

The background of the cover is a close-up photograph of a stack of several books. The books have various colored spines, including red, green, and brown. The pages are yellowed with age. A large, white, starburst-shaped graphic is overlaid on the right side of the image, containing text. The overall design is modern and academic.

# December 2020

M A G A Z I N E

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**Special: Quick  
revision  
(True/False)**

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# Economy

## 1. Honey FPO Programme: NAFED

### Why in News?

- Recently, the Honey Farmer Producer Organisation (FPO) Programme of the National Agricultural Cooperative Marketing Federation of India Limited (NAFED) was virtually inaugurated.

### About

- The programme has been launched under the **Formation and Promotion of FPOs**.
- It is a new **Central Sector Scheme** for the **promotion of 10,000 new FPOs**.
- Under it, the National Level Project Management Advisory and Fund Sanctioning Committee (**N-PMAFSC**) had **allocated FPO clusters** for 2020-21 to all implementing agencies.
- FPOs will be developed by **specialist Cluster Based Business Organizations** (CBBOs) **engaged** by implementing agencies.
- NAFED has **initiated** the formation and promotion of FPOs of **beekeepers and honey collectors** in **5 states** of India.
- 5 locations: East Champaran (**Bihar**), Morena (**Madhya Pradesh**), Bharatpur (**Rajasthan**), Mathura (**Uttar Pradesh**) and Sunderbans (**West Bengal**).
- The **first Honey FPO** has been registered in the **state of Madhya Pradesh**.
- Benefits →
  - Skill Upgradation** in scientific beekeeping;
  - State of the art infrastructural facilities** for processing honey and allied beekeeping products;
  - Quality upgradation** by quality control laboratories;
  - Better supply chain management**

### 📌 National Agricultural Cooperative Marketing Federation of India Ltd (NAFED)

- It is an **apex organization** of marketing cooperatives for agricultural produce in India.
- Founded on → **2nd October 1958**.
- Registered under → the **Multi-State Co-operative Societies Act, 2002**.
- NAFED is now one of the **largest procurement** as well as **marketing agencies** for agricultural products in India.
- Objectives → (1) To **organize, promote and develop marketing**, processing and storage of agricultural, horticultural and forest produce; (2) To **distribute agricultural machinery**, implements and other inputs; (3) **To act and assist for technical advice** in agricultural production

## 2. Minimum Support Price

### Why in News?

- The major demand of the protesting farmers has been that the government guarantee in writing the MSP system, which assures them of a fixed price for their crops, 1.5 times of the cost of production.

### About MSP

- It is the **minimum price paid to the farmers** for procuring food crops.
- It is announced by the Government at the **beginning of the sowing season**.

#### How was the MSP fixed earlier?

- The **Commission for Agricultural Costs & Prices** (CACP) would recommend MSPs for 23 crops by taking into account the supply and demand situation for the commodity; market price trends and implications for consumers (inflation), environment and terms of trade between agriculture and non-agriculture sectors.

#### What changed with the Union Budget for 2018-19?

- The Budget for 2018-19 announced that MSPs will be **fixed at 1.5 times** of the **production costs** for crops as a predetermined principle.
- Simply put, the CACP's job now is **only to estimate production costs** for a season and **recommend the MSPs** by applying the 1.5-times formula.

#### Which production costs were taken in fixing the MSPs?

- CACP considers **both A2+FL and C2 costs** while recommending MSP. However, C2 costs are used by CACP primarily as **benchmark reference costs** (opportunity costs) to see if the MSPs recommended by them at least cover these costs in some of the major producing States.
  - A2 → It covers **all paid-out costs directly incurred by the farmer** — in cash and kind — on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc.
  - 'A2+FL' → It **includes A2 plus** an **imputed value of unpaid family labour**.
  - 'C2' → It is a **more comprehensive cost** that factors in rentals and interest forgone on **owned land** and **fixed capital assets** on top of A2+FL.

#### 📁 Commission for Agricultural Costs and Prices (CACP):

- It is an attached office of the **Ministry of Agriculture and Farmers Welfare**.
- Formed → **1 January 1965**
- It is not a **statutory body** set up through an Act of Parliament.

### 3. World Trade Report

#### Why in News?

- World Trade Organization(WTO) has released the report titled 'World Trade Report 2020: Government Policies to Promote Innovation in the Digital Age'.

#### About

- What is it? → It is an **annual report** published since **2003** by the **World Trade Organization** to deepen understanding about trends in trade, trade policy issues, and the multilateral trading system (MTS).
- The 2020 World Trade Report looks at the **role of innovation and technology policies** in an **increasingly digitized world economy** and explains the role of the WTO in this changing context.

#### 📁 Key Takeaways:

- Uptake of Digital Innovation → The report observes that the **COVID-19 pandemic** has accelerated the **uptake of digital innovation** and **e-commerce** and **led countries** to strengthen policies aimed at boosting growth through innovation and technological upgrading.
- Transition to Digital Economy → The **report warns the transition towards digital economy** can have positive spillovers and negative spillovers.
- Positive spillovers → **generating growth, creating new markets** and encouraging technology diffusion.
- Negative spillovers → **distorting trade, diverting investment** or **promoting unfair competition** with the winner-takes-all characteristics of certain digital industries.

## 4. Energy Efficiency Report 2020

### Why in News?

- International Energy Agency (IEA) has released the annual Energy Efficiency Report 2020.

### About Key Takeaways

- The **slow pace of global progress** on **energy efficiency** is set to slow further in 2020 as a result of the economic impacts of the COVID-19 crisis.
- **Global primary energy intensity** – a key indicator of how efficiently the world's economic activity uses energy – is expected to **improve by less than 1% in 2020**, the **weakest rate since 2010**.
- **Investments** in energy-efficient buildings, equipment and vehicles are also expected to **decline by 9% in 2020**.
- Shifts in **urban transport from public transport to cars** were **also witnessed** due to pandemic as people remained fearful of infection risk.

### 📌 International Energy Agency

- The International Energy Agency (IEA) is an **autonomous intergovernmental organisation** which works to ensure reliable, affordable and clean energy.
- Established → It was established in the wake of 1973 (**set up in 1974**) oil crisis after the OPEC cartel had shocked the world with a steep increase in oil prices.
- Headquarters → **Paris, France**.
- Members → It has **30 member** countries and eight association countries. **India** became an **associate member in 2017**.
- Other Report → **World Energy Outlook** report is released by IEA annually.

## 5. Investment Promotion Award

### Why in News?

- United Nations Conference on Trade and Development (UNCTAD) has declared Invest India as the winner of the United Nations Investment Promotion Award.

### About

- The Award **recognizes** and **celebrates** the outstanding achievements of the **World's best-practice investment promotion agencies**.

- The evaluation was based on UNCTAD's assessment of work undertaken by **180 national Investment Promotion Agencies** (IPAs) across the world.
- IPAs **response to the pandemic** became the **basis for the evaluation** of the 2020 United Nations Investment Promotion Award.
- **Germany, South Korea and Singapore** have been some of the past winners of the award.

#### 👉 **Invest India:**

- It was set up in **2009** as a **non-profit venture** under the Department for Promotion of Industry and Internal Trade, **Ministry of Commerce and Industry**.
- It is the **National Investment Promotion and Facilitation Agency of India** and acts as the first point of reference for investors in India.

#### 👉 **Business Immunity Platform:**

- It was launched **by Invest India** to provide a **comprehensive resource to help businesses** and **investors get real-time updates** on India's active response to COVID-19 (Coronavirus).

#### 👉 **United Nations Conference on Trade and Development**

- UNCTAD is a **permanent intergovernmental body** established by the United Nations General Assembly in **1964**.
- Headquarters → **Geneva, Switzerland**.
- Purpose → It was established to promote **development-friendly integration** of **developing countries** into the world economy.
- It is a **central agency** that **monitors performance** of Investment promotion Agencies (IPAs) and identifies global best practices.
- Some of the reports published by it are →
  - Trade and Development Report
  - World Investment Report
  - Global Investment Trend Monitor Report
  - The Least Developed Countries Report
  - Information and Economy Report
  - Technology and Innovation Report
  - Commodities and Development Report.

## 6. PM WANI Scheme

### Why in News?

- Union Cabinet has approved a public Wi-Fi access network called PM-WANI (Wi-Fi Access Network Interface).

### About

- Aim → To enable **easily accessible public Wi-Fi hotspots** spread across the country.
- It was **first** recommended by the **Telecom Regulatory Authority of India** (TRAI) in **2017**.
- Implementation → PM-WANI will be operated by **different players** as described herein under:



- Public Data Office(PDO) → It will **establish, maintain** and **operate only WANI compliant** Wi-Fi Access Points and deliver broadband services to subscribers.
- Public Data Office Aggregator(PDOA) → It will be an **aggregator of PDOs** and perform the **functions relating to Authorization** and **Accounting**.
- App Provider → It will **develop** an **App to register users** and **discover WANI compliant** Wi-Fi hotspots in the nearby area and display the same within the App for accessing the internet service.
- Central Registry → It will maintain the **details of App Providers, PDOAs** and **PDOs**. To begin with, the Central Registry will be maintained by Centre for Development of Telematic (C-DOT).
- Other Features → There would be **no licence fee** for providing broadband internet through these public Wi-Fi networks.
- Significance of the project → Public Wi-Fi networks will '**democratize**' **content distribution** and **broadband access to millions at affordable rates**. This will be the UPI (unified payments interface) of connectivity services.

## 7. Lakshadweep to get optical fibre cable

### Why in News?

- The Union Cabinet has approved laying of undersea optical fibre cable to connect 11 islands of Lakshadweep with Kochi by May 2023.

### About

- Objective → The Project envisages provision of a **direct communication link** through a dedicated **submarine Optical Fibre Cable** (OFC) between **Kochi and 11 Islands** of Lakshadweep viz. Kavaratti, Kalpeni, Agati, Amini, Androth, Minicoy, Bangaram, Bitra, Chetlat, Kiltan and Kadmat.
- Funding → The project would be funded by **Universal Service Obligation Fund(USOF)**.
- Implementation → **Bharat Sanchar Nigam Ltd.** (BSNL) has been **nominated** as Project Execution Agency and Telecommunications Consultant India Ltd. (TCIL) as the Technical Consultant of the Project.
- Target → The project is targeted to be **completed by May 2023**.

### 📌 Submarine Communications cable?

- It is a cable **laid on the sea bed** between land-based stations to **carry telecommunication signals** across **stretches of ocean and sea**.
- The optical fiber elements are typically individually **coated with plastic layers** and contained in a **protective tube suitable** for the environment where the cable will be deployed.
- Importance of submarine cables:
- Currently **99 per cent** of the **data traffic** that is crossing oceans is carried by undersea cables.
- The **reliability of submarine cables** is **high**, especially when multiple paths are available in the event of a cable break.
- The total carrying capacity of submarine cables is in the **terabits per second**, while **satellites** typically **offer only 1,000 megabits per second** and **display higher latency**.

### 📌 Universal Service Obligation Fund (USOF)

- It was set up in 2002 and was given **statutory status** under the **Indian Telegraph (Amendment) Act, 2003**.

- Objective → Enabling **rural Indians** to **achieve their fullest potential** and **participate productively in the development** of the nation by virtue of being effectively connected through a reliable and ubiquitous telecommunications network.

## 8. Draft Indian Ports Bill, 2020

### Why in News?

- Ministry of Ports, Shipping and Waterways has circulated draft of Indian Ports Bill 2020 for public consultation which will repeal and replace the Indian Ports Act, 1908.

### About

- Constitution of **Maritime Port Regulatory Authority** to regulate state maritime board and scheduled ports.
- Maritime Ports Tribunal** and **Maritime Ports Appellate Tribunal** to curb anti-competitive practises in the port sector and act as a speedy and affordable grievance redressal mechanism.
- Formulation of the **National Port policy** and **National Port plan** in consultation with Coastal State Governments, State Maritime Boards and other stakeholders.
- Incorporating all up-to-date conventions/ protocols to which India is a party** which help to ensure safety, security, pollution control, performance standards and sustainability of ports.



## 9. India Workplace Equality Index

### Why in News?

- India's 1st LGBT+ workplace equality index has been launched.

### About

- It is the country's **first comprehensive benchmarking tool for employers** to measure their progress on LGBT+ inclusion at the workplace.
- Launched by → It was launched by **non-profit Keshav Suri Foundation**, partnered with Pride Circle, Stonewall UK and FICCI.
- Parameters → The index **measures nine areas**: policies and benefits, employee lifecycle, employee network group, allies and role models, senior leadership, monitoring, procurement, community engagement and additional work.
- Winners → **Twenty-one firms won under the gold category** while **18 were placed under silver** and **13 got bronze**.

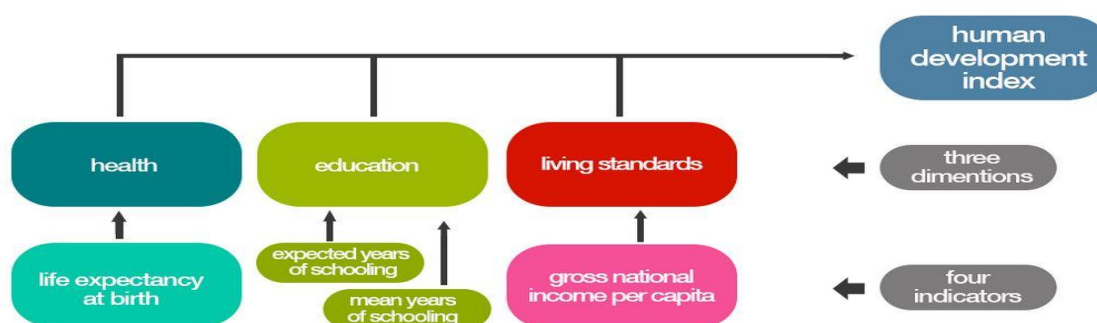
## 10. Human Development Index

### Why in News?

- India dropped two ranks in the United Nations' Human Development Index this year, standing at 131 out of 189 countries.

## About HDI

- Released by → **United Nations Development Programme (UNDP)**.
- HDI is a statistical tool used to **measure a country's overall achievement** in its **social and economic dimensions**.
- Every year UNDP **rank countries based on the HDI report** released in their **annual report**.
- It is one of the **best tools** to keep **track of the level of development** of a country, as it combines all major social and economic indicators that are responsible for economic development.
- History → Pakistani economist **Mahbub-ul-Haq** created HDI in **1990** which was further used to **measure the country's development** by the United Nations Development Program (UNDP).
- Various indicators under HDI → Calculation of the index combines four major indicators:
  - life expectancy for health**,
  - expected years of schooling**,
  - mean of years of schooling for education** and
  - GNI per capita for the standard of living**.



### 👉 For the first time: PHDI

- For the first time, the United Nations Development Programme introduced a **new metric** to **reflect the impact caused by each country's per-capita carbon emissions** and **its material footprint**, which measures the amount of fossil fuels, metals and other resources used to make the goods and services it consumes.
- This metric is called- the **Planetary Pressures-adjusted HDI**, or **PHDI**.

### 👉 India's performance:

- India **dropped two ranks**, standing at **131** out of 189 countries.
- If the Index were adjusted to **assess the planetary pressures** caused by each nation's development, India would **move up eight places** in the **ranking**, according to the report.

## 11. Scheme for approval of Hygiene Rating Audit Agencies

### Why in News?

- Quality Council of India (QCI) at the behest of the Food Safety and Standards Authority of India(FSSAI) has launched a "Scheme for approval of Hygiene Rating Audit Agencies".

### About

- Objective → To **scale up Hygiene Rating** by increasing the number of recognised Hygiene Rating Audit Agencies in the country.
- The recognised Hygiene Rating Audit Agency will **verify the compliance by the FBOs** with food hygiene and safety procedures laid by **FSSAI**.

#### 👉 Food Hygiene Rating Scheme:

- It is a **certification system by FSSAI** for food businesses supplying food directly to consumers, either on or off premise.
- The food establishments are **rated based on food hygiene and safety conditions** observed at the time of audit.
- The hygiene rating will be in the **form of smileys** (1 up to 5) and the certificate should be displayed prominently in the consumer facing area.
- Aim: To allow consumers to **make informed choices** pertaining to the **food outlets** where they eat by encouraging food businesses to improve their hygiene and safety standards.

#### 👉 Quality Council of India (QCI)

- Set up → **1997**.
- Established jointly by → The **Government of India** and the Indian Industry represented by the **three premier industry associations** i.e. Associated Chambers of Commerce and Industry of India (**ASSOCHAM**), Confederation of Indian Industry (**CII**) and Federation of Indian Chambers of Commerce and Industry (**FICCI**)
- Ministry → The **Department of Industrial Policy & Promotion**, Ministry of Commerce & Industry.
- Objective → To establish and operate **national accreditation structure** and **promote quality** through National Quality Campaign.

#### 👉 FSSAI

- It is a **statutory, autonomous body** established under the **Ministry of Health & Family Welfare**.
- It is responsible for **protecting and promoting public health** through the regulation and supervision of food safety.

## 12. Currency Manipulation

### Why in News?

- The US included India in its monitoring list of countries with potentially “questionable foreign exchange policies” and “currency manipulation”.

### About

- Currency manipulator is a **label given by the US government** to countries it feels are engaging in “**unfair currency practices**” by deliberately devaluing their currency against the dollar.
- Designation of a country as a currency manipulator does **not immediately attract any penalties**, but tends to **dent the confidence** about a country in the global financial markets.
- Criteria: To be labeled a manipulator by the U.S. Treasury, countries must
  - At least have a **\$20 billion-plus bilateral trade surplus** with the U.S.

- Foreign **currency intervention exceeding 2%** of gross domestic product and
- Global current account surplus **exceeding 2%** of GDP.
- India, which has for several years maintained a “significant” bilateral goods trade surplus with the US, recently **crossed the \$20 billion mark**.
- Also India pushed net purchases of foreign exchange **to \$64 billion**—or **2.4% of GDP**—over the four quarters through June 2020.

### 13. E20 Fuel

#### Why in News?

- Ministry of Road Transport and Highways has published a notification seeking comments from the public for adoption of E20 fuel to promote green fuel like ethanol.

#### About

- What is it? → It means **blending 20% of ethanol with gasoline** as an automotive fuel.
- The **current** permissible level of **blending is 10% of ethanol**, though India reached only 5.6% of blending in 2019.
- Significance →
  - It will help in **reducing emissions** of carbon dioxide, hydrocarbons, etc.
  - It will help **reduce the oil import bill**, thereby saving foreign exchange and boosting energy security.
- Compatibility of Vehicles → As per the government, the compatibility of the vehicle to the percentage of ethanol in the blend of ethanol and gasoline shall be **defined by the vehicle manufacturer** and **the same shall be displayed** on the **vehicle by putting a clearly visible sticker**.
- Ethanol →
  - Ethanol having **chemical formula** of **C<sub>2</sub>H<sub>5</sub>OH** can be **produced from crops** like sugarcane, maize, wheat which have high starch content.
  - In India, ethanol is **mainly produced from sugarcane molasses** by the **fermentation process**. Hence, since ethanol is produced from plants that harness the power of the sun, ethanol is also considered as green fuel.

### 14. NERPSIP Scheme

#### Why in News?

- The Union Cabinet has approved the Revised Cost Estimate (RCE) of North Eastern Region Power System Improvement Project (NERPSIP) at an estimated cost of Rs. 6,700 crore.

#### About

- What is it? → The north eastern region power system improvement project (NERPSIP) is a **central scheme** under the **Ministry of Power**. It was **started in 2014**.
- Implementation → The scheme is being implemented through **Power Grid Corporation of India Limited (POWERGRID)**.
- Objective → Government's commitment for the total **economic development of the North Eastern Region** and to **strengthen the Intra-State Transmission & Distribution Infrastructure** in the North East Region.



- Funding → The scheme is being funded with the **assistance of the World Bank fund** and by the **Government of India** through the Budget support of the Ministry of Power on a **50:50 basis**.
- Beneficiary states → **Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura**.
- The scheme is **targeted** to be commissioned by **December 2021**.

## 15. Positive Pay Mechanism

### Why in News?

- From January 1, 2021, the Reserve Bank of India (RBI) will introduce the 'Positive Pay System' for cheque transactions above Rs 50,000 in a bid to enhance safety and eliminate frauds.

### About

- Positive Pay is a **fraud detection tool** adopted by banks to **protect customers against forged, altered or counterfeit cheques**.
- It **cross verifies all details** of the issued cheque before funds are encashed by the beneficiary.
- Process →
  - Under this, the issuer of the cheque **submits electronically through channels like SMS**, mobile app and Internet banking, certain minimum details of cheque to the drawee bank, details of which are **cross-checked** with the presented cheque by **Cheque Truncation System (CTS)**.
  - Any **discrepancy** is **flagged by CTS** to the drawee bank and presenting bank who then **take redressal measures**.
- Cheque Limits → It ensures that every **high-value cheque valued at Rs 50,000 and above** is crossed checked with details provided by the issuing party or the individual.
- This will cover approximately **20 per cent of transactions by volume** and **80 per cent by value**.
- Developed by → **National Payments Corporation of India (NPCI)** will develop the facility of Positive Pay in CTS and make it available to participant banks.

## 16. 100% FDI in DTH services

### Why in News?

- Union Cabinet has approved revised guidelines for Direct-to-Home (DTH) broadcasting services.

### About Revised guidelines for DTH Services

- It allowed **100% Foreign direct Investment (FDI)** in the direct-to-home (**DTH**) broadcasting services sector. Currently, FDI was limited to 49%.
- **License** for the DTH will be issued for a **period of 20 years** in place of present 10 years. Further the period of License may be **renewed by 10 years at a time**.
- License fee has been **revised from 10% of GR** (gross revenue) **to 8% of AGR** (adjusted gross revenue). License fee will be collected on a **quarterly basis** against the current annual basis.
- **Sharing of Infrastructure** between **DTH operators**. DTH operators, willing to share DTH platforms and transport streams of TV channels on a **voluntary basis** will be allowed.

## 17. Electricity (Rights of Consumers) Rules, 2020

### Why in News?

- The Ministry of Power has for the first time laid down Rights to the Electricity Consumers through “Electricity (Rights of Consumers) Rules, 2020”.

