sand and cow-dung.
- Into an opening on one side, a clay pot is fixed. In this molten metal is poured.
- While the molten metal is poured in the clay pot, the clay-plastered model is exposed to firing. As the wax inside melts, the metal flows down the channel and takes on the shape of the wax image.
- The image is later chiselled with files to smoothen it and give it a finish.
- Sometimes an alloy of five metals — gold, silver, copper, brass and lead — is used to cast bronze images.

BARA IMAMBARA

- The Supreme Court sought reports from Maharashtra administration on the demolition drive conducted around the tomb of Afzal Khan, a 17th-century commander of the Adil Shahi dynasty of Bijapur.
- Afzal Khan was a general who served the Adil Shahi dynasty of Bijapur Sultanate.
- He played an important role in the southern expansion of the Bijapur Sultanate by subjugating the Nayaka chiefs who had taken control of the former Vijayanagara territory.
- In 1659, the Bijapur government sent Afzal Khan to subjugate Chatrapati Shivaji Maharaj, a former vassal who had started acting independently.
- He was killed at a truce negotiation meeting with Chatrapati Shivaji Maharaj, and his army was defeated at the Battle of Pratapgad.'

History of Afzal Khan's tomb:

- With Shivaji's rise and increasing control of the region, Afzal Khan was seen as the man to subdue him in the Deccan.
- Khan put together a force of 10,000 cavalry and marched from Bijapur to Wai, plundering Shivaji's territory along the way.

[Notes](#)



IASBABA

Notes

- Shivaji called a council of war at the fort of Pratapgarh, where most of his advisers urged him to make peace.
- Shivaji was not eager to back down and he set up a meeting with Khan.
- Afzal Khan was killed on November 10, 1659 when during a meeting, an embrace between the two turned into an attack in which Shivaji emerged victorious.
- Khan's remains were buried at the fort and a tomb was constructed on Shivaji's orders.
- The tower is still known by the name 'Afzul Buruj' at Pratapgarh.

SHRIMAD RAJCHANDRA MISSION

- The Prime Minister of India inaugurated and laid the foundation stone of various projects of the Shrimad Rajchandra Mission worth more than 300 crore rupees at Dharampur in Gujarat.
- Shrimad Rajchandra Mission Dharampur is a spiritual movement for inner transformation through wisdom, meditation and selfless service.
- Founded by Pujya Gurudevshri Rakeshji, the organisation works through 196 centres in five continents.

SHRIMAD RAJCHANDRAJI

- He was a self-realised saint, a reformer of Jainism, and a remarkable poet-philosopher of the late 19th century.
- He gave the world a rich heritage that guides generations of seekers.
- He was a visionary who laid the foundations of spirituality for a new era.
- Honoured as Yugpurush, He gave the world a rich heritage that continues to guide generations of seekers, in a short span of 34 years.
- His life and works are an invitation to turn within and discover the eternal truths.

MISCELLANEOUS

MALVINAS ISLAND



- India reiterates support to Argentina for resumption of talks on the Malvinas issue.
- Falkland Islands, also called Malvinas Islands or Spanish Islas Malvinas, internally self-governing overseas territory of the United Kingdom in the South Atlantic Ocean.
- It lies about 300 miles northeast of the southern tip of South America and a similar distance east of the Strait of Magellan.



IASBABA

Notes

- The capital and major town is Stanley, on East Falkland, there are also several scattered small settlements as well as a Royal Air Force base that is located at Mount Pleasant.

History of the Falkland Islands

- In 1820 the Argentina Government, which had declared its independence from Spain in 1816, proclaimed its sovereignty over the Falklands.
- In early 1833, a British force expelled the few remaining Argentine officials from the island without firing a shot. In 1841, a British civilian lieutenant governor was appointed for the Falklands, and by 1885 a British community of some 1,800 people on the islands was self-supporting.
- Argentina regularly protested Britain's occupation of the islands.
- After World War II (1939-45) the issue of sovereignty over the Falkland Islands shifted to the United Nations (UN) when, in 1964, the islands' status was debated by the UN committee on decolonization.
- In 1965, the UN General Assembly approved a resolution inviting Britain and Argentina to hold discussions to find a peaceful solution to the dispute.
- These protracted discussions were still proceeding in February 1982, but in April Argentina's military government invaded the Falklands.
- This act started the Falkland Islands War, which ended 10 weeks later with the surrender of the Argentine forces at Stanley to British troops who had forcibly reoccupied the islands.
- Although Britain and Argentina reestablished full diplomatic relations in 1990, the issue of sovereignty remained a point of contention.
- In the early 21st century Britain continued to maintain some 2,000 troops on the islands.
- In a referendum held in March 2013, islanders voted nearly unanimously to remain a British overseas territory.