### About

- Aim → These rules serve to “**empower**” **consumers with rights** that would allow them to access continuous supply of quality, reliable electricity.
- The **Ministry of Power** framed the proposed rules under **Section 176 of the Electricity Act 2003**.
- Electricity is a **concurrent subject** and the **Centre has the power** to make rules to be implemented in each state.

### 📌 Key Provisions of the Rules:

- **Rights and Obligations →**
  - **Distributor:** It is the duty of every distribution licensee to **supply electricity on request made by an owner or occupier** of any premises in line with the provisions of Act.
  - **Consumer:** Whereas, consumers have a **right to have minimum standards of service** for supply of electricity from the distribution licensee.
- **Metering →** No connection shall be given without a meter that shall be a **smart prepayment meter or prepayment meter**.
- **Release of new connection and modification in existing connection →** **Maximum time period** of **7 days in metro cities** and **15 days in other municipal areas** and **30 days in rural areas**, has been fixed to provide new connection and modify an existing connection.
- **Billing and Payment →** There should be **transparency** applicable **consumer tariff and bills**, with the option to pay advance bills.
- **Reliability of supply →** The distribution licensee shall **supply 24×7 power to all consumers**. However, the Commission may specify lower hours of supply for some categories of consumers like agriculture.
- **Compensation mechanism →** **Automatic compensation** shall be paid to consumers for which parameters on **standards of performance** can be **monitored remotely**.
- **Consumer as prosumer →** While the **prosumers** will **maintain consumer status** and have the **same rights as the general consumer**, they will also have the right to set up **Renewable Energy (RE) generation units** including roof top solar photovoltaic (PV) systems – either by himself or through a service provider.
- **Call Centre for Consumer Services →** Distribution licensee shall establish a **centralized 24×7 toll-free call center**.
- **Grievance redressal mechanism →** **Consumer Grievance Redressal Forum** (CGRF) to include consumer and prosumer representatives.
  - Though **Maximum timeline** of **45 days** has been specified for grievance redressal, licensee shall specify the time within which various types of grievances will be resolved.

## 18. Green National Highways Corridors Project

### Why in News?

- The Centre and the World Bank signed a USD 500 million project to build safe and green national highway corridors in Rajasthan, Himachal Pradesh, Uttar Pradesh and Andhra Pradesh.

## About

- It will support the Road Transport and Highways Ministry to construct **783 kilometres of highways in various geographies** by **integrating safe and green technology designs** such as local and marginal materials, industrial by-products and other bioengineering solutions.
- States covered → **Rajasthan, Himachal Pradesh, Uttar Pradesh and Andhra Pradesh.**
- Key Features of the project →
  - The project supports an **in-depth analysis of gender-related issues** in the transport sector along with help in **creating jobs for women** by training **women-led micro enterprises** and women collectives to implement green technologies in the highway corridors.
  - The project will also **strengthen and widen existing structures; construct new pavements, drainage facilities and bypasses**; improve junctions and introduce road safety features.
- The project will help **reduce GHG emissions** in the construction and maintenance of highways.
- The **\$500 million loan** from the International Bank for Reconstruction and Development (**IBRD**) has a maturity of 18.5 years including a grace period of five years.

### **The International Bank for Reconstruction and Development (IBRD)**

- It is an **international financial institution**.
- Established in → **1944**
- Headquarter → **Washington, D.C., USA**
- Functions → It is the **lending arm** of **World Bank Group**.
  - It offers loans to middle-income developing countries.
- It is the **first of five member institutions** that **compose the World Bank Group**.
- The IBRD and its concessional lending arm, the International Development Association (IDA), are **collectively known** as the **World Bank** as they share the same leadership and staff.

## 19. Eastern Dedicated Freight Corridor

### Why in News?

- Prime Minister Shri Narendra Modi will inaugurate the 'New Bhaupur- New Khurja section' of Eastern Dedicated Freight Corridor (EDFC).

## About

- The EDFC (1856 route km) starts **from Sahnewal near Ludhiana (Punjab) and ends at Dankuni in West Bengal**.
- It will pass through the states of **Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand** and **West Bengal**.
- It is being constructed by **Dedicated Freight Corridor Corporation of India Limited** (DFCCIL), that has been set up as a **special purpose vehicle** to build and operate Dedicated Freight Corridors.
- Significance → Eastern Corridor is projected to **cater to a number of traffic streams-coal for the power plants** in the northern region of U.P., Delhi, Haryana, Punjab and parts of Rajasthan from the Eastern coal fields, finished steel, food grains, cement, fertilizers, lime stone from Rajasthan to steel plants in the east and general goods.

### **Western Dedicated Freight Corridor (WDFC)**

- DFCCIL is also constructing the WDFC (1504 route km) that **connects Dadri in Uttar Pradesh to Jawaharlal Nehru Port in Mumbai** and will traverse through the states of UP, Haryana, Rajasthan, Gujarat and Maharashtra.

## 20. National Common Mobility Card

### Why in News?

- Prime Minister has launched the ambitious National Common Mobility Card (NCMC) service for the Delhi Metro's Airport Express Line.

### About

- The idea of NCMC was floated by the **Nandan Nilekani committee** set up by the Reserve Bank of India (RBI).
- This one card will give **integrated access** to **the commuters wherever they travel**, whichever public transport they take.
- How it works? →
  - NCMC is an **automatic fare collection system**. It will turn smartphones into an **inter-operable transport card** that commuters can use eventually to pay for Metro, bus and suburban railways services.
  - This card **runs on RuPay card**.
  - The stored value on card **supports offline transaction** across all travel needs with **minimal financial risk** to involved stakeholders.
  - Ministry of housing & urban affairs brought to the fore the National Common Mobility Card (NCMC) to **enable seamless travel by different metros and other transport systems** across the country besides retail shopping and purchases.

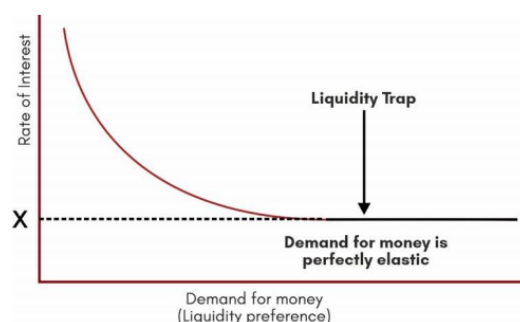
## 21. Liquidity trap

### Why in News?

- Recently, the IMF economist Gita Gopinath stated that the global economy may be heading towards a liquidity trap.

### About a liquidity trap

- A liquidity trap is a **contradictory economic situation** in which **interest rates are very low** and **savings rates are high, rendering monetary policy ineffective**.
- It leads to a scenario where any **additional money supply** that is generated in the economy get channeled towards savings rather than investment thus rendering the economy to remain at same liquidity level.
- Should India worry? →
  - The **second-order effects of lockdown in India** could later see **demand slump again** to drag India's economy down. In this context, we **risk slipping into a liquidity trap** if inflation fails to fall below 6% within a quarter or so, as projected by the RBI. (As the policy rates have been brought close to



4%) This calls for a **circumspect approach on part of India** with regard to its fiscal as well as monetary policy.

## 22. Development of Wind Parks/Wind-Solar Hybrid Park

### Why in News?

- Ministry of New and Renewable Energy (MNRE) recently proposed the scheme for “Development of Wind Parks/Wind-Solar Hybrid Park”.

### About the proposed scheme

- Sites have been identified across seven states, **Tamil Nadu, Andhra Pradesh, Karnataka, Telangana, Gujarat, Rajasthan** and **Madhya Pradesh**.
- The capacity of each park proposed is around **500 MW** and more but shall **not be less than 50 MW**.
- Centre will provide **financial assistance** for development of parks.
  - State Government will select park developer and facilitate the park developer in acquisition/ leasehold of the identified site, in obtaining all statutory clearances.
- Wind Energy Park will provide a plug and play solution (**availability of land, transmission, necessary infrastructure and necessary approvals**) to the investors for installing wind/ wind-solar power projects.
  - Jaisalmer Wind Park, Rajasthan** with installed capacity of 1,064 MW is largest wind park in India.
- Also, MNRE issued **tariff-based competitive bidding guidelines** for power procurement from grid-connected solar-wind hybrid projects (hybrid renewable energy).
- Recently, government also cleared land allotment for a **mega renewable energy hybrid park in Kutch region with capacity 41,500-megawatts** (solar and wind).

### What is hybrid renewable energy?

- Hybrid renewable energy usually **comprises of two or more renewable energy sources combined in such a way to provide an efficient system** with appropriate energy conversion technology connected together to feed power to local load or grid.
- Renewable Energy Hybrids are the **solution to a reliable, affordable** and **dispatchable integration of renewable energies**, from the combination and integration of renewable energy generation sources with one another, such as wind and solar.
- There are different types of hybrid renewable energy systems **like Biomass-wind-fuel cell, Photovoltaic-wind, Hydro-wind** and **Photovoltaic-Biomass** etc.

## 23. Draft Model Tenancy Act, 2019

### Why in News?

- Ministry of Housing and Urban Affairs has released the draft Model Tenancy, 2019.

### About Draft Model Tenancy Act, 2019

- It envisages to **balance the interest and rights of both the owner and tenant** and to create an accountable and transparent ecosystem for renting the premises in disciplined and efficient manner.
- The Model Act provides for its applicability for the whole of the State i.e. **urban as well as rural areas** in the State.



- **Features**

- **Establish Rent courts and Tribunals**
  - **Rent Authority may direct for compensation** on the person responsible for cutting off or withholding the essential supply.
  - To ensure **speedy redressal of disputes**, it also proposes to establish **Rent Court and Rent Tribunal** that have to dispose off the cases within 60 days.
  - Act provides for **fast-track quasi-judicial mechanism** for adjudication of disputes. Officer of the rank of **deputy collector or higher will act as rent authority** to adjudicate any issue arising out of a rental disagreement
- **Rent →** All premises (residential or commercial) shall be rented only after a **written agreement on mutually agreed terms**.
  - **Landlord cannot arbitrarily increase the rent** in variance with what has been agreed to in the agreement and Property owner has to give 3 month notice before increasing rent.
- **Security Deposits →** It proposes to cap the security deposit to maximum of two month's rent in case of residential properties and Security deposit to be refunded by the landlord at the time of taking over vacant possession of the premises.
- **Repair and Maintenance →** If the landowner refuses to carry out the required repairs, the tenant can get the work done and deduct the same from periodic rent.
  - A **landowner cannot enter the rented premises without 24-hour prior notice** to carry out repairs or replacement.
- **Agreement →**
  - A **digital platform** will be set up in **local vernacular language** of the State for submitting tenancy agreement and other documents.
  - The **tenant cannot sublet a part of or the whole property** or carry out any structural change without execution of supplementary agreement between landlord and tenant.
  - Landowner **cannot cut power and water supply in case of a dispute with the tenant**.
  - Act acknowledges **property manager** (the one who manages property on behalf of the landlord) **as a legal entity**. It further provides for duties of property manager and consequences of violation of duties.

## Environment

### 1. Zebrafish

#### Why in News?

- Scientists at Pune-based Agharkar Research Institute have used the Zebrafish as a research model and identified genes that can promote heart regeneration.

#### About Zebrafish

- Scientific name → **Danio rerio**.
- Zebrafish – a tiny **freshwater fish** barely **2-3 cm long** can efficiently **regenerate its damaged heart** within a short time period.
- It is a popular **aquarium fish**, frequently sold under the trade name **Danio**.
- Habitat → Zebrafish is found in the **tropical and subtropical regions**. The fish is **native to South Asia's Indo-Gangetic plains**, where they are mostly found in the **paddy fields** and even in **stagnant water and streams**.
- IUCN List → **Least Concern**.



### 2. Peacock Soft-shelled Turtle

#### Why in News?

- Recently, Peacock soft-shelled turtle (a turtle of a vulnerable species) has been rescued from a fish market in Assam's Silchar.

#### About

- Scientific Name → **Nilssononia hurum**.
- Belongs to the **family Trionychidae**.
- They are generally **omnivorous** (predominantly carnivorous) and **nocturnal**.
- They have a **large head, downturned snout** with low and oval carapace of **dark olive green to nearly black**, sometimes with a **yellow rim**.
- Habitat →
  - This species is **confined to India, Bangladesh** and **Pakistan**.
  - In India, it is **widespread in the northern** and **central parts of the Indian subcontinent**.
  - These are found in **rivers, streams, lakes** and **ponds** with **mud** or **sand bottoms**.
- Conservation Status →



- **Vulnerable** on IUCN Redlist.
- The species is also listed under **Appendix I** of CITES.
- Protected under the **Schedule I** of the Indian Wildlife (Protection) Act.
- Major Threats → The species is heavily exploited for **its meat and calipee** (the outer cartilaginous rim of the shell).

### 3. Arunachal Kiwi

#### Why in News?

- Recently, the 'Wild' Arunachal Kiwi has received organic certification by the Mission Organic Value Chain Development for the North East Region.

#### About Arunachal Kiwi

- The kiwifruit (*Actinidia deliciosa* Chev.) is a **deciduous fruiting vine** native to **Yangtze River valley of south and central China**.
- In **Arunachal Pradesh**, a domesticated variety of kiwi was introduced as a commercial fruit **only in 2000**.
- The **Ziro Valley** specifically located at 1,500-2,000 metres above sea level is the **most ideal for kiwi**.
- It is also called "**China's miracle fruit**" and "**Horticulture wonder of New Zealand**".



#### Organic Certification

- The organic certification was provided by the **Mission Organic Value Chain Development for North East Region (MOVCD-NER)**, a scheme for the northeastern states by the Ministry of Agriculture & Farmers' Welfare under the Central government.
- An agricultural practice/product is considered **organic** when there are **no chemical fertilisers** or **pesticides involved** in its cultivation process.
- Such certifications can be obtained after **scientific assessment** done by Agricultural and Processed Food Products Export Development Authority (**APEDA**).
- Certification helps producers and handlers; they receive **premium prices** for the products and have **access to fast-growing, local, regional and international markets**.

### 4. Green Charcoal Hackathon

#### Why in News

- Minister (IC) for Power and New & Renewable Energy, launched the Green Charcoal Hackathon.

#### About

- What is it? → It is a **technology challenge** with an aim to **fast-track technology developments** conducted by NVVN in partnership with EESL (Energy Efficiency Services Ltd).
- Launched by → **NVVN** (NTPC VidyutVyapar Nigam), a wholly-owned subsidiary company of NTPC Ltd.

- Purpose → The purpose of the event is to **leverage the innovative Indian mind to bridge the technology gap.**
- Prime objective to →
  - **Clean the air** by eliminating farm fire, producing renewable energy out of the agro residue.
  - **Promote local entrepreneurship.**
  - **Increase the income of the farmers.**
- The ultimate goals is to **reduce the carbon footprint** of the nation.

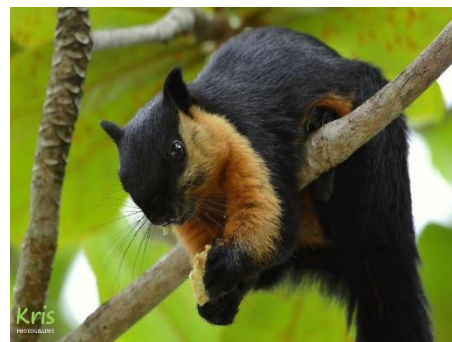
## 5. Malayan Giant Squirrel

### Why in News?

- Recently, the Zoological Survey of India (ZSI), in a first-of-its-kind study, has projected that numbers of the Malayan Giant Squirrel could decline by 90% in India by 2050, and it could be extinct by then if urgent steps are not taken.

### About

- Scientific Name → **Ratufa bicolor.**
- Description → It is one of the **world's largest squirrel species** that has a dark upper body, pale under parts, and a long, bushy tail.
- Unlike the nocturnal flying squirrels, giant squirrels are **diurnal** (active during the day), **but arboreal** (tree-dwelling) and **herbivorous** like the flying squirrels.
- Habitat →
  - It is found mostly in **evergreen and semi-evergreen forests**, from plains to hills at elevations of 50 m to 1,500 m above sea level.
  - Globally it is distributed through **Southern China, Thailand, Laos, Vietnam, Burma, the Malayan Peninsula, Sumatra, and Java.**
  - In India, is found in the **forests of Northeast** and is currently found in parts of **West Bengal, Sikkim, Assam, Arunachal Pradesh, Meghalaya, and Nagaland.**
- Significance → It is considered to be a **forest health indicator species.**
- Conservation Status →
  - IUCN Red List: **Near Threatened.**
  - CITES: **Appendix II.**
  - Wildlife Protection Act, 1972: **Schedule I.**
- Threats → According to the study, the squirrel and its habitat are under threat from **deforestation, fragmentation of forests, crop cultivation** and **over-harvesting of food**, illegal trade in wildlife, and hunting for consumption.



## 6. State of the Global Climate Report

### Why in News?

- The World Meteorological Organization(WMO) has released the annual State of Global Climate Report,2020 to keep a track of global warming.

## About Key Highlights

- **2020** will be **one of the three hottest years** just behind 2016 and 2019.
- The global mean surface temperature for January-October 2020 was **1.2 degree Celsius higher than the pre-industrial baseline** (1850-1900). For that period, 2020 is the **second-warmest year on record**.
- 80% of ocean areas have experienced **at least one marine heat wave** (MHW) so far in 2020.
- Global sea-level rise was also similar to 2019 value. This was mainly due to the **increased melting of the ice sheets** in Greenland and Antarctica.

### World Meteorological Organization (WMO)

- It is an **intergovernmental organization** established by the ratification of the WMO Convention in **1950**.
- Members → **193 Member** States and Territories.
- Significance → It is a **specialized agency** of the United Nations (**UN**).
- Headquarters → **Geneva, Switzerland**.
- Reports →
  - Greenhouse Gas Bulletin.
  - Status of the World Climate.

## 7. Cannabis

### Why in News?

- The UN Commission on Narcotic Drugs (CND) recently reclassified out of the most dangerous category of drugs.

### About News

- The CND has decided to **remove cannabis from Schedule IV of the 1961** Single Convention on Narcotic Drugs.
- Earlier, cannabis was listed alongside **deadly, addictive opioids**, including heroin.
- Now, it is **removed from the strictest control schedules** that even discouraged its use for medical purposes.

### The cannabis plants

- According to the WHO, cannabis is a **generic term** used to denote the several **psychoactive preparations** of the **plant Cannabis sativa**.
  - According to the WHO, cannabis is by far the **most widely cultivated, trafficked** and **abused illicit drug** in the world.
- The major psychoactive constituent in cannabis is **Delta9 tetrahydrocannabinol** (THC).
- The unpollinated female plants are called **hashish**. **Cannabis oil** (hashish oil) is a **concentrate of cannabinoids** (compounds which are structurally similar to THC) obtained by **solvent extraction** of the **crude plant material or of the resin**.
- According to the NDPS Act "**cannabis plant**" means any plant of the genus cannabis.
- How is it regulated? →
  - The **Vienna-based CND**, founded in **1946**, is the UN agency mandated to decide on the **scope of control of substances** by placing them in the schedules of global drug control conventions.



- Cannabis has been on **Schedule IV** the **most dangerous category** of the **1961** Single Convention on Narcotic Drugs for as long as the international treaty has existed.
- The law around cannabis **in India** can be found in the **Narcotics Drugs and Psychotropic Substances Act, 1985**.
- What this could mean for the cannabis industry? →
  - The reclassification of cannabis by the UN agency, although significant, would not immediately change its status worldwide as long as **individual countries continue with existing regulations**.

## 8. The houbara bustard

### Why in News?

- Pakistan has issued special permits to Saudi Crown Prince Mohammed bin Salman and two other members of the royal family to hunt the internationally protected houbara bustards during the hunting season 2020-21.

### About Houbara Bustard

- Bustards are **large, terrestrial birds** that belong to several species, including some of the largest flying birds.
- Two Distinct Species of Houbara Bustard → The International Union for Conservation of Nature (**IUCN**) recognises **two distinct species found in:**
  - **North Africa** (*Chlamydotis undulata*) and
  - **Asia** (*Chlamydotis macqueenii*).
- Habitat of Asian Houbara →
  - It lives in **arid climates**.
  - The population of the Asian houbara bustards extends from **northeast Asia**, across **central Asia**, the **Middle East**, and the **Arabian Peninsula to reach the Sinai desert** (Egypt).
  - After breeding in the spring, the Asian bustards **migrate south to spend the winter in Pakistan**, the **Arabian Peninsula** and **nearby Southwest Asia**.
- IUCN Status → **Vulnerable**
- Reasons for Decline → **Poaching, unregulated hunting**, along with degradation of its natural habitat.

## 9. Red Sea Turtles

### Why in News?

- Turtle populations in the Red Sea could be turning overwhelmingly female because of a rise in sea temperatures caused due to anthropogenic climate change, a new study has showed.

### About

- There are **seven extant species worldwide**, **five** of which can be **found in the Red Sea**: the green turtle, the hawksbill turtle, the loggerhead turtle, the olive ridley turtle and the leatherback turtle.
- In order to maintain a **50:50 ratio of male and female** in the population, a **temperature of 29.2 degrees Celsius is pivotal**.
- Above this, **hatchlings** would be **predominantly female**.
- The sand temperatures at four of the sites **exceeded 29.2 degrees**; leading the team to the conclusion that **'feminization' of the population** could be **already happening**.

- Their significance →
  - Marine turtles—as **all top predators**—have a prominent role in **maintaining balanced** and **healthy ecosystems**, in particular seagrass beds and coral reefs.
  - They also help in **transporting nutrients** towards naturally nutrient-poor ecosystems, and providing food and transportation for other marine species (e.g., barnacles and commensal crabs).
  - Marine turtles also play an **important role in the economy of the tourism industry**.
- The Red Sea is home to five out of seven species of sea turtles. They are →
  - **Green turtle** – Endangered
  - **Hawksbill turtle** – Critically Endangered
  - **Loggerhead turtle** – Critically Endangered
  - **Olive Ridley turtle** – Vulnerable
  - **Leatherback turtle** – Vulnerable.

## 10. Giant African Snail Invasion

### Why in News?

- Study finds repeated waves of Giant African Snail invasion in Kerala.

### About

- Giant African Snail (*Achatina fulica*) is **one of the worst invasive species** declared by the International Union for Conservation of Nature (IUCN).
- It is suspected to spread **eosinophilic meningitis, septicaemia** and **peritonitis in humans**.
- The Giant African Snail in **Asia and Africa** has had **multiple episodes of invasion**.
- New snail populations **continue to arrive in India** from **snail-infested countries** across the world.
- Its population found in India had a **higher genetic variety** than those in the native African continent.
- This genetic variety indicates that the **snail continues to have multiple invasions in India, mainly Kerala**, from different countries.
- About Study → Conducted at the **Kerala Forest Research Institute** (KFRI) with the support of the Kerala State Council for Science, Technology and Environment (KSCSTE) **between 2016 and 2020**, the study was published in the biological journal of the **Linnean Society**.



## 11. Climate Change Performance Index 2020

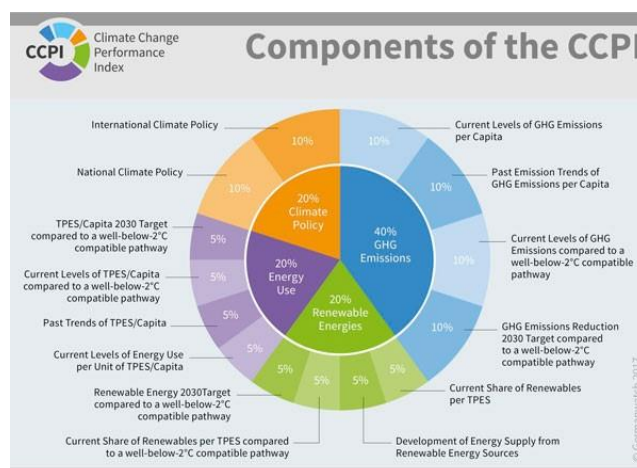
### Why in News?

- India ranked high along with the European Union and the United Kingdom in the latest edition of the Climate Change Performance Index (CCPI) 2020.

### About

- Published by → Environment think tank **Germanwatch** since 2005.
- It is an **independent monitoring tool** for tracking countries' climate protection performance.

- It compares the climate protection performance of **57 countries** and the **European Union (EU)**, which are together responsible for **more than 90%** of global greenhouse gas (**GHG**) **emissions**.
- Using standardised criteria, the CCPI looks at four categories, with 14 indicators →
  - Greenhouse Gas Emissions** (40% of the overall score),
  - Renewable Energy** (20%),
  - Energy Use** (20%), and
  - Climate Policy** (20%).
- The CCPI's unique climate policy section **evaluates countries' progress** in **implementing policies** working towards achieving the **Paris Agreement goals**.



### 📌 Key Finding

- India, for the second time in a **row ranked among the top 10**, along with the EU and the UK. It **scored 63.98 points out of 100**.
- It received high ratings on all CCPI indicators **except 'renewable energy'**, where it was categorised as having a **'medium' performance**.
- The index found that **no country** was doing **enough to meet the goals** of the 2015 Paris Agreement.
- Six G20 countries were ranked among very low performers.
- The **United States**, with a **rank of 61**, was the **worst performer**.

## 12. Eco-ducts or Eco-bridges

### Why in News?

- Recently, Ramnagar Forest Division in Nainital district, Uttarakhand, built its first eco-bridge for reptiles and smaller mammals.

### About

- What is it? → These are **areas of wildlife habitat** that aim to **enhance wildlife connectivity** that can be disrupted because of highways or logging.
- Usually these bridges are **overlaid with planting from the area** to give it a contiguous look with the landscape.
- Types of Eco-bridges → It includes
  - canopy bridges** (usually for monkeys, squirrels and other arboreal species);
  - concrete underpasses** or overpass tunnels or viaducts (usually for larger animals);
  - and **amphibian tunnels** or **culverts**.
- Significance → Eco-bridges play a **very important role in maintaining connections** between animal and plant populations that would otherwise be isolated and therefore at greater risk of local extinction.

## 13. Two New Zoos Granted Recognition

### Why in News?

- At the 37th General Body meeting of Central Zoo Authority chaired by Union Minister for Environment, two new zoos the Rajgir Zoo Safari in Nalanda, Bihar and Shaheed Ashfaq Ullah Khan Prani Udyaan in Gorakhpur, Uttar Pradesh were granted recognition.

### About Rajgir Zoo Safari, Nalanda, Bihar

- The zoo is established exclusively comprising on **only safari enclosures** which **offer larger space for captive animals**.
- The animals are **not in cages** but they are **free to roam over a forest area**.
- The zoo is located close to the **historically important Nalanda**.
- The zoo proposes to **house Lion, Bear, Tiger, Leopard** and a **mixed safari of common herbivore species** such as Spotted Deer, Sambar among others.

### 📌 Shaheed Ashfaq Ullah Khan Prani Udyaan, Gorakhpur, U.P.

- With the establishment of this zoo, the state of **Uttar Pradesh** has a **total of 9 zoos**.
- The zoo is situated in the **spiritual land of Gorakhpur** and has a **high visitation**.
- The zoo features enclosures for a **range of birds, herbivores** and **carnivores**.

### 📌 About the Central Zoo Authority

- Central Zoo Authority was established as a **statutory body** under the **Ministry of Environment & Forests** by the Government of India in the year **1992**.
- The Central Zoo Authority has been constituted under the **section 38A of Wild Life (Protection) Act 1972**.
- The CZA is **chaired by the Environment Minister** and tasked with regulating zoos across the country.
- It is responsible for **oversight of zoos**.
- It is an **affiliate member** of the **World Association of Zoos and Aquariums** (WAZA)

## 14. Emissions Gap Report 2020

### Why in News?

- United Nations Environment Programme (UNEP)'s Emissions Gap Report 2020 has been published recently.

### About

- Published by → **United Nations Environment Programme** (UNEP).
- Purpose → To measure the gap between anticipated emissions and levels consistent with the **Paris Agreement goals of limiting global warming** this century to well **below 2°C and pursuing 1.5°C**.
- What is the "Emissions Gap"?
  - Also called as the "**Commitment Gap**", it is the **difference between the low level of emissions** that the world needs to drop to, compared with the **projected level of emissions** based on countries' current commitments to decarbonization.
  - It measures the gap between **what we need to do** and **what we are actually doing** to tackle climate change.
- Why does the Emissions Gap Matter?

- The gap is important because if we can't close it and meet the emissions reduction target, we will **face increasingly severe climate impacts worldwide**.
- It is important that **policymakers**, and **their citizens**, **know what the gap** is so that the commitments countries are making are **sufficient to close the gap**.

#### 👉 Findings from the Emission Gap Report 2020:

- **Record high GHG emissions** → Global GHG emissions **continued to grow** for the third **consecutive year in 2019**, reaching a **record high of 52.4 Gigatonne carbon equivalent** (GtCO<sub>2e</sub>) without including land use changes (LUC).
- **Record carbon emission** → Fossil **carbon dioxide** (CO<sub>2</sub>) **emissions** (from fossil fuels and carbonates) dominate **total GHG emissions** and consequently the growth in GHG emissions.
- **Forest fires increasing GHG emissions** → Since 2010, global GHG emissions have grown **1.4% per year on average**, with a more rapid increase of **2.6% in 2019** due to a large **increase in vegetation forest fires**.

#### 👉 United Nations Environment Programme

- The UNEP is a leading **global environmental authority** established on **5th June 1972**.
- Functions → It sets the **global environmental agenda**, **promotes the sustainable development** within the United Nations system, and serves as an authoritative advocate for global environment protection.
- Major Reports → **Emission Gap Report**, **Global Environment Outlook**, **Frontiers**, **Invest into Healthy Planet**.
- Major Campaigns → **Beat Pollution**, **UN75**, **World Environment Day**, **Wild for Life**.
- Headquarters → **Nairobi, Kenya**.

## 15. Himalayan serow

### Why in News?

- A Himalayan serow (*Capricornis sumatraensis thar*) has been sighted for the first time in the Spiti cold desert region, Himachal Pradesh.

### About

- Scientific name → The Himalayan serow, or **Capricornis sumatraensis thar**, is a subspecies of the mainland serow (*Capricornis sumatraensis*).
- It **resembles a cross between a goat**, a **donkey**, a **cow**, and a **pig**.
- They are **herbivores**.
- It's a **medium-sized mammal** with a **large head**, **thick neck**, **short limbs**, long, mule-like ears, and a coat of dark hair.
- Distribution →
  - There are several species of serows and **all of them are found in Asia**.
  - They are found at **altitudes** between **2,000 metres and 4,000 metres** (6,500 to 13,000 feet).
  - They are known to be **found in eastern**, **central**, and **western Himalayas** but **not in** the **Trans Himalayan region**.
- conservation status →



- IUCN Red List: **Vulnerable**
- Wildlife Protection Act, 1972: **Schedule I**

## 16. Indian Gaur

### Why in News?

- The images of an Indian Bison, or Gaur, in Pune's urban landscape, the frenzy among people, the capture of the injured animal that ran around in panic, and the sad news of its death has put the spotlight on human-Gaur conflict in the country.

### About Indian Gaur

- Scientific Name → **Bos Gaurus**.
- Physical Characteristics → It is one of the **largest extant bovines**. It is one of the largest species among the wild cattle, reaching a shoulder height of up to 220 cm.
- Habitat → Gaurs are found on the **forested hills** and **grassy areas of south to south east Asia**.
- Distribution →
  - They are found in **India, China, Thailand, Malaysia, Bangladesh, Bhutan, and Nepal**.
  - The **Western Ghats in southern India** constitute one of the most extensive extant strongholds of gaur, in particular in the **Wayanad – Nagarhole – Mudumalai – Bandipur complex**.
  - The gaur is the **State Animal of Goa and Bihar**.
- Status →
  - It is listed as **Vulnerable** in the IUCN Red List.
  - It is included in the **Schedule I** of the Wild Life Protection Act, 1972.
  - It is listed in CITES **Appendix I**.

## 17. Myristica Swamp Treefrog

### Why in News?

- Myristica swamp treefrog, has been recorded for the first time in the Vazhachal Reserve Forest in Kerala's Thrissur district.

### About

- Scientific name → **Mercurana myristicapalustris**.
- These are **endemic** to the **Western Ghats**.
- These frogs are **rare** and **elusive for the reason** that they are arboreal and **active only for a few weeks** during their breeding season.
- Unique Breeding Behaviour →
- The breeding season, unlike for other frogs, starts in the **pre monsoon season (May)** and **ends before the monsoon** becomes **fully active in June**.
- Before the end of the breeding season, the **female frogs** along with **their male counterparts descend** on the **forest floor**.
- The **female digs the mud and lays eggs** in shallow burrows in mud. After breeding and egg laying, they **retreat back to the high canopies** of the tree and remain elusive till the next breeding season.

## 18. Climate Ambition Summit

### Why in News?

- The United Nations, United Kingdom and France co-hosted the Climate Ambition Summit 2020 which was held virtually recently.

### About

- Hosted by → The summit was co-hosted by the United Nations, United Kingdom and France.
- It has been organized virtually to mark the five years of the adoption of the Paris Agreement on Climate Change.
- The summit aims to bring together leaders to make new commitments to tackle climate change and deliver on the goals of the Paris Agreement.

### 📌 Key Takeaways from the summit:

- The United Kingdom pledged to double its climate finance contribution to USD 15.5 billion over the next five years.
- The European Investment Bank announced a goal of 50% of investments going toward the climate and environment sectors by 2025.
- It also called for climate finance commitments to support the most vulnerable and ambitious adaptation plans and underlying policies.
- According to Indian Prime Minister, India is not only on track to achieve its Paris Agreement targets, but to exceed them beyond expectations.

### 📌 India's progress on Paris agreement commitments

- India has reduced its emission by 21% over 2005 levels.
- India's Renewable energy capacity is the fourth largest in the world. It will reach 175 GigaWatts before 2020.
- India has also managed to grow its solar capacity from 2.63 GigaWatts in 2014 to 36 GigaWatts in 2020.
- On the world stage, India has pioneered two major initiatives: (1) The International Solar Alliance; (2) Coalition for Disaster Resilient Infrastructure.

### 📌 Paris agreement:

- It was adopted at the UNFCCC COP21 held in Paris in 2015.
- It aims to keep global temperature rise in the 21st century well below 2 degrees Celsius above pre-industrial levels and pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

## 19. Kaziranga National Park

### Why in News?

- Kaziranga National Park and Tiger Reserve can now be explored by boats while bicycle tracks are also being finalised. One can go trekking too.

### About

- Location → It is located in the **State of Assam** and **covers 42,996 Hectare** (ha).
- History → Formed in **1908** on the **recommendation of Mary Curzon**, the park is located in the edge of the **Eastern Himalayan biodiversity hotspots – Golaghat and Nagaon district**.
- Legal Status →
  - It was declared as a **National Park in 1974**.
  - It has been declared a **tiger reserve since 2007**. It has a total tiger reserve area of 1,030 sq km with a core area of 430 sq. km.
- International Status →
  - It was declared a **UNESCO World Heritage Site** in **1985**.
  - It is recognized as an **Important Bird Area** by **BirdLife International**.
- Important Species Found →
  - It hosts **two-thirds** of the **world's great one-horned rhinoceroses**.
  - Much of the focus of conservation efforts in Kaziranga are focused on the '**big four**' species— **Rhino, Elephant, Royal Bengal tiger** and **Asiatic water buffalo**.
- Rivers and Highways →
  - The **National Highway 37** passes through the park area.
  - Kaziranga is crisscrossed by four main rivers — **Brahmaputra, Diphlu, Mora Diphlu** and **Mora Dhansiri**.
- Other national parks in Assam are →
  - Dibru-Saikhowa National Park,
  - Manas National Park,
  - Nameri National Park,
  - Rajiv Gandhi Orang National Park.

## 20. Voluntary Disclosure of Exotic Pets

### Why in News?

- Last month, the Supreme Court upheld an Allahabad High Court order granting immunity from investigation and prosecution if one declared illegal acquisition or possession of exotic wildlife species.

### About Voluntary disclosure scheme

- The **MoEFCC** has come out with an advisory on a **one-time voluntary disclosure amnesty scheme**.
- It allows owners of exotic live species that have been **acquired illegally**, or **without documents**, to **declare their stock** to the government between June and December 2020.
- The scheme aims to **address** the **challenge of zoonotic diseases** and **regulate their import**. In its current form, however.
- It shall develop an **inventory of exotic live species** for **better compliance** under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**).
- However, the amnesty scheme is **just an advisory, not a law**.
- Exotic wildlife covered under scheme →
  - The advisory has defined exotic live species as animals named under the **Appendices I, II and III of the CITES**.
  - It does **not include species** from the **Schedules of the Wild Life (Protection) Act 1972**.

- The advisory **excludes exotic birds** from the **amnesty scheme**.
- Process for disclosure →
  - The disclosure has to be done online through **MoEFCC's Parivesh portal**.
  - The owner of the animal(s) will have to declare the stock to the **Chief Wildlife Warden** (CWLW) of the **concerned state** or **Union Territory**.
  - This will be followed by a **physical verification of the animals**.

#### CITES

- It is an International agreement to **regulate worldwide commercial trade in wild animal and plant species**. It also restricts trade in items made from such plants and animals, such as food, clothing, medicine, and souvenirs
- It was signed on **March 3, 1973** (Hence world wildlife day is celebrated on march 3).
- It is **administered by** the **United Nations Environment Programme** (UNEP).
- Secretariat — **Geneva (Switzerland)**.
- CITES is **legally binding** on state parties to the convention, which are obliged to adopt their own domestic legislation to implement its goals.
- **India is a signatory** to and has also **ratified CITES convention in 1976**.

## 21. Ischaemum janarthanamii

### Why in News?

- Recently, a novel species of Muraingrass has been identified by scientists from Agharkar Research Institute (ARI), in the plateaus of Western Ghats of Goa.

### About

- It is named as '**Ischaemum janarthanamii**' in honour of **Prof. M. K. Janarthanam** who is famous for his contribution to Indian grass taxonomy.
- It has the ability to **survive harsh conditions** with **low nutrient availability**, and **blossoms every monsoon**.
- They are known for their **ecological and economic importance**, such as **fodder**.
- Habitat: It grows on **low altitude lateritic plateaus** in the outskirts of **Bhagwan Mahavir National Park, Goa**.
- The Western Ghats have **40 species** with the **highest concentration of the Ischaemum** (genus).

## 22. 12th GRIHA Summit

### Why in News?

- Union Minister of State (IC) of the Ministry of Housing and Urban Affairs, Shri Hardeep Singh Puri, has recently inaugurated the 12th GRIHA Virtual Summit in New Delhi.

### About

- Purpose → To **serve as a platform to deliberate on innovative technologies** and **solutions** which shall help in creating robust mechanisms for developing sustainable and resilient solutions for the benefit of the entire community.
- Theme → **Rejuvenating Resilient Habitats**.
- Launch Event → The Vice President of India launched the **SHASHWAT magazine** and the book '**30 Stories Beyond Buildings**' during the event.

#### 👉 **Green Rating for Integrated Habitat Assessment (GRIHA):**

- What is it? → It is a **rating tool** that helps people **assesses the performance of their building** against certain nationally acceptable benchmarks.
- Bodies involved → It is given by the **GRIHA Council**, a **not-for-profit society** jointly setup by The Energy and Resources Institute (**TERI**) and the Ministry of New and Renewable Energy (**MNRE**) to promote green buildings in India.
- Mechanism → The system has been developed to help '**design and evaluate**' new buildings (buildings that are still at the inception stages). A building is assessed based on its **predicted performance over its entire life cycle**.
  - Parameters used:
    - Site selection and planning
    - Conservation and efficient utilization of resources
    - Building operation and maintenance
    - Innovation points.
- Benefits → This system, along with the activities and processes that lead up to it, benefits the community with the improvement in the **environment by reducing GHG (greenhouse gas) emissions**, **reducing energy consumption** and the **stress on natural resources**.

#### 👉 **Other Related Initiatives:**

- **Global Housing Technology Challenge (GHTC)**
  - Organised by → The **Ministry of Housing and Urban Affairs**.
  - Launched → **January 2019**
  - Aim → To **identify and mainstream best available and proven construction technologies** that are sustainable, green and disaster-resilient to enable a paradigm shift in housing construction.
- **Affordable Sustainable Housing Accelerators (ASHA)**
  - Under this initiative **five Incubation Centers** have been set up for **identifying innovative materials, processes** and **technology for resource-efficient**, resilient and sustainable construction.

## 23. Water Impact Summit

### Why in News?

- India Water Impact Summit continues with many more experts from India and abroad sharing their insights on the topic of conservation and development.

### About

- Organized by → The summit has been organised by the **National Mission for Clean Ganga** and **Center for Ganga River Basin Management and Studies** (cGanga).
- Objective → To **bring together various stakeholders to discuss, debate and develop model solutions** to some of the biggest water related issues in the country.
- Theme → “**Arth Ganga: River Conservation Synchronised Development**”.
- During the event, Norwegian Institute of Bioeconomy Research **signed MOU** with cGanga (think-tank of NMCG) for development **of sludge management framework** in India.

#### 📌 NMCG

- It is the **implementation wing** of National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council).
- It was established in the **year 2011** as a **registered society** under Societies Registration Act, 1860.

#### 📌 Centre for Ganga River Basin Management and Studies (cGanga)

- It was established at the **Indian Institute of Technology, Kanpur** (IITK) in **2016**.
- The Centre is a **Centre of Excellence for data collection**, the creation and dissemination of knowledge and information for the sustainable development of Ganga River Basin.
- The centre acts in the capacity of a **comprehensive think-tank** to the **National Mission for Clean Ganga** (NMCG), in its stated goals and objectives vis-à-vis the Ganga River Basin.

## 24. Himalayan Griffon Vulture

### Why in News?

- Recently, Himalayan griffon vulture has been sighted for the first time at the Point Calimere Wildlife and Bird Sanctuary near Vedaranyam in Nagapattinam district.

### About

- Scientific name → **Gyps himalayensis**.
- It is an Old World vulture in the **family Accipitridae**. It is one of the two largest Old World vultures and true raptors.
- Distribution → This species is found along the **Himalayas** and the **adjoining Tibetan Plateau**.
- Conservation Status →
  - The IUCN status of the bird is **Near threatened**.
  - It is listed in **Appendix II** of the CITES.
- Threat →
  - Himalayan vultures are also **susceptible to toxicity** induced by **diclofenac**, a drug whose residues in domestic animal carcasses.
  - But their population have however **not shown signs of rapid decline** as witnessed in populations of other Gyps vultures across Asia.

#### 📌 Point Calimere Wildlife Sanctuary

- The Point Calimere Wildlife & Bird Sanctuary in **Tamil Nadu** was created as a **sanctuary in 1967**.



- It was established essentially for the **conservation of the endangered blackbuck antelope**, endemic to the Indian subcontinent.
- The sanctuary includes a part of the **Great Vedaranyam swamp**, **Muthupet mangroves** and **Panchanadikulam wetlands**, and is flanked by the Bay of Bengal in the east, and Palk Strait in the south.

## 25. Pink Phenomenon

### Why in News?

- In Avalapandi, a village in Kerala, an aquatic plant forked fanwort has painted the water bodies pink, which led to the 'pink phenomenon'.

### About

- This plant comes from the **family of Red Cabomba** (Cabomba furcata).
- Cabomba is a **submerged perennial aquatic plant** that **grows in stagnant** to slow-flowing freshwater.
- It is an **invasive species** that belongs to Central and South America.
- It requires a **huge amount of oxygen to grow** and that could **badly affect freshwater biodiversity**.
- It reaches a **maximum height between 30 and 80 cm** and is up to 8 cm wide. It **bears purple flowers**.
- It has a **high natural dispersal potential** due to its ability to readily fragment and spread.
- Its **main habitats** include freshwater bodies such as **rivers, reservoirs, ponds, irrigation canals** and **other shallow wetlands**.

### 📌 Invasive species

- Any biological species that are **introduced outside** their natural range and **negatively impact the native biodiversity**, ecosystem function, health and human welfare are called **invasive alien species**.
- Other invasive species in Kerala →
  - **Terrestrial invasive alien plants** → Plants such as Chromolaena odorata, Lantana Camara, Mikania micrantha, Mimosa diplotricha, and Sphagneticolobata etc have affected biodiversity.
  - **Invasive alien Fauna** → The giant African snail Achatina fulica, papaya mealybug Paracoccus marginatus, etc have affected the biodiversity of rural and urban spaces in Kerala.