SOMALIA



- The Hayat, a popular spot in Mogadishu where several other hotels are located and frequented by government officials and civilians has come under the attack.
- The assault in the Somali capital came after two car bomb blasts and gunfire.
- The Al-Qaeda-linked Al-Shabab armed group claimed responsibility for the attack.



TAIWAN



- Taiwan is an island territory across the Taiwan Strait, located off the coast of mainland China.
- The ruling Kuomintang (Nationalist) government of China fled to Taiwan after being defeated by the communist forces in the Chinese civil war of 1945-1949.
- Following the split of China and Taiwan in the civil war, the Republic of China (ROC) government was relocated to Taiwan. On the other hand, the Communist Party of China (CPC) established the People's Republic of China (PRC) in the

The Economist
mainland.

- Since then, the PRC observes Taiwan as a traitor province and awaits reintegration with Taiwan, if possible, by peaceful means.
- PRC allied itself with the Union of Soviet Socialist Republics (USSR) and ROC with the US in the cold war further straining the China-Taiwan relations.
- Currently, only 13 countries recognise Taiwan as a sovereign country.

TAIWAN STRAIT

- The Taiwan Strait, also known as the Formosa Strait, is a 180 km wide strait separating Taiwan and mainland China.
- The strait is currently part of the South China Sea and connects to the East China Sea to the north. The narrowest part is 130 km wide.
- The entire strait is on Asia's continental shelf.
- Historically both the People's Republic of China (PRC) and Taiwan espoused a One-China Policy that considered the strait part of the exclusive economic zone of a single "China".

YELLOW SEA



- The Yellow Sea is a marginal sea of the Western Pacific Ocean located between mainland China and the Korean Peninsula, and can be considered the northwestern part of the East China Sea.



IASBABA

- Its name is descriptive of the golden-yellow colour of the silt-laden water discharged from major rivers.

BOHAI SEA

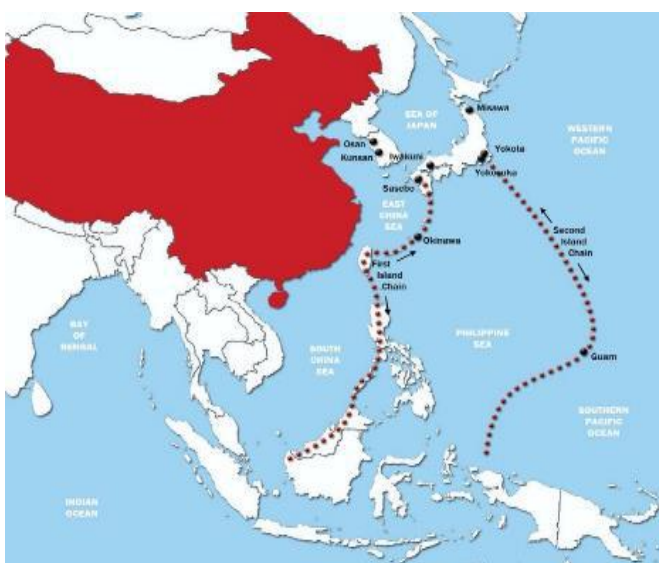


- The innermost bay of north western Yellow Sea is called the Bohai Sea into which flow some of the most important rivers of northern China, such as the Yellow River, the Hai River and the Liao River.
- The Northeastern extension of the Yellow Sea is called the Korea Bay, into which flow the Yalu River, the Chongchon River and the Taedong River.

GIRMITIYA COUNTRIES

- Girmityas, also known as Jahajis, were indentured laborers from British India transported to work on plantations in Fiji, Mauritius, South Africa, and the Caribbean (mostly Trinidad and Tobago, Guyana, and Suriname) as part of the Indian indenture system.
- The term Girmitya was coined by the father of the nation, Mahatma Gandhi who referred to himself as first Girmitya. The countries where these indentured Indian labourers settled are known as Girmitya countries.

FIRST ISLAND CHAIN



- The First Island Chain comprises the Kuril Islands, the Japanese Archipelago, Ryukyu Islands, Taiwan, northwest Philippines and ending at Borneo.
- The First Island Chain was conceptualized during the Cold War as the first line of defense to contain the spread of influence of the Soviet Union and its allied socialist countries in East and Southeast Asia. The midpoint and key part of the first chain was – and still is – Taiwan.

[Notes](#)



IASBABA

FUNCTIONALLY LITERATE DISTRICT

- Madhya Pradesh's tribal-dominated Mandla region has become the first fully "functionally literate" district in the country.
- Another report of 2020 highlights that, more than 2.25 lakh people in this district were not literate, most of them were tribals from forest areas.
- Tribals frequently complained to the authorities about money being taken from their bank accounts by fraudsters and the root cause of this was that they were not functionally literate.

[Notes](#)