## 26. Young Champions of the Earth: UN

### Why in News?

- UN Environment Programme (UNEP) has announced the winners of the 2020 Champions of the Earth award.

### About

- It was launched in **2005** by the **United Nations Environment Programme** (UNEP).
- It is the **UN's highest environmental honour**.
- Purpose → It **recognizes** outstanding individuals and organizations from the public and private sectors and from civil society **whose actions** have had a **transformative positive impact on the environment**.
- Categories → The award recognizes laureates in the following categories: (1) **Lifetime Achievement**, (2) **Policy Leadership**, (3) **Action and Inspiration**, (4) **Entrepreneurial Vision** and (5) **Science and Innovation**.
- Each winner will receive →

- USD 10,000 in seed funding,
- Attendance at a high-level UN meeting,
- An introduction to dignitaries at the Champions of the Earth award ceremony,
- Publicity and recognition through interviews and online and global media.

### **United Nation Environment Program**

- UNEP, was established in **1972** to guide and coordinate environmental activities within the United Nations (UN) system.
- Purpose → UNEP **promotes international cooperation** on environmental issues, provides guidance to UN organizations.
  - Through its scientific advisory groups, UNEP encourages the international scientific community to participate in formulating policy for many of the UN's environmental projects.
- Headquartered → **Nairobi, Kenya**.
- Major Reports → **Emission Gap Report**, **Global Environment Outlook**, **Frontiers**, **Invest into Healthy Planet**.
- Major Campaigns → **Beat Pollution**, **UN75**, **World Environment Day**, **Wild for Life**.

## 27. Great Indian Bustard

### Why in News?

- The Wildlife Institute of India proposed to put all power transmission lines passing through Great Indian Bustard (GIB) habitat underground.

### About

- The GIB is one of the **heaviest flying bird**'s endemics to the Indian subcontinent.
- GIB, a bird **native to India and Pakistan**, is the **State Bird of Rajasthan**.
- The **largest** population is **found in Rajasthan**.
- The sanctuaries that shelter or conserve GIB are →
  - **Desert National Park**, Rajasthan
  - **Kutch Bustard Sanctuary**, Gujarat
  - **Great Indian Bustard Sanctuary** or Jawaharlal Nehru Bustard Sanctuary, Maharashtra
- Protection status of GIB →
  - IUCN Status is **Critically Endangered**
  - **Appendix I** of CITES
  - **Schedule I** of the Indian Wildlife (Protection) Act, 1972
- Threats → include **agriculture**; **energy production & mining**; **transportation**; **human intrusions**, and invasive and other problematic species.

## 28. Himalayan trillium

### Why in News?

- The Himalayan trillium (Trillium govanianum), a common herb of the Himalayas was declared 'endangered' by the International Union for Conservation of Nature (IUCN) last week.

## About

- In recent years, the plant has become one of the **most traded commercial plants** of the Himalayan region, due to its **high medicinal quality**.
- It is found in **temperate** and **sub-alpine zones of the Himalayas**, at an altitude from 2,400-4,000 metres above sea level.
- Their existence has also been **traced across India, Bhutan, Nepal, China, Afghanistan and Pakistan**.
- In India, it is found in four states only- **Himachal Pradesh, Jammu and Kashmir, Sikkim, and Uttarakhand**.
- Often called **Nagchatri**, in local areas this herb grows to a height of 15-20 cm.
- Various applications →
  - It has been used in **traditional medicine** to cure diseases like dysentery, wounds, skin boils, inflammation, sepsis, as well as menstrual and sexual disorders.
  - Recent experiments have shown that the rhizome of the herb is a **source of steroidal saponins** and can be used as an **anti-cancer** and **anti-ageing agent**.
- Causes for decline →
  - **Overexploitation**.
  - **Longer life cycle** i.e. slow to reach reproductive maturity.
  - **Poor capacity** for seed dispersal.
  - Due to its **high medicinal quality**, it is **vulnerable to trading**.

## 29. Rehabilitation centre for monkeys

### Why in News?

- The first rescue and rehabilitation centre for monkeys in Telangana was inaugurated at Gandhi Ramanna Haritavanam near Chincholi village in Nirmal district.

## About

- It is the **second such facility** for the primates in the country (first one is in Himachal Pradesh).
- Monkeys that venture **into human habitations** would be **caught in a phased manner**, brought to the centre where they would be **operated on for birth control** and would be **released into the forests again** after the rehabilitation period.
- To make the rehabilitation centre a **sustainable habitat** for the **primates, several fruit and flowering plants**, a **variety of trees** that provide shade, and medicinal plants would be grown.

## 30. Status of leopards in India, 2018 Report

### Why in News?

- As per a recent report 'Status of leopards in India, 2018' released by the Ministry of Environment, Forest and Climate Change there has been a "60% increase in the population count of leopards in India from 2014 estimates".

## About Key Takeaways

- Leopards in India → The 2014 estimates placed the population of leopards at nearly 8,000 which has **increased to 12,852**.

- Largest Number of Leopards → The largest number of leopards have been estimated in **Madhya Pradesh (3,421)** followed by **Karnataka (1,783)** and **Maharashtra (1,690)**.
- Region wise distribution →
  - **Central India and Eastern Ghats** have the highest number of leopards at 8,071.
  - **Western Ghats**: 3,387 leopards
  - **Shivalik and Gangetic Plains**: 1,253 leopards
  - **Northeast hills**: 141 leopards
- Method Used → The leopard population has been estimated using **camera trapping** method apart from **satellite imaging** and **Field work** by the Wildlife Institute of India and National Tiger Conservation Authority (NTCA).
- Threats to Leopard →
  - **Fragmentation of forests** as well as the decline in quality of forests leading to habitat loss, **Human-Leopard conflict**, **Poaching** etc.

### 📌 Leopard

- Scientific Name → **Panthera pardus**.
- Conservation Status →
  - IUCN: **Vulnerable**
  - CITES: **Appendix I**
  - Wildlife Protection Act 1972: **Schedule 1**
- Nine subspecies of the leopard have been recognized, and they are **distributed across Africa and Asia**.

### 📌 Wildlife Institute of India

- Wildlife Institute of India (WII) is an **autonomous institution** under the Ministry of Environment, Forest and Climate Change.
- Established in → **1982**.
- HQ → **Dehradun, Uttarakhand**.
- Functions → It offers **training programs**, **academic courses**, and **advisory** in wildlife research and management.

### 📌 National Tiger Conservation Authority

- National Tiger Conservation Authority (NTCA) is a **statutory body** under the Ministry of Environment, Forests and Climate Change.
- Established in → **2005**.
- Functions → It was constituted under **enabling provisions of the Wildlife (Protection) Act, 1972**, as **amended in 2006**, for strengthening tiger conservation, as per powers and functions assigned to it.

## 31. Firefly bird diverters for Great Indian Bustards

### Why in News?

- The Ministry of Environment along with the Wildlife Conservation Society, India, has come up with a unique initiative — a “firefly bird diverter” for overhead power lines in areas where Great Indian Bustard (GIB) populations are found in the wild.

### About Firefly bird diverters

- Firefly bird diverters are **flaps installed on power lines**. They **work as reflectors** for bird species like the GIB.
- Birds can **spot them** from a **distance of about 50 metres** and **change their path** of flight to avoid collision with power lines.
- The diverters are called **fireflies** because they **look like fireflies from a distance**, shining on power lines in the night.
- This model has been **endorsed by experts** from the International Union for Conservation of Nature (**IUCN**) **Species Survival Commission’s (SSC) Bustard Specialist Group**.
- The firefly detectors have been **installed** in the **Pokhran tehsil in Rajasthan**.

### Great Indian Bustard:

- It is one of the **heaviest flying birds** (weighing up to 15kgs). They inhabit **dry grasslands** and **scrublands** on the Indian subcontinent
- Habitat → It is **endemic to the Indian subcontinent**. It is found in **Rajasthan** (Desert National park), **Gujarat, Madhya Pradesh, Karnataka** and **Andhra Pradesh** in India and parts of Pakistan.
  - Conservation Status →
  - IUCN Red List: It is a **critically Endangered** species with less than 150 birds left in the wild.
  - Indian Wildlife (Protection) Act, 1972: **Schedule I**
  - CITES: Appendix I
- Threats → **Death by collision with infrastructure**, particularly power lines and wind turbines, **Depletion of grasslands, hunting** etc.
- Project Great Indian Bustard →
  - It was launched **by Rajasthan Government** with the objective of **conservation** of the remaining population of critically endangered Great Indian Bustard (*Ardeotis nigriceps*) locally called Godawan.

### 👉 IUCN Species Survival Commission(SSC)

- It is a **science-based network** of **more than 9,000 volunteer experts** from almost every country of the world, all working together towards achieving the vision of, “A just world that values and conserves nature through positive action to reduce the loss of diversity of life on earth”.

## 32. Gastrodia agnicellus

### Why in News?

- Gastrodia agnicellus, a newly discovered orchid has been named the ugliest orchid in the world.

## About

- Location → Found in a **forest in Madagascar**, it **feeds on fungi** and **has no leaves**.
- Although assessed as a **threatened species**, the plants have some protection because they are **located in a national park**.

### 📌 Madagascar

- Madagascar is an island country in the **Indian Ocean**, approximately 400 kilometres off the coast of East Africa.
- Madagascar is the **world's second-largest island country**.



## 33. Pobitora Wildlife Sanctuary

### Why in News?

- Too many cattle are robbing the one-horned rhinos of Assam's Pobitora Wildlife Sanctuary, referred to as 'Mini Kaziranga' for similar features, of their nutritious food.

## About

- Location → It is situated in the **flood plains of River Brahmaputra** in the district of Morigaon.
- Pobitora Wildlife Sanctuary has the **highest density** of **one-horned rhinos** in the world and second highest concentration in Assam after Kaziranga National Park.
  - It is often called '**Mini Kaziranga**' due to similar landscape and vegetation.
- In **1987**, Pobitora was **declared** a **wildlife sanctuary**.
- The wildlife sanctuary is home to **endangered one-horned rhinoceros** and the **other mammals such** as Leopard, Leopard cat, Fishing cat, Jungle cat, Feral Buffalo, Wild pigs, Chinese pangolins, etc.
- It is an **Important Bird Area** and home for more than 2000 migratory birds and various reptiles.
- About **72%** of Pobitora Sanctuary consists of wet **savannah of Arundo donax** and **Saccharum**. The **remaining** area is **covered by water bodies**.
  - **Water hyacinth** (an invasive aquatic plant) is a major problem to the area especially to waterfowl, as it forms thick mats on the water surface.
- There are 5 national parks in Assam namely →
  - Dibru-Saikhowa National Park,
  - Kaziranga National Park,
  - Manas National Park,
  - Nameri National Park,
  - Rajiv Gandhi Orang National Park.

## 34. Tso Kar Wetland Complex

### Why in News?

- India has added Tso Kar Wetland Complex in Ladakh as its 42nd Ramsar site, which is a second one in the Union Territory (UT) of Ladakh.



## About

- The Tso Kar Basin is a **high-altitude wetland complex**.
- It consists of **two principal waterbodies**, **Startsapuk Tso**, a freshwater lake and **Tso Kar itself**, a hypersaline lake situated in the Changthang region of Ladakh.
- It is called Tso Kar, meaning **white lake**, because of the **white salt efflorescence** found on the margins due to the evaporation of highly saline water.
- Important Bird Area (IBA): The Tso Kar Basin is an **A1 Category Important Bird Area** (IBA) as per **Bird Life International** and a key staging site in the Central Asian Flyway.
- The site is also one of the most important breeding areas of the **Black-necked Crane** (*Grus nigricollis*) in India.
- This IBA is also the major breeding area for **Great Crested Grebe** (*Podiceps cristatus*), **Bar-headed Geese** (*Anser indicus*), **Ruddy Shelduck** (*Tadorna ferruginea*), **Brown-headed Gull** (*Larus brunnicephalus*), **Lesser Sand-Plover** (*Charadrius mongolus*) and **many other species**.

### 👉 Ramsar convention:

- Ramsar Convention on Wetlands is an **intergovernmental treaty** adopted in **1971** in the **Iranian city of Ramsar**, on the southern shore of the Caspian Sea.
- It came into **force** for India on **1st February, 1982**. Those **wetlands** which are of **international importance** are declared as Ramsar sites.
- The Convention's mission is "the **conservation and wise use of all wetlands** through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world.

### 👉 Montreux Record

- The Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where **changes in ecological character have occurred, are occurring, or are likely to occur** as a result of technological developments, pollution or other human interference. It is **maintained as part of the Ramsar List**.
- At present, two wetlands of India are in Montreux Record:
  - **Keoladeo National Park** (Rajasthan) and
  - **Loktak Lake** (Manipur).
- **Chilika Lake (Odisha)** was placed in the record but later **removed from** it.

### 👉 Also Remember about Tso Moriri

- Tso Moriri or Lake Moriri or "**Mountain Lake**", is a lake in the **Changthang Plateau in Ladakh**.
- It was **notified in 2002 under the List of Ramsar Wetland sites** under the Ramsar Convention.

## 35. BBX11 gene

### Why in News?

- Recently, the Indian Institute of Science Education and Research (IISER) has recognized the BBX11 gene that facilitates the greening of crops.

## About

- The researchers discovered a mechanism where two proteins oppositely regulate the BBX11 gene to maintain optimum ranges of BBX11.
- BBX11 plays a vital role in regulation of the amount of protochlorophyllide synthesized by the plant.

### 👉 Role of BBX11 in the Synthesis of Chlorophyll

- The synthesis of chlorophyll in plants is a lengthy, multi-step process:
- When a seedling emerges from under the soil it must quickly synthesize chlorophyll to start supporting its own growth.
- In order to facilitate quick synthesis of chlorophyll, plants make a precursor of chlorophyll called 'protochlorophyllide' in the dark which glows red when blue light is shone on the plant.
- As soon as the plant comes out into the light from under the soil, light-dependent enzymes convert protochlorophyllide to chlorophyll.
- However, if there is excess of free protochlorophyllide, then exposure to light converts it into molecules that cause 'photobleaching'.
- Thus, it is very important to regulate the amount of protochlorophyllide synthesized by the plant and here comes the vital plant played by the 'BBX11'
- If it is less, plants are unable to efficiently 'green' in order to harvest sunlight. If the amount of protochlorophyllide is more, then plants bleach under the light.
- Significance of the study: This study could have tremendous implications in the agriculture sector in tropical countries like India and can help provide leads to optimise plant growth under stressful and rapidly changing climatic conditions.

## 36. Satkosia Tiger Reserve

### Why in News?

- Recently, the National Tiger Conservation Authority has asked Odisha to submit a status report on the adverse impact of tourism on Satkosia Tiger Reserve.

### About

- Components → Satkosia Tiger Reserve comprises of two adjoining Sanctuaries of central Odisha named as Satkosia Gorge Sanctuary and Baisipalli Sanctuary.
- Establishment → These two sanctuaries together covering an area of 963 sq.km. have been notified as Satkosia Tiger Reserve in 2007.
- Location → It is located in the Angul district of Odisha where the Mahanadi River passes through a 22 km long gorge in the Eastern Ghats mountains. The area is also a part of the Mahanadi elephant reserve.

### 👉 Major Protected Areas in Odisha

- National Parks →**
  - Bhitarkanika National Park
  - Simlipal National Park
- Wildlife Sanctuaries →**
  - Badrama WLS
  - Chilika (Nalaban) WLS
  - Hadgarh WLS
  - Kotagarh WLS
  - Nandankanan WLS
  - Lakhari Valley WLS
  - Gahirmatha (Marine) WLS

- Lying in a **transitional zone** extending between the **Chhota Nagpur Plateau and the Deccan Plateau**, the tiger reserve exhibits endemic life forms of both biotic provinces.
- Flora and Fauna →
- The area supports **moist deciduous forest**, **dry deciduous forest** and **moist peninsular Sal forest**.
- This area is the home for **Tiger**, **Leopard**, **Elephant**, **Gaur**, **Chousingha**, **Sloth bear**, **Wild dog**, **varieties of resident** and **migratory birds**, **reptilian species**, etc.

### 37. New Whale Song

#### Why in News?

- Recently, the researchers have analysed recordings from three locations in the western Indian Ocean and described a new whale song.

#### About New song research

- The researchers suggested the **existence of a population of new whale** that was previously unknown.
- Whales use **songs to communicate and socialize** which can be **characterised as clicks**, **whistles** and **pulsed calls** or a composition of moans, snores, chirps and cries.
- According to the **US National Oceanic and Atmospheric Administration** (NOAA), **whales use clicks** to **navigate** and **identify their surroundings** as the sound bounces off objects, helping whales determine their shapes.
- Can humans hear whale songs? →
  - The whale songs are **typically below 4 kHz in frequency** (human hearing range is between 20 Hz to 20 kHz).
  - Some blue and fin whale songs are so **low in their frequency** that parts may be **inaudible to human ears**.
  - The researchers suggested that whale songs can last **between 6-35 minutes**, and **some individual whales** have been **found to sing for 22 hours**.

#### 👉 Baleen Whale

- All baleen whales have **baleen instead of teeth** which they **use to collect shrimp-like krill**, **plankton** and **small fish from the sea**.
- Baleen whales **feed low on the food chain**, primarily **eating zooplankton** and **small fishes**, which they encounter in large swarms or schools.

### 38. Portulaca laljii

#### Why in News?

- Botanists have discovered a new species of wild Sun Rose from the Eastern Ghats in India.

#### About

- Location → Discovered from **Prakasam district of Andhra Pradesh**.
- Features → It has unique features such as a **tuberous root**, **no hair in its leaf axils**, a **reddish-pink flower**, **prolate-shaped fruits**, and **copper brown seeds without lustre**.

- The **succulent nature** of **tuberous roots** allow the plant to survive on rocky crevices.
- The plants belonging **genus Portulaca** are classified in the **category Sun Rose** because they flower in bright sunshine.
- The genus was described by **Linnaeus in 1753** as a type genus of the flowering plant **family Portulacaceae**.
- Name → Portulaca laljii has been **named to honour** the contribution of **Lal Ji Singh**, an eminent botanist of the Botanical Survey of India.

### 39. Blue Flag beach

#### Why in News?

- Minister for Environment, Forest and Climate Change has virtually hoisted the international blue flags in 8 beaches across the country.

#### About

- India secured the International Blue Flag Certification for these **8 beaches on 6th October 2020**, when an International Jury announced the award at Copenhagen, Denmark.
- These eight beaches are:
  - **Shivrajpur** (Dwarka-Gujarat)
  - **Ghoghla** (Diu)
  - **Kasarkod** and **Padubidri** (Karnataka)
  - **Kappad** (Kerala)
  - **Rushikonda** (AP)
  - **Golden** (Puri-Odisha) and
  - **Radhanagar** (A&N Islands).
- India has also set up an **ambitious target** of getting the **Blue Certification tag for 100 more beaches** in the **next 3 years**.

#### 👉 Blue flag certification:

- What is it? → It is an **international recognition** conferred on beaches that **meet certain criteria of cleanliness** and **environmental propriety**.
- Run by → The certification programme is run by the **international, non-governmental, non-profit organisation FEE** (the Foundation for Environmental Education).
- Criteria → The certification is based on **33 stringent criteria** in four major heads (i) **Environmental Education and Information** (ii) **Bathing Water Quality**, (iii) **Environment Management and Conservation** and (iv) **Safety and Services in the beaches**.
- Headquarters → **Copenhagen, Denmark**.
- Significance → Receiving Blue Flag Certification is an indication of **high environmental and quality standards** and **certified beaches** are considered the **world's cleanest beaches**. Certification will promote tourism to the listed beaches in India.
- India is now the **first country** in the "**Asia-Pacific**" **region** which has now in the **league of 50 "BLUE FLAG" countries** that too in just about 2 years' time.
- **Spain tops** the list with **more than 560** such beaches; Greece and France follow.

- Is Blue Flag certification available only for beaches? → **No**. It can be given to a **beach, marina, or sustainable boating tourism operator**. Basically, the Blue Flag is a trademark.

#### 📌 Beach Environment and Aesthetics Management Services' (BEAMS) program:

- BEAMS (Beach Environment & Aesthetics Management Services) ZM (Integrated Coastal Zone Management) project in order to undertake the **sustainable development of coastal regions** and to **achieve the goal** of having **Blue Flags for 100 beaches** in India.
- Objectives → To **abate pollution in coastal waters, Promote sustainable development** of beach facilities, Protect & conserve coastal ecosystems & natural resources etc.
- This program promotes **beach recreation** in absolute harmony with nature.

## 40. Kolar Leaf Nosed Bat

### Why in News?

- The Karnataka Forest Department, along with the Bat Conservation India Trust (BCIT), is getting prepared to save the Kolar leaf-nosed bat from extinction.

### About

- Scientific Name → **Hipposideros hypophyllus**.
- Geographic Range → It is **endemic to India**. It is presently known only from **one cave in Hanumanahalli village in Kolar district, Karnataka**.
- Protection Status →
  - IUCN Red List: **Critically Endangered**
- Threats →
  - Habitat loss from **land use change, hunting, and stone quarrying in the region**.
  - Till several years ago, the **Kolar Leaf-Nosed Bat** was found in **only two caves in the village of Hanumanahalli**. For reasons that are **still unknown**, the bat became **locally extinct** in one of the two caves.
- Conservation Measures → Karnataka Government has **notified the 30 acres** around the **caves as protected area**. Hence, any development work including **construction of new infrastructure** will need the permission of the National Board for Wildlife.

#### 📌 Bat Conservation India Trust (BCIT)

- BCIT is a **non-profit organization** which was conceived for the protection of bat species in India by protecting their habitat.
- Headquartered → **Bengaluru, Karnataka**.

## 41. Hydrogen as fuel

### Why in News?

- Indian firms such as NTPC Ltd, Indian Oil Corporation, Acme Solar and Greenko are looking at hydrogen as a new business opportunity for extracting energy.

### About

- Hydrogen (H<sub>2</sub>) is an **alternative fuel** that can be produced from diverse domestic resources.
  - It is abundant in our environment and it's **stored in water** (H<sub>2</sub>O), **hydrocarbons** (such as methane, CH<sub>4</sub>), and **other organic matter**.
  - Hydrogen is an **energy carrier** that can be **used to store, move, and deliver energy** produced from other sources.
  - Hydrogen with its **abundance, high energy density, better combustion characteristics, non-polluting nature** etc. has vast advantages over the conventional fuels.
- Hydrogen economy will be a **cornerstone of the future energy system** which can substitute the conventional fuels.
- Types of hydrogen depending upon process of extraction
  - Green hydrogen:** It is derived by electrolysis of water, separating the hydrogen atom within it from oxygen using renewable energy (such as wind, solar or hydro) that eliminates emissions during process.
  - Grey hydrogen:** Hydrogen derived using fossil fuels is called as grey hydrogen.
  - Blue hydrogen:** It is derived from natural gas through the process of steam methane reforming (SMR). SMR mixes natural gas with very hot steam, in the presence of a catalyst, where a chemical reaction creates hydrogen and carbon monoxide.
- The current **global demand of hydrogen is 70 million tons per year**, most of which is being produced from fossil fuels — 76% from natural gas and around 23% from coal, with the remaining from electrolysis of water.
  - In India, hydrogen is being commercially produced in the **fertilizer industry, petroleum refining and chemical industries** and also as a **by-product in chlor-alkali industries**.
  - Cleaner methods of hydrogen production **chiefly constitute electrolysis**, via **chemical** or **photoelectrochemical routes**.

#### Application of hydrogen:

- Fuel cell →** Hydrogen fuel cell systems are used for generating electricity, in vehicular applications (Fuel cell cars, buses, etc.) and portable devices (Laptops, phones, etc.)
- Direct fuel in internal combustion (IC) engine vehicles →** Hydrogen is used as an energy carrier directly in IC engines and turbines in place of fossil fuels or as blended mixture with fossil fuels.
- Chemical industries, Fertilizer industries, refineries →** Hydrogen is used as a raw material in the fertilizer, chemical and petroleum refining industries as it is a fundamental building block for the manufacture of ammonia.



# Science and Technology

## 1. Giant Metrewave Radio Telescope (GMRT)

### Why in News?

- The Giant Metrewave Radio Telescope (GMRT) has been selected as a 'Milestone' facility by the U.S.-based Institute of Electrical and Electronics Engineers (IEEE).

### About GMRT

- What is it? → It is an **array of radio telescopes** operated by the National Centre for Radio Astrophysics (NCRA), a part of the **Tata Institute of Fundamental Research, Mumbai**.
- Objective → To **investigate a variety of radio astrophysical problems** ranging from our nearby Solar system to the edge of the observable Universe.
- Location → **Pune, Maharashtra**.
- Timeline → It was conceived and built under the direction of **Late Prof. Govind Swarup from 1984 to 1996**.
  - At the time it was built, it was the **world's largest interferometric array** offering a baseline of up to 25 kilometres (16 mi).
- Astronomers from all over the world regularly **use this telescope to observe many different astronomical objects** such as HII regions (interstellar atomic hydrogen that is ionized), galaxies, pulsars, supernovae, and Sun and solar winds.

### 👉 IEEE

- IEEE is the **world's largest technical body publishing research** from the fields of engineering and computing.
- Also, it **awards standards** to institutions and organisations involved in these fields.
- It considers an **institution for the milestone** on the **basis of engineering, science, and computational facilities** it offers for not less than 25 years.

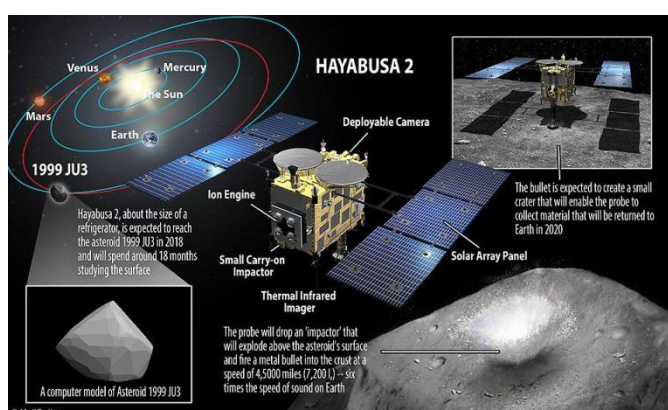
## 2. Hayabusa2

### Why in News?

- Japan's Hayabusa2 spacecraft left the asteroid Ryugu a year ago and is expected to reach Earth and drop a capsule containing the precious samples in southern Australia on December 6.

### About

- Objective → The Hayabusa2 spacecraft is a mission to **analyse the composition of asteroid 1999 JU3 (Ryugu)** and **return samples** from it to Earth using the MASCOT (Mobile Asteroid Surface Scout) lander.
- The mission will **shed light** on the **origins of the solar system**.



- Agencies involved → Hayabusa2 was launched by the **Japan Aerospace Exploration Agency (JAXA)**, the Japanese space agency. German space agency **DLR** has developed the **MASCOT lander** and **CNES supplied** the MicrOmega instrument, antennas and electrical power system.
- Timeline → It was launched on **3 December 2014** and rendezvoused with Ryugu on **27 June 2018**.
- It carried **multiple science payloads** for **remote sensing, sampling**, and **four small rovers** that will investigate the asteroid surface to inform the environmental and geological context of the samples collected.
- Significance of the mission →
  - Ryugu is a **C-type asteroid** – a relic from the early days of the Solar System.
  - Scientists think that C-type asteroids contain **both organic matter**, and **trapped water**, and might have been responsible for **bringing both to Earth**, thereby providing the planet with the materials necessary for life to originate.

### 3. Asteroid 153201

#### Why in News?

- An asteroid named (153201) 2000 WO107, that is more than 800 metre high and over 500 metre wide - bigger than skyscraper Burj Khalifa - flew past earth on November 29.

#### About Asteroid 153201

- The massive asteroid has been **classified as a Near-Earth Asteroid (NEA)**.
- NEA is a **group of comets and asteroids pulled into the orbit** due to the **gravitational forces of nearby planets**, which allows them to enter the Earth's neighbourhood.
- NASA's Jet Propulsion Laboratory has classified it as a '**Potentially Hazardous Asteroid**' due to its predicted close pass with Earth.
- **Burj Khalifa** is the **world's tallest building** with a **height of 829.8 metre** and asteroid 2000 WO107, which was discovered in 2000, has a **diameter is 820 metre**.

### 4. RT- LAMP Technology

#### Why in News?

- Indian Council of Medical Research has recently validated the LAMP technology for COVID-19 testing.

#### About

- RT- LAMP stands for **Reverse Transcription Loop-Mediated Isothermal Amplification** which produces a **high DNA yield** (>10 $\mu$ g).
- This method can produce results in **significantly less time**, which will increase the throughput of labs in India.
- It is named **LUME Screen** nCoV.
- How does it work? →
  - RT-LAMP technology is a **one-step nucleic acid amplification method** to **multiply specific sequences of RNA** of the coronavirus.
  - The RNA is first made into **cDNA** (copy DNA) by the **usual reverse transcription**. Then, the **DNA is amplified by the LAMP technique**.

### Current method

- The current method diagnosis is the real time reverse transcription polymerase chain reaction (**RT-PCR**) test which **detects the presence of viral nucleic acids** in **nasopharyngeal swab samples**.
- But it has **certain shortcomings**.
- The test requires **complex** and **costly equipment**. It requires **extensive training** for potential users.

### Benefits of LAMP over RT-PCR

- The LAMP technology is **superior to the PCR technology**–based COVID-19 kits where specificity is around 95% only.
  - As the specificity and sensitivity of the test is about 95%, there is a possibility of false negative results.
  - The turnaround time is about **10 hours**, so that the **result will be available only by the next day**.
  - In short, the RT-PCR does not have the capacity to keep pace with the increasing demand.
- The **LAMP technology** does **not need laborious preparation** as in the case of RT-PCR. LAMP is cost effective and does not need complex expensive equipment.

## 5. C32-LH2 tank

### Why in News?

- The public sector aerospace manufacturing company, the Hindustan Aeronautics Limited (HAL) delivered the biggest cryogenic propellant tank C32-LH2 to the Indian Space Research Organisation in Bengaluru.

### About C32-LH2 tank

- The C32-LH2 tank is a **developmental cryogenic propellant tank** of **aluminium alloy**.
- It is designed for **improving the payload capability** of GSLV MK-III launching vehicle of ISRO.
- The tank can **load 5755 kg propellant fuel**.
- Significance →
  - Currently, India is **dependent on French Guiana** to launch **heavier communication satellites** (of 5 to 6 tonnes).
  - C32 LH2 will put an end to India's dependence on a foreign country and will boost its **self-reliance**.

### 🔑 Cryogenic fuels

- Cryogenic fuels are fuels that require storage at **extremely low temperatures** in order to **maintain them in a liquid state**.
- These fuels are **used in machinery** that **operates in space** because ordinary fuel cannot be used there due to the very low temperatures often encountered in space, and due to **absence of an environment** that **supports combustion**.
- Cryogenic fuels most often **constitute liquefied gases** such as **liquid hydrogen**.

## 6. ART PARK

### Why in News?

- An AI & Robotics Technologies Park (ARTPARK) set up in Bengaluru will promote technology innovations in AI (Artificial Intelligence)& Robotics leading to societal impact.

### About

- What is it? → It is a **unique not-for-profit foundation** established by **Indian Institute of Science(IISc), Bengaluru** with support from AI Foundry in a public-private model.
- It is **funded from the Department of Science & Technology(DST)**, Govt. of India, under the National Mission on Inter-disciplinary Cyber-Physical Systems (NM-ICPS).
- Aim → To **promote technology innovations in artificial intelligence(AI)** and **robotics** leading to societal impact by executing mission mode R&D projects in healthcare, education, infrastructure, agriculture focusing on problems unique to India.

### National Mission on Inter-disciplinary Cyber-Physical Systems (NM-ICPS)

- The Mission aims to create a **strong foundation and a seamless ecosystem for CPS technologies** by coordinating and integrating nationwide efforts encompassing knowledge generation, human resource development, research, technology and product development, innovation and commercialization.
- **Cyber Physical Systems** (CPS) are a **new class of engineered systems** that integrate computation and physical processes in a dynamic environment. CPS encompasses technology areas of Cybernetics, Mechatronics, Design and Embedded systems, Internet of Things (IoT), Big Data, Artificial Intelligence (AI) and many more.
- It is implemented by the **Department of Science & Technology** (DST) with a total outlay of Rs. 3660 Crore for a **period of five years**.
- The mission will be implemented through a **network of 15 Technology Innovation Hubs** (TIHs), 6 Sectoral Application Hubs (SAHs) and 4 Technology Translation Research Parks (TTRPs).

## 7. Damaru-Inspired Lattice

### Why in News?

- IIT Kanpur Researchers have developed 'Damaru' Inspired Lattice that finds applications in stealth submarines and high-speed trains.

### About

- A lattice is an **ordered array of points** describing the **arrangement of particles** that form a crystal.
- IIT Kanpur has demonstrated that one can get a **wider variation of propagation** and **stop bands** with the use of these **micro-structured hour-glass shaped meta-structure** in the **lattice unit**.
- These meta-structures have application in **electro-magnetic** and **sonic wave absorption** which could create '**invisibility**' of an object in optical or acoustic domain.
- IIT Kanpur has shown the **nature of stiffness** of a **vibrating medium** could be altered by controlling the lattice micro-structure from **regular honeycomb** to **auxetic honeycomb structure**.
- This has wide applications in the **field of vibration isolation** in **high speed trains**, **stealth submarines** and **helicopter rotors**.
- This work is sponsored by a **SPARC project of MHRD**.

## 8. SHINE Trial

## Why in News?

- According to health officials, a four-month long treatment regimen of drugs works as effectively as a six-month one for children with mild cases of TB.

## About SHINE Trial

- What is it? → It stands for **Shorter treatment for minimal tuberculosis(TB) in children** (SHINE).
- Purpose → It is the **first randomised-controlled clinical trial** designed specifically to **test the efficacy** of shortened treatments for children diagnosed with tuberculosis(TB).
- Conducted by → The trial was sponsored by **University College London** (UCL) and **funded by the UK Department of Health, Wellcome Trust** with additional support from the TB Alliance.
- What were the results? → The trial has found **no significant differences** between children who received the shortened four-month long treatment compared to those who received the standard six-month treatment plan.

## 👉 Tuberculosis

- Caused by → **bacteria (Mycobacterium tuberculosis)** that most often affect the lungs.
- Transmission → TB is spread from **person to person through the air**. When people with TB cough, sneeze or spit, they propel the TB germs into the air.
- Symptoms → **Cough with sputum** and **blood at times, chest pains, weakness**, weight loss, fever and night sweats.
- Treatment → TB is a **treatable** and **curable disease**. It is treated with a standard **6-month course** of **4 antimicrobial drugs** that are provided with information, supervision and support to the patient by a health worker or trained volunteer.
- Anti-TB medicines** have been used for decades and strains that are resistant to 1 or more of the medicines have been documented in every country surveyed.
  - Multidrug-resistant tuberculosis (MDR-TB)** is a form of TB caused by bacteria that do not respond to isoniazid and rifampicin, the 2 most powerful, first-line anti-TB drugs. MDR-TB is treatable and curable by using second-line drugs.
  - Extensively drug-resistant TB (XDR-TB)** is a more serious form of MDR-TB caused by bacteria that do not respond to the most effective second-line anti-TB drugs, often leaving patients without any further treatment options.

## 👉 TB Alliance:

- It is a **not-for-profit product development partnership** (PDP), uniquely positioned to leverage a global network of public and private partners to most **efficiently advance TB drug development**.
- Founded → **February 2000**.
- Headquarters location → **New York, United States**.

## 9. Arecibo Observatory

### Why in News?

- Puerto Rico's massive Arecibo observatory, famous for its stellar contributions to astronomy, collapsed.

## About

- Built in → **1963**.
- What is it? → Arecibo Observatory, also known as the **National Astronomy and Ionosphere Center**(NAIC) is an observatory in **Arecibo, Puerto Rico**.
- It is owned by the US **National Science Foundation**(NSF).
- Purpose → The telescope which **received radio waves** from space had been **used by scientists** around the world to **hunt for possible signatures of extraterrestrial life**, study distant planets and find potentially hazardous asteroids
- Significance → It was the **largest single-unit radio telescope** in the world until China's Five-hundred-metre Aperture Spherical radio Telescope (FAST) began operations in 2016.
- Contributions → The observatory is responsible for **groundbreaking discoveries** in the field of astronomy. This includes discovering the **first planets outside our solar system**, **ice on the poles of Mercury** and even evidence of the very **first binary pulsar** that led to a Nobel Prize in Physics.

## 10. HL-2M Tokamak

### Why in News?

- China successfully powered up its “artificial sun” nuclear fusion reactor for the first time marking a great advance in the country’s nuclear power research capabilities.

## About

- What is it? → It is **China’s largest** and **most advanced nuclear fusion experimental research device** that can potentially unlock a powerful clean energy source.
- Name of the mission → **Experimental Advanced Superconducting Tokamak** (EAST).
- Location → **Sichuan province**
- It uses a **powerful magnetic field** to **fuse hot plasma** and can reach temperatures of **over 150 million degrees Celsius** approximately ten times hotter than the core of the sun.
- Hence, the reactor is often called an “**artificial sun**” on account of the enormous heat and power it produces.

### 👉 Nuclear Fusion

- It is considered the **Holy Grail of energy** and is what **powers our sun**.
- It **merges atomic nuclei** to **create massive amounts of energy** — the opposite of the fission process used in atomic weapons and nuclear power plants which splits them into fragments.
- Advantages of Fusion: Unlike fission, fusion emits **no greenhouse gases** and carries **less risk of accidents** or the theft of atomic material. But achieving fusion is both extremely difficult and prohibitively expensive.

## 11. Australian Square Kilometre Array Pathfinder

### Why in News?

- A powerful new telescope ASKAP, in Australia has mapped vast areas of the universe in record-breaking time, revealing a million new galaxies and opening the way to new discoveries.

## About



- ASKAP is a telescope designed **over a decade ago** and located about **800 km north of Perth**.
- It became **fully operational** in **February 2019** and is currently conducting **pilot surveys of the sky** before it can begin large-scale projects from 2021 onward.
- ASKAP surveys are designed to **map the structure and evolution of the Universe**, which it does by observing galaxies and the **hydrogen gas** that they contain.
- One of its most important features is its **wide field of view**, because of which it has been able to **take panoramic pictures of the sky** in **great detail**.
- The telescope uses **novel technology developed by CSIRO- the Australian space agency**, which is a kind of a "**radio camera**" to achieve high survey speeds and consists of **36 dish antennas**, which are **each 12m in diameter**.
- The survey team has been able to observe over **83 per cent of the sky visible from ASKAP's site** in **Western Australia**.
- The present Rapid ASKAP Continuum Survey (**RACS**) taken by the ASKAP telescope is like a "**Google map**" of the Universe.

## 12. Quantum Supremacy

### Why in News?

- China Claims Quantum Supremacy With Computer 10 Billion Times Faster Than Google's Prototype.

### About

- It is a term **proposed in 2012** by **John Preskill**, professor of theoretical physics at the California Institute of Technology.
- It describes the point where **quantum computers can do things** that classical computers cannot.
- **Superposition and entanglement** are what give **quantum computers** the ability to process **so much more information so much faster**.
- **Differences between a standard computer and a quantum computer:**
  - A classical computer performs calculations **using bits that is 0 representing off and 1 representing on**. It uses transistors to process information in the form of sequences of zeros and ones called computer binary language. More transistors more processing ability.
  - A quantum computer **uses the laws of quantum mechanics**. Here, different states can be achieved in particles due to their internal angular momentum called spin. The **two states 0 and 1** can be represented in the spin of the particle.
  - Thus, in a classical computer information is **expressed through single number either 0 or 1**.
  - A quantum computer **uses qubits** which is **described as a 0 and 1** at the **same time** giving us more processing power.
- Potential → While still in its **infancy**, **quantum computing** is seen as the key to **radically improving** the processing speed and **power of computers**, enabling them to simulate large systems and drive advances in physics, chemistry and other fields.

## 13. The Cancer Genome Atlas 2020 Conference

### Why in News?

- The Ministry of Science & Technology has inaugurated the 2nd Cancer Genome Atlas (TCGA) 2020 Conference.

## About

- What is it? → It is a **landmark cancer genomics program** that molecularly characterized over 20,000 primary cancer and matched normal samples spanning 33 cancer types.
- Started in 2005 by the US-based **National Cancer Institute** (NCI) and the **National Human Genome Research Institute** (NHGRI)
- TCGA generated a **huge amount of genomic, epigenomic, transcriptomic, and proteomic data**.
- This data has led to **improvements** in the **ability to diagnose, treat, and prevent cancer**.
- On similar lines, the establishment of an '**Indian Cancer Genomics Atlas (ICGA)**' has been initiated by a consortium of key stakeholders in India led by Council Of Scientific And Industrial Research, Government of India in which several government agencies, cancer hospitals, academic institutions and private sector are partners.
  - Aim: To **improve clinical outcomes** in cancer and other chronic diseases.

## Other Similar Missions:

### 👉 Genome India:

- Its aim is to ultimately **build a grid of the Indian “reference genome”**, to fully understand the type and nature of diseases and traits that comprise the diverse Indian population.
- The mega project hopes to form a grid after **collecting 10,000 samples** in the **first phase** from across India, to arrive at a representative Indian genome.
- What is Genome? → Genome is **all genetic material of an organism**. It consists of DNA (or RNA in RNA viruses).

### 👉 IndiGen Genome Project:

- The initiative was **implemented by the CSIR-Institute of Genomics and Integrative Biology (IGIB), Delhi and CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad**.
- The IndiGen programme aims to undertake **whole genome sequencing of thousands of individuals** representing diverse ethnic groups from India.

## 14. Lab Grown Meat

### Why in News?

- The Singapore Food Agency (SFA) has approved the sale of a lab-grown meat product. This is the first time cultured meat has been cleared for sale anywhere in the world.

## About

- Lab Grown Meat or Cultured meat is **meat produced by in vitro cell culture of animal cells** instead of from slaughtered animals.
- How is lab-grown different from plant-based meat? →
  - The plant-based meat is **made from plant sources** such as soy or pea protein while cultured meat is **grown directly from cells in a laboratory**.
  - In terms of **cellular structure**, cultured or cultivated meat is the **same** as conventional meat — except that **cultured meat does not come directly from animals**.

- Benefits →
  - Cultivated meat could **reduce land use** by more than 95%;
  - It could **reduce climate change emissions** by 74-87% and nutrient pollution by 94%;
  - The **risk of contamination** by pathogens such as salmonella and E coli is significantly **reduced**;
  - It does **not require antibiotics** thereby reducing the threat posed to public health by growing antibiotic resistance.

## 15. LiDAR- Light Detection and Ranging

### Why in News?

- Indian Railways to Use Laser Technology To Carry Out Ground Survey For Delhi-Varanasi Bullet Train Project.

### About LiDAR

- What is it? → It is a **remote sensing method** that **uses light** in the form of a **pulsed laser** to measure ranges (variable distances) to the Earth.
- Working → These light pulses combined with other data recorded by the **airborne system generate precise, three-dimensional information** about the shape of the Earth and its surface characteristics.
- Instrument → LiDAR instrument principally consists of a **laser**, a **scanner**, and a **specialized GPS receiver**. Airplanes and helicopters are the most commonly used platforms for acquiring LiDAR data over broad areas.
- Applications → LiDAR is used for **agriculture, hydrology and water management systems, geology-related applications** and also in **archaeology**.
- Challenges with LiDAR →
  - **Can't perform well in fog, rain, snow** and **dusty weather**.
  - **Struggles to detect a glass wall or door**, which is why smartphone manufacturers and self-driving cars makers use LiDAR along with secondary cameras and sensors.

## 16. Geminids meteor shower

### Why in News?

- The Geminids meteor shower, believed to be the strongest of the year, is active from December 4-December 20, with December 13 and 14 considered to be the best nights for viewing these meteor showers.

### About

- The Geminids meteor showers are **unique** because their **origin does not lie in a comet**, but what is believed to be an **asteroid** or an **extinct comet**.
- The Geminids emerge from **3200 Phaethon**, which meteor scientists consider to be an asteroid.
- NASA says that Geminids travel at a speed of **78,000 mph** or **35 km/s**, which is over **1000 times faster than a cheetah**.
- Meteors are best **visible on a cloudless night** and when the **Moon is not extremely bright**.

### What Are the Differences Between An Asteroid, Comet, Meteoroid, Meteor and Meteorite?

- Asteroid → A relatively **small, inactive, rocky body orbiting the Sun**.
- Comet → A relatively **small, at times active, object** whose **ices can vaporize in sunlight** forming an atmosphere (coma) of dust and gas and, sometimes, a tail of dust and/or gas.

- Meteoroid → A **small particle from a comet** or **asteroid** orbiting the Sun.
- Meteor → The **light phenomena** which results when a meteoroid enters the Earth's atmosphere and vaporizes; a shooting star.
- Meteorite → A meteoroid that **survives its passage** through the **Earth's atmosphere** and **lands upon the Earth's surface**.

## 17. Mucormycosis Fungal Infection

### Why in News?

- Recently, doctors have witnessed increased cases of Covid-19 triggered Mucormycosis.

### About

- Mucormycosis is also called **Black Fungus** or **Zygomycosis** and is a serious but **rare fungal infection** caused by a **group of molds** called **mucormycetes**.
- The symptoms are **face numbness**, **one-side nose obstructions** or **swelling of eyes**, or **pain**.
- Transmission →
  - It occurs **through inhalation**, **inoculation**, or **ingestion of spores** from the environment.
  - Mucormycosis does **not spread between people or between people and animals**.
  - It usually occurs in people who have **health problems** or **take medicines** that **lower the body's ability to fight germs and sickness**.
- Treatment →
  - It needs to be treated with **prescription antifungal medicine** to prevent mucormycosis and other mold infections.
  - Often, mucormycosis **requires surgery** to **cut away the infected tissue**.
- Prevention and Cure →
  - There is **no vaccine** to prevent mucormycosis and it is **difficult to avoid breathing in fungal spores** because the fungi are common in the environment.
  - **Early detection** can **prevent loss of eyesight, nose or jaw through clinical intervention**.

## 18. Plasmodium Ovale

### Why in News?

- A not very common type of malaria, Plasmodium Ovale, has been identified in a jawan in Kerala.

### About Malaria

- Malaria is caused by the bite of the **female Anopheles mosquito** if the mosquito itself is infected with a **malarial parasite**.
- There are **five kinds of malarial parasites** — Plasmodium falciparum, Plasmodium vivax (the commonest ones), Plasmodium malariae, Plasmodium ovale and Plasmodium knowlesi.
- Therefore, to say that someone has contracted the **Plasmodium ovale type of malaria** means that the **person** has been **infected by that particular parasite**.
- Malaria is treated with **prescription drugs** to kill the parasite. **Chloroquine** is the preferred treatment for any parasite that is sensitive to the drug.

### 📌 Plasmodium Ovale

- P ovale rarely causes **severe illness** and there is **no need for panic**.
- Symptoms → Symptoms include **fever for 48 hours**, **headache** and **nausea**, and it **rarely causes severe illness**.
- Similar to P vivax → P ovale is very **similar to P vivax** and the **treatment modality** is the same as it is for a person infected with P vivax.
- P ovale is **no more dangerous** than getting a viral infection.
- It is termed ovale as about **20% of the parasitised cells** are **oval in shape**.

### 📌 Burden of Malaria in India

- In 2018, the National Vector-borne Disease Control Programme (NVBDCP) estimated that approximately **5 lakh people suffered** from malaria.
- **63%** of the cases were of **Plasmodium falciparum**.
- The recent **World Malaria Report 2020** said cases in India **dropped** from about **20 million in 2000 to about 5.6 million in 2019**.

## 19. NB-IoT Network

### Why in News?

- Skylotech India has partnered with BSNL to launch a satellite-based narrowband IoT network in India.

### About

- This new 'Made in India' Solution, which is **indigenously developed by Skylo**, will **connect with BSNLs satellite**- ground infrastructure and provide PAN-India coverage, including Indian seas.
- The coverage will be **so vast** that it will **not leave any dark patch** within the boundary of India.
- This is the **world's first satellite-based NB-IoT network**.
- This new technology supports the **Department of Telecom** and **NITI Aayogs plan** of **bringing indigenous IoT connectivity** to India's core sectors.
- Examples of where this technology has **already been tested** successfully include, **Indian Railways**, **fishing vessels**, and **enabling connected vehicles across India**.
- A **small, smart, incredibly rugged box**, the Skylo '**User Terminal**' **interfaces** with sensors and transmits data to the Skylo Network and into people's hands.

### 📌 Internet of Things (IoT)

- The IoT describes the **network of physical objects**—"things"—that are embedded with **sensors**, **software**, and **other technologies** for the purpose of connecting and exchanging data with other devices and systems over the Internet.
- The definition of the IoT has evolved due to the **convergence of multiple technologies**, **real-time analytics**, **AI**, **sensors**, and **embedded systems**.
- In the consumer market, IoT technology is most synonymous with products pertaining to the concept of the "**smart home**", including **devices and appliances**.

- It **supports one** or **more common ecosystems** and can be **controlled via devices** associated with that ecosystem, such as smartphones and smart speakers e.g. **Alexa**.

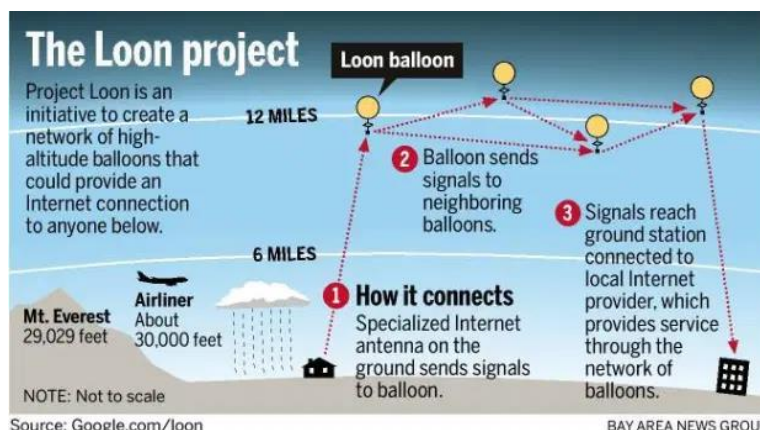
## 20. Project Loon

### Why in News?

- Project Loon has set a new record for the longest stratospheric flight by staying in air for 312 days.

### About

- It is a project **under a Google subsidiary**.
- It consists of a **network of stratospheric balloons** designed to bring **Internet connectivity to rural and remote communities worldwide**.
- The project involves **helium-filled balloons** that remain in the stratosphere and create **aerial wireless networks**. The project has **collaborated with several countries** and **their technology partners** to provide internet connectivity.



### 👉 Whitespace Internet

- It uses a **part of the radio spectrum** known as White spaces.
- White Space refers to the **unused broadcasting frequencies** in the **wireless spectrum**. These spaces can provide **broadband internet access** that is similar to that of **4G mobile**.
- Microsoft** is providing whitespace internet **to unserved areas** of several countries.

### 👉 Starlink

- It is a **satellite internet constellation** being constructed **by SpaceX** with the aim to bring internet access to rural and underserved areas around the world.

## 21. Great Conjunction

### Why in News?

- After nearly 400 years, Saturn and Jupiter will be brought closest in the night sky by an astronomical event called the “great conjunction” and popularly referred to as the “Christmas Star”.

### About

- What is Conjunction? → A conjunction is **not unique to Saturn and Jupiter** however, it is the name given to any event where planets or asteroids appear to be **very close together** in the sky **when viewed from the Earth**.
- Astronomers use the word “**great**” for the conjunction of Jupiter and Saturn **because of the planets’ sizes**.

- The “Great Conjunction” happens **once in about 20 years** because of the time each of the planets take to orbit around the Sun.
- Time taken to orbit around the sun → **Jupiter** takes **roughly 12 years to complete one lap** around the Sun and **Saturn takes 30 years** (Saturn has a larger orbit and moves more slowly because it is not as strongly influenced by the Sun’s gravitational force as planets that are closer to the Sun).

#### 👉 Jupiter

- It is the **fifth planet** from the Sun and the **largest** in the Solar System.
- Jupiter’s iconic **Great Red Spot** is a giant storm bigger than Earth that has raged for hundreds of years.

#### 👉 Saturn

- It is the **sixth planet** from the Sun and the **second largest** planet in the solar system.
- Adorned with **thousands of beautiful ringlets**, Saturn is **unique among the planets**.

## 22. SolarWinds Hack

### Why in News?

- The ‘SolarWinds hack’, a cyberattack recently discovered in the US, has emerged as one of the biggest ever targeted against the US government, its agencies and several other private companies.

### About

- This is being called a ‘Supply Chain’ attack: Instead of directly attacking the federal government or a private organisation’s network, the hackers **target a third-party vendor**, which **supplies software to them**.
- In this case, the target was an IT management software called **Orion**, supplied by the Texas-based **company SolarWinds**.
- Orion has been a dominant software from SolarWinds with clients, which include **over 33,000 companies**. SolarWinds says **18,000 of its clients have been impacted**.
- The hackers gained “**access to victims via trojanized updates to SolarWinds**’ Orion IT monitoring and management software. Once installed, the malware gave a backdoor entry to the hackers to the systems and networks of SolarWinds’ customers.

## 23. Shigella Infection

### Why in News?

- North Kerala has been put on high alert after an 11-year-old boy died and 20 suspected cases of shigella bacterial infection were reported.

### About

- What is it? → Shigellosis is an **infectious disease** caused by a **group of bacteria** called **Shigella**.
- Symptoms → Most who are infected with Shigella develop **diarrhoea**, **fever**, and **stomach cramps** starting a day or two after they are exposed to the bacteria.



- Transmission → **Contaminated food, water** are the **source of the infection**. The bacteria spreads not only through surfaces — **touching an infected surface** and **then touching the mouth** — but also from eating food prepared by someone carrying the infection.
- Treatment → It is generally done through **antibiotics** which can **shorten the duration of the illness**.
- Susceptible Group → Children under **age 10** are **most likely to get** shigella infection but it can occur at any age.
- Precautions → Doctors advise frequently **washing hands with soap** and **running water** to avoid infections such as Shigella.

## 24. Intentional genomic alteration (IGA) and GalSafe pigs

### Why in News?

- The US Food and Drug Administration (FDA) approved a first-of-its-kind intentional genomic alteration (IGA) in a line of domestic pigs referred to as GalSafe pigs.

### About Intentional genomic alteration

- It means making **specific changes to the genome of the organism** using modern molecular technologies that are popularly referred to as “**genome editing**” or “**genetic engineering**”.
- Purpose → Such changes in the DNA sequence of an animal may be carried out for research purposes to **produce healthier meat for human consumption** and to **study disease resistance in animals** among other reasons.
- Difference → The FDA maintains that the only difference between an animal with an IGA and one that does not have an IGA is that the IGA gives them a new trait or characteristic such as **faster growth** or **resistance to certain diseases**.
- Genome editing → It is a **type of genetic engineering** in which **DNA is inserted, deleted, modified** or **replaced** in the genome of a living organism.
- Editing DNA can lead to changes in physical traits like eye color and disease risk.

### 👉 IGA in GalSafe pigs

- The IGA in GalSafe pigs to **eliminate a type of sugar** found in mammals called **alpha-gal**.
- This sugar is present on the surface of these **pigs’ cells** and when they are used for products such as **medicines** or **food** (the sugar is found in red meats such as beef, pork and lamb), the sugar makes some people with **Alpha-gal Syndrome (AGS)** more **susceptible to** developing **mild to severe allergic reactions**.
- Since GalSafe pigs may potentially be used to **produce human medical products**, IGA will help eventually free these products from detectable **alpha-gal sugar**, thereby protecting their human consumers from potential allergies.
- GalSafe pigs may be **used to make** the **blood-thinning drug heparin**.

## 26. Mock egg

### Why in News?

- Recently, a team of scientists from IIT Delhi won an innovation contest (Innovate 4 SDG) organised by the United Nation Development Programme (UNDP) Accelerator Lab India for their innovation of a “plant based mock egg”.

## About

- It has been **developed from very simple farm based crop proteins**, which not only looks and tastes like an egg but is also **very close in nutritional profile** to **poultry eggs**.
- The development of the mock egg **meets the protein needs** of the **diet-specific, health conscious, vegan and vegetarian people**.
- It aims to **address** the longstanding battle for **malnutrition** and **clean protein food for people**.
- This innovation addresses **SDG 2 and 3** (zero hunger and good health and well-being).
- The award includes a **sum of \$5000**.

## 27. DigiBoxx

### Why in News?

- NITI Aayog launched DigiBoxx India's own online cloud storage service.

## About

- What is it? → It is a **Made-in-India digital asset management, file sharing service** and **cloud storage platform**.
- The platform is the first of its kind '**Make in India, Store in India**' digital asset management SaaS product that is in line with the **country's national security** and **data localisation priorities**.
- The service is priced competitively, as the company is **offering free 20GB cloud storage** and **100GB space per month** to those **who pay just Rs 30**.
- Current availability of DigiBoxx → It is currently available **for Android users only**. However, the company has confirmed that the service will soon be made available to iOS users as well.
- Security features →
  - According to the company, the service has **connection encryption** and all the files stored on its platform are **encrypted** at a database level.
  - The company confirmed that all the data is being **stored in the country**.
  - The service claims to **offer support for SSL** (Secure Sockets Layer) **file encryption**.

## 28. Ammonia

### Why in News?

- Two persons died and several took ill in a major ammonia gas leakage at the Indian Farmers Fertilizer Cooperative Limited (IFFCO) unit at Prayagraj.

## About

- It consists of **hydrogen and nitrogen**. In its aqueous form, it is called **ammonium hydroxide**.
- This **inorganic compound** has a **pungent smell**. In its concentrated form, it is **dangerous and caustic**.
- Ammonia is **lighter than air** with a density of 0.769 kg/m<sup>3</sup> at STP.
- Ammonia is **stored for industrial use in liquid form** under high pressure or in gaseous form **at low temperature**.

- Ammonia, which is highly **soluble in water**, is **found in soil, air, and water**; it is **naturally present in the body** and secreted by the kidneys to neutralise excess acid. However, it is **highly diluted** when in the **environment and does not affect the human body** to a **noticeable level**.
- Uses of ammonia → Ammonia is critical in the **manufacturing of fertilizers**, and is one of the largest-volume **synthetic chemicals** produced in the world.
  - **More than 80 per cent** of ammonia made is **consumed in the manufacturing of fertilizer**, and most of the remainder goes into the production of formaldehyde.
- It interacts immediately upon contact with moisture present in the skin, eyes, oral cavity, and respiratory tract to form ammonium hydroxide, which is **very caustic and disrupts the cell membrane lipids**, **ultimately leading to cellular destruction**.

## 29. Antimatter

### Why in News?

- Why the universe has less ‘antimatter’ than matter? This newscard is an excerpt from the original article published in DownToEarth.

### About

- The **matter** is **made up of atoms**, which are the basic **units of chemical elements** such as hydrogen, helium or oxygen.
- The sub-atomic particles of **antimatter** have **properties opposite those of normal matter**.
- The **electrical charge** of those particles is **reversed**.
- Antimatter was created along with matter **after the Big Bang**, but antimatter is **rare in today’s universe**.
- Scientists believe that in the **very hot** and **dense state shortly** after the **Big Bang**, there must have been **processes** that **gave preference to matter over antimatter**.
- This created a **small surplus of matter**, and as the **universe cooled**, all the **antimatter was destroyed**, or **annihilated**, by an equal amount of matter, leaving a tiny surplus of matter.

## 30. Naegleria fowleri

### Why in News?

- A deadly brain-consuming amoeba — Naegleria fowleri — is widely spreading from the southern states of United States of America (USA) towards the northern states.

### About Naegleria fowleri

- It is a **free-living microscopic amoeba**.
- It can cause a rare and devastating infection of the brain called **primary amebic meningoencephalitis (PAM)**.
- The amoeba is commonly found in **warm freshwater and soil**.
- Naegleria fowleri usually infects people when **contaminated water enters the body through the nose**.
- Once the amoeba enters the nose, it **travels to the brain**, where it causes **PAM**, which is **usually fatal**.
- Infection typically occurs when **people go swimming** or **diving** in **warm freshwater places**, like lakes and rivers.

- In **very rare instances**, Naegleria infections may also occur **due to contaminated water** from other sources.

### 31. Leprosy

#### Why in News?

- Himachal Pradesh is doing a door-to-door surveillance campaign to screen the state's entire population for symptoms of leprosy.

#### About

- It is **chronic, curable infectious disease** caused by the **bacterium Mycobacterium leprae**.
- Affected Organs → It **affects the skin**, the **peripheral nerves**, **mucosal surfaces** of the upper respiratory tract, and eyes.
- Symptoms include → **light-coloured** or **red skin patches with reduced sensation**, numbness and weakness in hands and feet.
- Transmission → The **exact mechanism** is **not known**. It is **transmitted via droplets**, from the nose and mouth.
- Claw hands, drop foot, eye damage, skin nodules, lesions and ulcers are some of the visible impairments associated with leprosy.
- Treatment → The disease is **treatable** with **multi-drug therapy** within 6-12 months, which combines three drugs to kill the pathogen and cure the victim.
- India officially became **leprosy free in 2005**.

### 32. Tau Bootes

#### Why in News?

- An international team of scientists has collected the first possible radio signal from a planet beyond our solar system, emanating from an exoplanet system about 51 light-years away.

#### About

- It is a **star-system hosting** a so-called **hot Jupiter**, a gaseous giant planet that is very close to its own sun.
- Tau Bootes is an **F-type main-sequence star** approximately 51 light-years away in the constellation of Bootes.
- It is a **binary star system**, with the secondary star being a red dwarf.
- Using the **Low Frequency Array (LOFAR)**, a radio telescope in the Netherlands, the researchers uncovered **emission bursts from the Tau Bootes**.
- The radio detection opens up a **new window** on **exoplanets** and provides a **novel way** to **examine alien worlds** that are tens of light-years away.
- An F-type main-sequence star (F V) is a **main-sequence, hydrogen-fusing star of spectral type F** and **luminosity class V**.

### 33. India's first-ever driverless train

#### Why in News?

- The Prime Minister of India has flagged off the country's first 'driverless' metro in Delhi.

## About

- What is it → It will be **rolled out on the 38-km Line 8 or Magenta Line of the Delhi Metro** which has a 390-km-long network spread across the national capital and adjoining cities.
- Significance → After this inauguration, **Delhi Metro Rail Corporation (DMRC)** has entered the elite league of **7% of the world's Metro networks** which can operate without drivers.
- How will it benefit the citizens? →
  - **Operational flexibility & efficiency**
  - Inspection/testing to be done remotely **ensuring Higher reliability with no human intervention**
  - Improved safety and **quality of service**
  - Save Train Operators' time & effort and improve the quality of his/her job.
- Driverless technology → Driverless technology does **not mean that there will be no driver** – at least that is not going to be the case to begin with. It does mean though that **slowly the role of the driver will get more and more limited** as the **technology and its systems expand**.

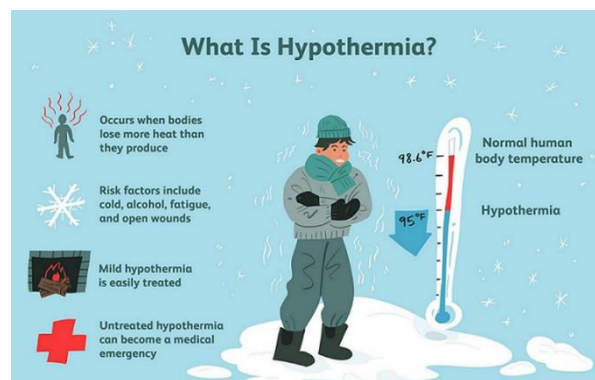
## 34. Hypothermia

### Why in News?

- Predicting a severe cold wave in the national capital and several other parts of North India, the Indian Meteorological Department (IMD) urged residents of India's northernmost states to protect themselves from the biting cold by avoiding alcohol.

## About

- Hypothermia is a severe medical condition where the **body loses heat** before it can generate it, resulting in a **dangerously low body temperature**.
- While **normal body temperature** lies at around **37 degrees Celsius**, the body temperature of a person suffering from hypothermia **drops to below 35 degrees Celsius**.
- **Heavy alcohol consumption** is often linked to an **increased risk** of hypothermia and other conditions linked to extreme cold weather.
- **Alcohol** can **decrease the core temperature of the body** and increase the risk of hypothermia during cold exposure.



## 35. C. V Raman

### Why in News?

- Recently Chandrasekhara Venkata Raman was remembered on his 50th death anniversary.

## About

- He was born at Tiruchirappalli in Tamil Nadu and worked as a **civil servant** in the Indian Finance Department in Calcutta.
- He founded the **Indian Journal of Physics in 1926**, **Indian Academy of Sciences in 1933** and established **Raman Institute of Research at Bangalore in 1948**.
- He was awarded with the **Nobel Prize for Physics in 1930** for the discovery of the **Raman effect** and **Bharat Ratna in 1954**.
- India celebrates **National Science Day on 28 February** of every year to commemorate the discovery of the Raman effect in 1928.

### Contributions to physics by C. V. Raman

- **Raman effect/ Raman scattering** → In 1922 he published his work on the '**Molecular Diffraction of Light**', which ultimately led to his discovery of 'Raman Effect' in 1928.
  - Light consists of particles called **photons**; whose energy is **directly proportional to the frequency with which they travel**.
  - When they **strike molecules** in a **medium at high speeds**, they bounce back and scatter in different directions depending on the angle with which they hit the molecules, is known as **Raman effect**.
  - Daylight interacts with the gases in Earth's atmosphere and scatters, instead of coming back straight to our eyes from the sun.
    - **Blue light is scattered most**, which means that it involves our eyes from all over within the sky, thus the sky appearance blue.
    - **Yellow and red light are scattered least**, thus we tend to typically see a yellow sun, and generally a red sun.
- **Raman spectroscopy** → It is used to better understand the composition of the structures, crystallographic orientation of the sample and the change in vibrational frequency for chemical bond in Raman effect.
  - It is used in many varied fields where **non-destructive**, **microscopic**, **chemical analysis** and **imaging is required**. ○ It can provide **key information easily and quickly**.
  - It can be used to **rapidly characterise the chemical composition and structure of a sample**, whether solid, liquid, gas, gel, slurry or powder.
  - Raman spectroscopy has been used to **monitor manufacturing processes in the petrochemical and pharmaceutical industries**.
  - It is additionally utilized in medication to research living cells, tissues and even in detection of cancers - while not inflicting damage.
- **Scattering by ocean** → He used a **prism**, **miniature optical instrument** and **optical device** to review the sky and therefore the ocean and found that the ocean was scattering light.
- This, led to **oppose the view of Lord Rayleigh**, who said sea's colour is solely a mirrored image of the sky's colour.

# Geography

## 1. Mount Ili Lewotolok

### Why in News?

- Recently, Chinese authorities have given the go ahead for a Chinese hydropower company to construct the first downstream hydropower project on the lower reaches of the river Brahmaputra.

### About

- Location → It is a volcano located in eastern Indonesia erupts.
- The **5,423-meter (17,790-foot) mountain** is one of the three currently erupting in Indonesia along with Merapi on Java Island and Sinabung on Sumatra Island.

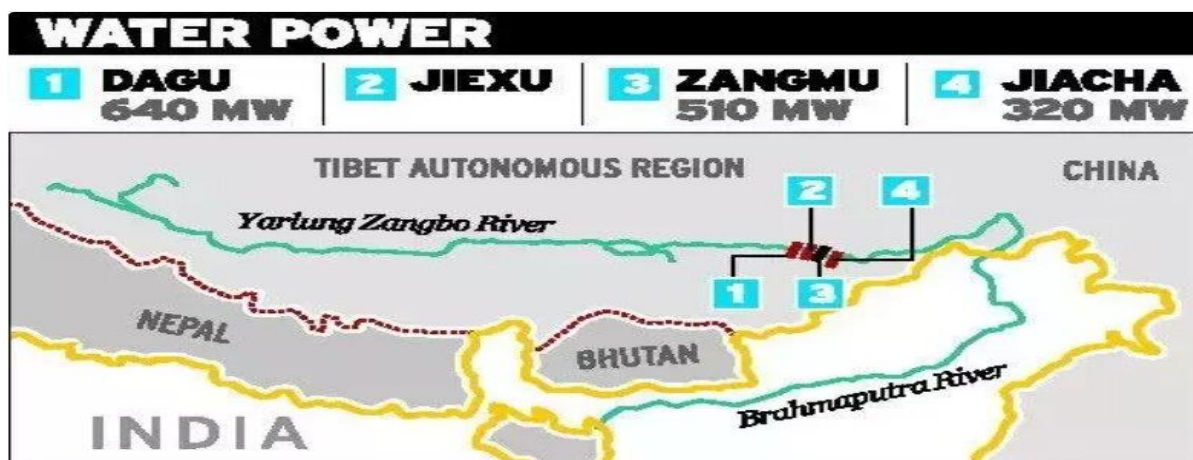
## 2. China's New Dam on Brahmaputra

### Why in News?

- Pakistan is planning to accord provincial status to the “so-called Gilgit-Baltistan”.

### About China's Previous Projects

- In 2015, China operationalised its first hydropower project at Zangmu in Tibet, while three other dams at Dagu, Jiexu and Jiacha are being developed, all on the upper and middle reaches of the river.



### 📌 Brahmaputra:

- Source → Chemayungdung glacier (Kailas Range) at an elevation of about 5,150 m. Its source is very close to the sources of Indus and Satluj.
- It enters India west of Sadiya town in Arunachal Pradesh.
- Mariam La separates the source of the Brahmaputra from the Manasarovar Lake.
- It is **2,900 km** in length.
- Tributaries → Dibang, Lohit, Siang, Burhi Dihing, Tista and Dhansari.
- It is a perennial river and has several peculiar characteristics due to its geography and prevailing climatic conditions.



- It is **flooded twice annually**. One flood is caused by the melting of the Himalayan snow in summer and the other due to the monsoon flows.
- The frequency of these **floods have increased** and are **devastating due to climate change** and its impact on high and low flows.
- The river is in **itself dynamic** as **frequent landslides** and **geological activity force** it to change course very often.

### 3. Cyclonic Storm 'Burevi'

#### Why in News?

- The Deep Depression over southwest Bay of Bengal moved west-north westwards with a speed of 09 kmph during past six hours, intensified into Cyclonic Storm 'Burevi'.

#### About

- The India Meteorological Department (IMD) announced that a cyclone **brewing in the Bay of Bengal** is likely to **affect Tamil Nadu and Kerala**, less than a week after cyclone Nivar wreaked havoc in the southern states.
- The cyclone will **cross the Sri Lanka coast** on **December 2** and bring **heavy rain over Tamil Nadu and Kerala**.

### 4. Bhashan Char Island

#### Why in News?

- Recently, Bangladesh has transported more than 1,600 Rohingya refugees to a low-lying Bhashan Char island in the first phase of a controversial planned relocation of 1,00,000 people.

#### About

- Bhashan Char also known as **Char Piya**, is an **island in Hatiya, Bangladesh**.
- The island was **formed with Himalayan silt** in **2006**.
- It is **underwater from June to September** annually because of the monsoon, and it has **no flood fences**.
- In June 2015, the Bangladeshi government suggested **resettling Rohingya refugees** on the island **under its Ashrayan Project**.
- The proposal was characterized by the UN Refugee Agency as **"logistically challenging"**.
- Bhashan Char is a **flood-prone island** that emerged from the sea 20 years ago.
- Concerns: (1) It is **flood-prone island**; (2) **Vulnerable to frequent cyclones**; (3) Too **small to occupy** and nurture the Rohingya population; (4) **Chronic overcrowding** in camps.



### 5. Mount Everest

#### Why in News?

- Nepal and China have announced the revised height of Mount Everest as 8,848.86 metres. The new height is 86 cm more than the previous measurement.

### About Mount Everest

- Everest is also known as **Sagarmatha** in Nepal and **Mount Qomolangma** in China.
- The mountain lies on the **border between Nepal and Tibet** and the summit can be accessed from both sides.
- It gets its English name from **Sir George Everest**, a colonial-era geographer who served as the Surveyor General of India in the **mid-19th century**.
- The new height of **8,848.86 meters** replaced the long-associated 8,848 metre-height, which was, as per a measurement carried out by the **Survey of India in 1954**.
- It was **first scaled** in **1953** by the **Indian-Nepalese Tenzing Norgay** and **New Zealander Edmund Hillary**.
- Why is the height being revised?
  - The height of the summit, however, is known to **change** because of tectonic activity, such as the **2015 Nepal earthquake**.
  - Its measurement over the decades has also **depended on who was surveying**.



### 👉 First Survey of Everest:

- The first effort was carried out in **1847** by a **team led by Andrew Waugh**, Surveyor General of India.
  - The survey was based on **trigonometric calculations** and is known as the **Great Trigonometric Survey of India**.
- The team discovered that '**Peak 15**' (as Mount Everest was referred to then) was the **highest mountain**, contrary to the then-prevailing belief that Mount Kanchenjunga (8,582 m and the 3rd highest peak in the world now) was the highest peak in the world.
  - Mount K2**, at **8,611** metres above sea level, is the **second highest mountain** in the world.

## 6. Western Sahara Dispute

### Why in News?

- Morocco agreed to become the fourth Arab nation to normalise relations with Israel in as many months, as part of a deal in which the US agreed to recognise its claim over the disputed Western Sahara region.

### About

- A former Spanish colony, Western Sahara is a **vast, arid region in northwest Africa**.
- It is mineral rich: home to **abundant reserves of phosphate**, a key ingredient in the manufacturing of **synthetic fertilisers**. It has also **lucrative fish resources** and is believed to have **off-shore oil**.
- Timeline→

- The region first came under **Spanish control in 1884**, and was made a province called '**Spanish Sahara**' by the European country in 1934. Then in **1957**, its northern neighbour **Morocco**, which had **become independent from French rule** just a year before, **staked its claim** over the entire territory, reasserting a centuries-old position.
- Then in **1975**, ten years after the **UN called for its decolonisation**, Spain withdrew from Western Sahara, partitioning the region between **Morocco**, which **received the region's northern two-thirds**, and **Mauritania** the **remaining third in the south**.



- Since then, Morocco has controlled around **80 per cent of Western Sahara**, including its **phosphate reserves**.

## 7. Prates islands

### Why in News?

- Recently, experts are increasingly warning of a possible Chinese attack to capture the Prates islands.

### About

- Prates islands also known as **Dongsha Islands** have emerged as a **new flashpoint in South China Sea** (5C5).
- Islands are located in the **northern part of SCS under jurisdiction of Taiwan**.
- Concern → if China controlled the Prates Islands, the islands could **function as a gatekeeper to monitor U.S. and other countries' ships and aircraft** entering the South China Sea from the Pacific Ocean.



## 8. Koilwar Bridge

### Why in News?

- Gadkari inaugurates three-lane Koilwar bridge on Sone river in Bihar.

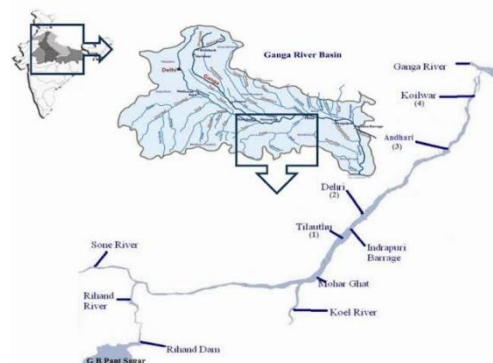
### About

- Background → The **existing two-Lane Bridge** over the river for both road and rail traffic is **138 years old**. The Bridge has been **replaced** which **includes three lanes of carriageway**.
- It is all major link **between Uttar Pradesh and Bihar**.

- Between **1862 and 1900** the bridge was the **longest bridge in India**. It was inaugurated by the then **viceroy of India Lord Elgin**. The bridge is also called the **Abdul Bari Bridge**.

#### **Sone River**

- It is also called the **son river**.
- The Sone river is one of the **major tributaries of river Ganges**.
- It originates near **Amarkantak of Madhya Pradesh**.
- Amarkantak is a **pilgrim town** and is a **unique natural Heritage area** and the meeting point of Vindhya and Satpura ranges.
- Amarkantak is also the **starting point of Narmada** and **the Johila river**.



## 9. Eswatini

### Why in News?

- Eswatini's Prime Minister Ambrose Dlamini died recently after testing positive for Covid-19.

### About Eswatini

- It is a **landlocked country in Southern Africa**.
- It is bordered by **Mozambique** to its northeast and **South Africa** to its north, west, and south.
- It was formerly and still commonly known in **English as Swaziland**.
- It was **officially renamed in 2018**.



## 10. Haldibari-Chilahati rail link

### Why in News?

- Ours and Bangladeshi PM has jointly inaugurated a railway link between Haldibari in India and Chilahati in Bangladesh.

### About

- This rail link was part of the **Broad Gauge main route from Kolkata to Siliguri**. However, the **war of 1965** effectively cut off all the railway links.
- Significance → This rail link is expected to **enhance the connectivity to Assam and West Bengal from Bangladesh**.



- It will enhance rail network **access to the main ports, dry ports, and land borders** to support the growth in regional trade and to **encourage economic and social development of the region**.
- The other rail links which are operational between India and Bangladesh are →
  - **Petrapole** (India) – **Benapole** (Bangladesh)
  - **Gede** (India) – **Darshana** (Bangladesh)
  - **Singhabad** (India)–**Rohanpur** (Bangladesh)
  - **Radhikapur** (India)–**Birol** (Bangladesh).

## 11. Fordow Fuel Enrichment Plant

### Why in News?

- According to satellite images, Iran has begun construction on a site at its underground nuclear facility at Fordow amid tensions with the U.S. over its atomic programme.

### About

- Location → Fordow Fuel Enrichment Plant (**FFEP**) is an Iranian underground uranium enrichment facility located **20 miles northeast of the Iranian city of Qom**, near Fordow village.
- It is the **second Iranian uranium enrichment facility**, the other one being that of Natanz.
- Iran has **not publicly acknowledged** any new construction at Fordow, whose discovery by the West in 2009 came in an earlier round of brinkmanship before world powers struck the 2015 nuclear deal with Tehran.
- While the purpose of the building **remains unclear**, any work at Fordow will likely **trigger new concern** in the waning days of the Trump administration before the inauguration of U.S. President-elect Joe Biden.



## 12. Chillai Kalan

### Why in News?

- The 40-day intense winter period “chillai kalan” started in Kashmir valley on 21st December with sub-zero night temperatures across the region.

### About

- What is it? → Chillai Kalan is the **coldest 40-day period of harsh winter of winter** in the **Jammu and Kashmir region**.
- It is traditionally defined as a **seasonal period of harsh winter** accompanied by a change in **increase in both frequency and quantity** of **precipitation** usually snow.
- It begins from **December 21 and ends on January 31 next year**.
- Chillai Kalan is followed by **Chillai-Khurd** and **Chillai-Bachha**.
  - **Chillai Khurd** (small cold) is a 20-day long period which starts from January 31 to February 19.
  - **Chillai-Bachha** (baby cold), a 10-day long period which occurs between February 20 and March 2.



- Considered to be the core of winter, Chillai Kalan usually **brings snowfall**, **sub-zero temperatures** causing **freezing of water bodies** including the Dal lake, closure of highways, etc.

### 13. Kilauea Volcano

#### Why in News?

- The Kilauea volcano on Hawaii's Big Island has erupted, the US Geological Survey said.

#### About

- Location → Kilauea, also called **Mount Kilauea** ("Much Spreading" in Hawaiian), is located in **Hawaii Volcanoes National Park** on the southeastern part of the **island of Hawaii, U.S.A.**
- It ranks among the **world's most active volcanoes**.
- Volcanoes in India →
  - Barren Island**, Andaman Islands (India's only active volcano)
  - Narcondam**, Andaman Islands
  - Baratang**, Andaman Islands
  - Deccan Traps**, Maharashtra
  - Dhinodhar Hills**, Gujarat
  - Dhosi Hill**, Haryana



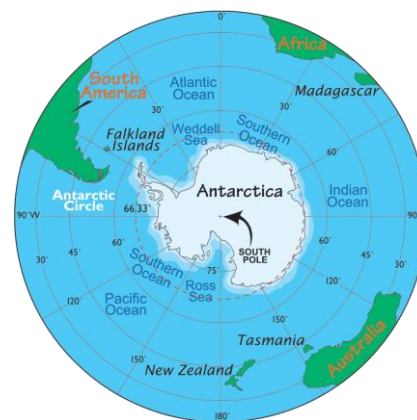
### 14. Antarctica

#### Why in News?

- At least 36 people at a Chilean research station in Antarctica have been found infected with the novel coronavirus. This is the first instance of the virus on the southernmost continent.

#### About

- Antarctica is **uninhabited except for those manning** the nearly 60 permanent stations established by several countries, including India, for **carrying out scientific research**.
- Antarctica is Earth's **southernmost continent**. It contains the **geographic South Pole** and is situated in the **Antarctic region of the Southern Hemisphere**.
- The **Indian Antarctic Programme** is a multi-disciplinary, multi-institutional programme under the control of the National Centre for Antarctic and Ocean Research, **Ministry of Earth Sciences**.
- India officially acceded to the **Antarctic Treaty System** in **August 1983**.



#### 📍 Research Stations in the Antarctic

- **Dakshin Gangotri →**
  - Dakshin Gangotri was the **first Indian scientific research** base station established in **Antarctica**, as a **part of the Indian Antarctic Program**.
  - It has **weakened** and become **just a supply base**.
- **Maitri →**
  - Maitri is **India's second permanent research station** in Antarctica. It was built and finished in **1989**.
  - Maitri is situated on the **rocky mountainous region** called **Schirmacher Oasis**. India also built a freshwater lake around Maitri known as **Lake Priyadarshini**.
- **Bharti →**
  - Bharti, India's **latest** research station operation **since 2012**. It has been constructed to **help researchers work in safety** despite the harsh weather.
  - It is India's first committed research facility and is **located about 3000 km east of Maitri**.
- **Sagar Nidhi →**
  - In **2008**, India commissioned the **Sagar Nidhi, for research**.
  - An **ice-class vessel**, it can cut through the thin ice of 40 cm depth and is the first Indian vessel to navigate Antarctic waters.
  - The Goa-based **National Centre for Polar and Ocean Research** (NCPOR) is the **nodal agency** for India's scientific expeditions in Antarctica and the Arctic.

#### 📌 Antarctic Treaty System

- The Antarctic Treaty and related agreements, collectively known as the Antarctic Treaty System, **regulate international relations with respect to Antarctica**, Earth's only continent without a native human population.
- Antarctic Treaty Secretariat Headquarters is in **Buenos Aires, Argentina**.
- Antarctic treaty →
  - Entered into force in **1961**
  - Currently has **53 parties**
  - Sets aside Antarctica as a **scientific preserve**.
  - Antarctica shall be used for **peaceful purposes only**.

## 15. Iceberg A68a

### Why in News?

- The giant Antarctic iceberg A68a has become a cause for concern for South Georgia Island.

### About

- The **giant iceberg A68**, the **biggest block of free-floating ice from Antarctica** with an area of **about 5,800 sq. km**, has been drifting in the Atlantic Ocean since 2017.
- This year, due to an **ocean current**, the iceberg was **propelled into** the **South Atlantic Ocean** and since then it has been **drifting towards** the remote sub-Antarctic island of **South Georgia**.
- This has prompted **fears** about the **impact the iceberg** could have on the **island's abundant wildlife**.
- Icebergs travel with ocean currents and either get caught up in shallow waters or ground themselves





- Recently, US National Ice Center (**USNIC**) **confirmed** that **two new icebergs** calved from **A68a** and were large **enough to be named and tracked**. They are called **A68E** and **A68F**.

#### **South Georgia**

- South Georgia is an **island in the southern Atlantic Ocean** that is part of the **British Overseas Territory** of South Georgia and the South Sandwich Islands (**SGSSI**).
- The main settlement is **Grytviken**.

## 16. Sea of Galilee

### Why in News?

- The Sea of Galilee has swelled up due to recent rains, according to reports in the Israeli media.

### About

- Location → The lake lies in **northern Israel**, between the occupied Golan Heights and the Galilee region.
- It is fed by **underground springs** but its major source is the Jordan River.
- The lake, also known as **Lake Tiberias** or **Kinneret**, is Israel's largest freshwater body.
- The **Jordan flows into the lake** and then exits it before ending in the Dead Sea, the saltiest and the lowest point on the planet.
- The region the lake is located in, had been **suffering from drought till 2018**.
- Water is not extracted from the Sea of Galilee. But it is considered to be an **important barometer of the water situation** in **Israel**.



## 17. Meteorological (Met) Centre at Leh

### Why in News?

- Union Minister for Science & Technology inaugurates Meteorological (Met) Centre at Leh.

### About

- Location → Located at a **height of 3500m**, **MetCenterLeh** will be the **highest meteorological centre** in India.
- Purpose → It will **provide forecast for important tourist places** like Nubra, Changthang, Pangong Lake, Zaskar, Kargil, Drass, Dha-Baima (Aryan valley), Khalsi among others.

## 18. Digital Ocean

### Why in News?

- The Ministry of Earth Sciences has inaugurated the web-based application “Digital Ocean” developed by INCOIS.

## About

- It is a first of its kind **digital platform** for **ocean data management** developed by Indian National Centre for Ocean Information Services(INCOIS).
- Purpose → It has been developed to **share information on marine data** and **forecast services**.
- Key Features →
  - It includes a **set of applications** developed to organise and **present heterogeneous oceanographic data** by adopting rapid advancements in geospatial technology.
  - The platform will also **serve as a one stop-solution** for **all the data related needs** of a wide range of users including research institutions, operational agencies, strategic users, academic community, maritime industry, policy makers and the public.
  - It will play a **central role** in **sustainable management** of our oceans and expanding our “**Blue Economy**” initiatives.
  - It will contribute to the **Digital India programme** and is expected to bring a **sea change** in **how the oceanographic data** is **served** for a better understanding of the oceans.

## INCOIS

- INCOIS is an **autonomous organization** under the **Ministry of Earth Sciences** (MoES).
- Located in → **Hyderabad**.
- Established in → **1999**.
- It is a **unit of the Earth System Science Organization** (ESSO), New Delhi.
- Mandate → It is mandated to provide the **best possible ocean information** and **advisory services** to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvement through systematic and focused research.

# Polity

## 1. Attorney General

### Why in News?

- Attorney-General K.K. Venugopal has given his consent to a law student to initiate contempt of court proceedings against artist Rachita Taneja for her tweets and cartoons.

### About

- The AGI is the **Indian government's chief legal advisor** and is a primary lawyer in the Supreme Court of India.
- They can be said to be the **advocate from the government's side**.
- He is a **part of the Union Executive**.
- Appointment and eligibility:
  - He is **appointed by the President of India** under **Article 76(1)** of the Constitution and holds office during the pleasure of the President.
  - They must be a person **qualified** to be **appointed as a Judge of the Supreme Court** ( i.e. a judge of some high court for five years or an advocate of some high court for ten years or an eminent jurist, in the opinion of the President and must be a citizen of India.).
- Powers and Functions:
  - The Attorney General is necessary for giving **advice to the Government of India** in **legal matters** referred to him. He also performs **other legal duties** assigned to him by the President.
  - The Attorney General has the **right of audience in all Courts in India** as well as the **right to participate in the proceedings of the Parliament**, though **not to vote**.
  - The Attorney General **appears on behalf of Government of India** in **all cases** (including suits, appeals and other proceedings) in the Supreme Court in which Government of India is concerned.
  - He also represents the Government of India in any **reference made by the President** to the Supreme Court under **Article 143** of the Constitution.
  - The Attorney General **can accept briefs** but **cannot appear against the Government**.
  - He **cannot defend an accused** in the **criminal proceedings** and accept the directorship of a company **without the permission** of the Government.
  - The Attorney General is assisted by **two Solicitor General** and **four Additional Solicitor Generals**.

### Difference between Attorney General & Solicitor General:

- Solicitor General is **subordinate to the Attorney General** of India and works under him.
- The Solicitor General for India is the **second law officer** of the country, assists the Attorney General
- Unlike the post of Attorney General of India, which is a Constitutional post under Article 76 of the Constitution of India, the posts of the Solicitor General and the Additional Solicitors General are **merely statutory**.

## 2. Delimitation Commission

### Why in News?

- Pranab Mukherjee Foundation (PMF), a non-governmental institution, has made suggestions for the next delimitation exercise.

### About Delimitation Commission

- Delimitation literally means the **act or process of fixing limits or boundaries of territorial constituencies** in a country to represent changes in population.
- The Delimitation Commission is **appointed by the President of India** and works in collaboration with the Election Commission of India.
- Composition →
  - **Retired Supreme Court judge**
  - **Chief Election Commissioner**
  - **Respective State Election Commissioners**
- Functions →
  - To **determine the number and boundaries of constituencies** to make the population of all constituencies nearly equal.
  - To **identify seats reserved** for Scheduled Castes and Scheduled Tribes, wherever their population is relatively large.
- Delimitation Commissions have been set up **four times** — **1952, 1963, 1973** and **2002** under the Acts of 1952, 1962, 1972 and 2002.
- The Delimitation Commission in India is a **high power body** whose orders have the force of law and **cannot** be called in **question before any court**.
- Current Scenario →
  - The **84th Amendment** to the Constitution in **2002** had put a **freeze on the delimitation of Lok Sabha and State Assembly constituencies till the first Census after 2026**.
  - The current boundaries were drawn on the **basis of the 2001 Census**, the number of Lok Sabha seats and State Assembly seats remained frozen on the **basis of the 1971 Census**.
  - The population according to the last census preceding the **freeze was 50 crore**, which in 50 years has **grown to 130 crore**, causing a **massive asymmetry** in the political representation in the country.

## 3. Seventh Schedule

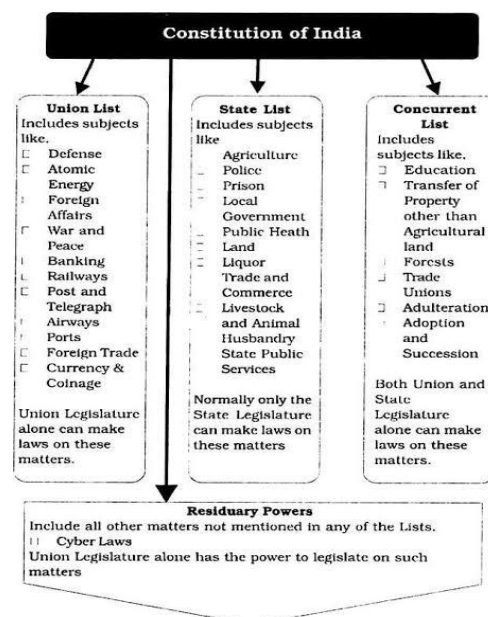
### Why in News?

- Fifteenth Finance Commission chairman N.K. Singh has called for a fresh look at the Constitution's Seventh Schedule, which forms the basis for allocating subjects to the Centre and States.

### About Seventh Schedule

- The seventh schedule under **Article 246** of the constitution deals with the **division of powers between the union and the states**.
- It defines and specifies the allocation of powers and functions between Union & States. It contains **three lists**; i.e. 1) **Union List**, 2) **State List** and 3) **Concurrent List**.

- **The Union List →**
  - It is a **list of 98** (Originally 97) numbered items as provided in the Seventh Schedule.
  - The Union Government or **Parliament of India** has **exclusive power** to legislate on matters relating to these items.
- **The State List →**
  - It is a list of **59** (Originally 66) items.
  - The respective **state governments have exclusive power** to legislate on matters relating to these items.
- **The Concurrent List →**
  - There are **52** (Originally 47) items currently in the list.
  - This includes items which are under the **joint domain of the Union as well as the respective States**.



## 4. eCourts Project

### Why in News?

- As many as 2927 complexes across India have been connected so far by a high-speed Wide Area Network(WAN) under e-Courts Project.

### About

- It is an **Integrated Mission Mode Project** under implementation since 2007 as **part of National e-Governance Plan**.
- The project is **based on the National Policy and Action Plan** for Implementation of Information and Communication Technology in Judiciary-2005.
- Aim → To provide **designated services to litigants, lawyers** and **the judiciary by universal computerization of district and subordinate courts** in the country by leveraging Information and Communication Technology (ICT) for improved justice delivery.
- Implementation → The project is monitored and funded by the **Ministry of Law and Justice**.

## 5. Human Freedom Index 2020

### Why in News?

- India dropped two ranks in the United Nations' Human Development Index this year, standing at 131 out of 189 countries.

### About

- The index presents a broad **measure of human freedom**, understood as the absence of coercive constraints.
- Published by → American think tank **Cato Institute and Fraser Institute** in **Canada**.
- Parameters → It **uses a 0 to 10 scale** to **measure personal freedom based on parameters** such as rule of law, safety and security, identity and relationships, freedom of movement, economic freedom, ability of individuals to make their own economic decisions without government or crony interference.

### Key Takeaways

- Topped by → **New Zealand has topped** the index followed by **Switzerland** and **Hong Kong**.
- India → India has been placed at the **111th** spot out of 162 countries.
- Other countries → The index put **China at 129 rank**, **Bangladesh at 139** and **Pakistan at 140**. Further, the three least-free countries in descending order are Venezuela, Sudan and Syria.

## 6. Constitutional right to protest

### Why in News?

- The Supreme Court has said that farmers have a constitutional right to continue with their “absolutely perfect” protest as long as their dissent against the three controversial agricultural laws did not slip into violence.

### About

- The right to protest peacefully is enshrined in the Indian Constitution—**Article 19(1)(a)** guarantees the freedom of speech and expression; **Article 19(1)(b)** assures citizens the **right to assemble peaceably and without arms**.
- However, these rights are also subject to **reasonable restrictions** mentioned under **Article 19(2)**.
- Supreme Court Judgements on Right to Protest
  - Ramlila Maidan Incident vs Home Secretary, Union Of India & Ors. case(2012) → The Supreme Court had stated that citizens have a **fundamental right to assembly and peaceful protest** which **cannot be taken away by an arbitrary executive or legislative action**.
  - Shaheen Bagh Judgement → The Supreme Court has upheld the right to peaceful protest against the law but made it unequivocally clear that **public ways** and **public spaces cannot be occupied** and **that too indefinitely**.

## 7. National Commission for Minorities

### Why in News?

- The National Commission for Minorities celebrated World Minorities Rights Day on 18th December 2020.

### About

- The commission was established under the **National Commission for Minorities act, 1992**.
- The act notifies 5 religious communities namely **Christians, Muslims, Sikhs, Zoroastrians** and **Buddhists** under the act. In 2014, **Jains** were added to the list.
  - Composition →
  - NCM consists of a **Chairperson**, a **Vice-Chairperson** and **five members** and all of them shall be from amongst the minority communities.
  - Total of **7 persons** to be **nominated by the Central Government** should be from amongst persons of eminence, ability and integrity.
- Tenure → Each Member holds office for a **period of three years** from the date of assumption of office.
- Functions → To **evaluate the progress** of the **developmental programs** and legal & constitutional safeguards for the welfare of minorities.

- To **Look into specific complaints** regarding deprivation of the rights of minorities.
- To **undertake studies/research on the issues** relating to socio economic development of minorities.

## 8. Parliament Session

### Why in News?

- Government has decided to cancel the Winter session of Parliament, citing fears over a surge in cases due to covid-19 pandemic.

### About

- The **President of India** is **empowered to summon** each House of Parliament from time to time.
- The **maximum gap** between two sessions of Parliament **cannot be more than six months**. That means the Parliament should **meet at least twice a year**.
- A 'session' of Parliament is the period between the **first sitting of a House and its prorogation**.
- There are usually three sessions in a year, viz,
  - **Budget Session** (February to May)
  - **Monsoon Session** (July to September)
  - **Winter Session** (November to December)
- The period between the prorogation of a House and its reassembly in a new session is called '**recess**'.

### Terms associated with Sessions of Parliament:

- Adjournment → It suspends the work in a sitting for a **specified time**, which **may be hours, days** or **weeks**..
- Adjournment sine die → Termination of a sitting of the House **without any definite date** being fixed for the next sitting.
- Prorogation → It means the **termination of a Session** of the House **by an order made by the President** under article 85(2)(a) of the Constitution.
  - The Prorogation of the House may take place **any time** even while the House is sitting.
  - However, prorogation usually **follows the adjournment of the sitting of the House sine die**.
- Dissolution → **Only the Lok Sabha** is **subject to dissolution**. Rajya Sabha, being a permanent House, is not subject to dissolution.
  - A dissolution **ends the life of the existing House**, and a new House is constituted after general elections are held.
  - The **President is empowered** to dissolve the Lok Sabha.

## 9. Lok Adalat

### Why in News?

- Lok Adalat creates history by settling 2.61 lakh cases in Karnataka.

### About

- What is it? → Lok Adalat (People's Court) is an **alternative dispute resolution mechanism**.
- The forum can settle cases pending on **panchayat** or at a **pre-litigation stage** in a court of law.



- Statutory provisions → Under the **Legal Services Authorities Act, 1987** Lok Adalats have been given statutory status.
- Final award → The decision made by the Lok Adalats is considered to be a **verdict of a civil court** and is **ultimate and binding** on all parties.
- No appeal →
  - There is **no provision** for an appeal against the verdict made by Lok Adalat.
  - But, they are **free to initiate litigation** by approaching the court of appropriate jurisdiction by filing a case by following the required procedure, in exercise of their right to litigate.
- Nature of Cases to be Referred to Lok Adalat →
  - Any **case pending** before any court.
  - Any dispute which has **not been brought before any court** and is likely to be filed before the court.
  - Provided that any matter relating to an **offence not compoundable** under the law shall **not be settled** in Lok Adalat.
- Significance → The Lok Adalats are formed to fulfil the promise given by the **preamble of the Indian Constitution**– **securing Justice** – **social, economic** and **political of every citizen of India**.

## 10. Governor's role in calling an Assembly session

### Why in News?

- Recently, the Kerala Governor has turned down a request to summon a special sitting of the Assembly to debate the new central farm laws.

### About

- **Article 174** says that the **Governor shall** from time to time **summon the House** or each House of the Legislature of the State to meet at **such time and place** as **he thinks fit**.
- The provision puts the **responsibility on the Governor** to ensure that the **House is summoned** at **least once every six months**.
- Although it is the Governor's prerogative to summon the House, according to **Article 163**, the Governor is required to act on the **"aid and advice"** of **the Cabinet**.
- So, when the Governor summons the House under **Article 174**, this is **not of his or her own will** but on the **aid and advice of the Cabinet**.
- Can the Governor refuse the aid and advice of the Cabinet? →
  - There are a **few instances** where the Governor can summon the House despite the refusal of the Chief Minister who heads the Cabinet.
  - When the **CM appears** to have **lost the majority** and **the legislative members** of the House propose a **no-confidence motion** against the CM, then the Governor can decide on his or her own on summoning the House.
  - But the actions of the Governor, when using his **discretionary powers** can be **challenged in court**.
- What has the Supreme Court said? →
  - The **landmark 2016 Constitution Bench ruling** in which the Supreme Court looked into the **constitutional crisis in Arunachal Pradesh** after the Governor had imposed President's Rule in the state.

- The court read the power to summon the House as a “**function**” **of the Governor** and **not a “power”** he enjoys.

## 11. Forest Rights Act, 2006

### Why in News?

- The Jammu and Kashmir administration recently said that it was in the process of implementing the Forest Rights Act, 2006 to grant the rights to forest dwellers in the region.

### About

- The act recognizes and vest the forest rights and occupation in **Forest land in forest Dwelling Scheduled Tribes** (FDST) and **Other Traditional Forest Dwellers** (OTFD) who have been residing in such forests for generations.

### Key features of the FRA are:

- Following rights have been granted to Scheduled Tribes and Other Traditional Forest Dwellers:
  - **Title rights**- i.e. **ownership** - to land that is being **cultivated by tribals or forest dwellers** as on **13 December 2005**, subject to a maximum of 4 hectares.
  - **Community rights** - to grazing areas, fishing, accessing water bodies in forests, to pastoralist routes, etc. and to intellectual property and traditional knowledge related to biodiversity and cultural diversity
  - **Relief and development rights** - to rehabilitation in case of illegal eviction or forced displacement; and to basic amenities, subject to restrictions for forest protection.
  - **Forest management rights**- to **protect, regenerate or conserve or manage any community forest resource** which the communities have been traditionally protecting and conserving for sustainable use.
  - **Right to collect and sell minor forest produce (MFP)**: These include **forest products** like tendu leaves, honey and other products that have commercial value.
- **Eligibility to get rights under the Act** → is confined to those who “**primarily reside in forests**” and who depend on forests and forest land for a livelihood. Further, either the claimant must be a member of the Scheduled Tribes scheduled in that area or must have been residing in the forest for 75 years.
- **Authority** → The Act provides that the **Gram Sabha**, will initially pass a **resolution recommending whose rights to which resources should be recognised**. This resolution is then screened and approved at the level of the sub-division and subsequently at the district level.

## 12. Legalising Betting in India

### Why in News?

- Indian Finance Minister Calls for Sports Betting Legalization.

### About betting

- Betting is defined as the action of gambling money on the outcome of a race, game, or other unpredictable event.
- **Public Gambling Act, 1867** is the general law governing gambling in India. However, the state legislatures have been entrusted with significant regulatory leeway to form state specific gambling law.

- There are **no specific central laws governing online gambling in India**. Most of the Gambling Legislations have been enacted prior to the advent of virtual or online gambling and hence these primarily refer to gaming/gambling activities at the physical premises.
- Countries like Australia, United Kingdom, South Africa, Sri Lanka and New Zealand have taken a step in this direction, legalizing and regulating betting in sports.

### About Gambling legislations in India

- Betting is a term that validates the activity of gambling. Gambling is a generic term, while betting is a structured agreement.
- Gambling and betting are **State subjects**. However, Gambling' is not defined under the Gambling Legislations of states.
- The Indian law distinguishes each game to be a "**game of skill**" and "**game of chance**". This differentiates fantasy sports from traditional betting.
- The gambling under the Gambling Legislations **does not include**:
  - Betting on a horse race (subject to the legal regulations);
  - Games of skill (excluded under the Gambling Act and by the court's judgments);
  - Lotteries (regulated by lottery laws of India).
- Thus, **Fantasy sports betting is legal** because it is a game of skill. And, in fantasy sports, your opponents are other human players, rather than bookmakers like in traditional betting.
- **Sikkim and Nagaland expressly permit online gambling**. However, there are also states such as Telangana which follow a policy of zero-tolerance towards gambling, both online and offline.

# IR

## 1. Islamic Cooperation countries

### Why in News?

- India has lashed out at Organisation of Islamic Cooperation (OIC) and rejected unwarranted references about Jammu & Kashmir made in resolutions adopted at the 47th Council of Foreign Ministers session.

### About OIC

- What is it? → It is an **international organization** with the primary objective of **safeguarding the interests of the Muslim world** in the spirit of promoting international peace and harmony.
- Origin → It was established in **1969** after attack on Al-Aqsa Mosque in Jerusalem.
- Membership → It is the **second largest inter-governmental organization** after the United Nations with a membership of **57 states**. Of these, 47 are Muslim Majority countries.
- Observer countries → **Bosnia and Herzegovina**; **Central African Republic**; **Thailand**; **Russia** and **Turkish Cypriot State**.
- Headquarters (HQ) → **Jeddah, Saudi Arabia**.
- The OIC has **permanent delegations** to the United Nations and the European Union.
- Significance of OIC for India → OIC's growing **economic and energy interdependence with India** has become important in recent times.

## 2. International Association of Insurance Supervisors

### Why in News?

- The International Financial Services Centres Authority (IFSCA) obtained membership of International Association of Insurance Supervisors (IAIS).

### About IAIS

- What is it? → The International Association of Insurance Supervisors is a **voluntary membership organization** of insurance supervisors from over 200 jurisdictions, constituting 97% of the world's insurance premiums.
- Founded → **1994**.
- Headquarters → **Basel, Switzerland**.
- Working → It is the **international standard-setting body** responsible for **developing and assisting in the implementation of principles, standards** and **other supporting material** for the supervision of the insurance sector.
- The IAIS also provides a **forum for Members to share their experiences** and understanding of **insurance supervision** and **insurance markets**.
- Significance → In recognition of its **collective expertise**, the IAIS is routinely called upon by the **G20 leaders** and other international standard setting bodies.

## 3. SAARC

### Why in News?

- SAARC can only be fully effective in the absence of terror and violence. PM Modi said in a message to SAARC on its 36th Charter Day anniversary.

### About SAARC

- Formation → South Asian Association for Regional Cooperation (SAARC) was established with the **signing** of the **SAARC Charter in Dhaka** on **8 December 1985**.
- Eight Member States → **Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka**.
- Secretariat → **Kathmandu** (Nepal).
- Objective → To promote the **welfare of the people of South Asia** and to **improve their quality of life**, and to accelerate economic growth, among other things.
- SAARC Summits →
  - These are usually **held biennially** and **hosted by member states** in **alphabetical order**.
  - The **last SAARC Summit** in **2014** was held in Kathmandu (Nepal), which was attended by India.
- Significance →
  - SAARC comprises **3% of the world's area, 21% of the world's population** and **3.8%** (US\$2.9 trillion) of the **global economy**.
  - It is the world's most densely populated region and one of the most fertile areas.

## 4. Countries of Particular Concern

### Why in News?

- Recently, the US State Department has designated Pakistan and China among eight other countries that are of particular concern for violation of religious freedom.

### About Countries of Particular Concern

- It is a designation **by the United States Secretary of State** under the International Religious Freedom Act enacted by USA in 1998.
- Why is it given? → It is given to countries which engage in or **tolerate systematic, ongoing, egregious violations of religious freedom**.
- Nations on the CPC list → **Pakistan, China, Myanmar, Eritrea, Iran, Nigeria, North Korea, Saudi Arabia, Tajikistan and Turkmenistan**.
- Notably, the **State Department did not accept** the USCIRF recommendation that India, Russia, Syria and Vietnam be also designated as CPCs.
- Special Watch List → It is one that is deemed **not to meet all of the CPC criteria** but engages in or tolerates severe violations of religious freedom.
  - **Comoros, Cuba, Nicaragua and Russia** are on the list.
  - **Sudan and Uzbekistan** have been **removed from the list** based on significant, concrete progress undertaken by their respective governments over the past year.

## 5. Better Than Cash Alliance

### Why in News?

- India and UN-Based Better Than Cash Alliance organized a joint Peer learning exchange on fintech solutions for responsible digital payments at the last mile.

### About Better Than Cash Alliance

- What is it? → It is a **partnership of governments, companies, and international organizations** that **accelerates the transition from cash to digital payments** in order to reduce poverty and drive inclusive growth, and to advance the Sustainable Development Goals.
- Created in → **2012**.
- Launched by → It was launched by the **United Nations Capital Development Fund**, the **United States Agency for International Development**, the **Bill & Melinda Gates Foundation**, **Citigroup**, the **Ford Foundation**, the Omidyar Network and Visa Inc..
- Members → The Alliance has **75 members** which are committed to digitizing payments.
- Objectives → The Alliance Secretariat works with members on their journey to digitize payments by:
  - Providing **advisory services** based on their priorities.
  - Sharing action-oriented research** and fostering peer learning on responsible practices.
  - Conducting advocacy** at national, regional and global level.
- The **United Nations Capital Development Fund** serves as the **secretariat**.
- India became a member** of the Better Than Cash Alliance in **2015**.

## 6. Asia-Pacific Broadcasting Union

### Why in News?

- Prasar Bharati's CEO Shashi Shekhar Vempati being elected as the Vice President of Asia Pacific Broadcasting Union (ABU).

### About

- It is a **non-profit, non-governmental, non- political**, professional association of broadcasting organisations, which **assist development of broadcasting in region**.
- Established → **1964**.
- Secretariat → **Kuala Lumpur, Malaysia**
- Members → With over **272 member in 76 countries** on four continents, ABU is biggest broadcasting union in the world.
- ABU is also **member of the World Broadcasters' Union**.



## Society

### 1. Roadmap on imparting technical education in Mother Tongue

#### Why in News?

- Recently, the Union Education Minister has set up a task force for preparing a roadmap on imparting technical education in Mother Tongue.

#### About

- Chairmanship → It will be set-up under the chairmanship of the secretary, higher education, **Amit Khare**.
- Objective → To **achieve the Prime Minister's vision** that **students may pursue the professional courses** such as medicine, engineering, law, etc **in their mother tongue**.
- Mandate → To prepare a **roadmap on imparting technical education in Mother Tongue**.
- Function → It will take into consideration the **suggestions made by various stakeholders** and will **submit a report in a month**.

#### 👉 Shiksha Parv Initiative:

- It was **organized by the Ministry of Education** to felicitate the teachers and to take New Education Policy 2020 forward.
- Under this, the Ministry has organised a **series of webinars** on NEP and its implementation.

### 2. World Malaria Report (WMR) 2020

#### Why in News?

- Recently, the World Health Organisation (WHO) has released the World Malaria Report (WMR) 2020.

#### About Key findings

- India has made considerable progress in **reducing its malaria burden**.
- India is the only high endemic country which has reported a **decline of 17.6% in 2019 as compared to 2018**.
- The Annual Parasitic Incidence (**API**) **reduced by 27.6% in 2018** compared to 2017 and by **18.4% in 2019 as compared** to 2018.

#### 👉 About Malaria:

- Caused by → **Plasmodium parasites**.
- Spread → **Female Anopheles mosquitoes** deposit parasite sporozoites into the skin of a human host.
- Four kinds of malaria parasites infect humans →
  - Plasmodium falciparum**,
  - P. vivax**,
  - P. ovale**, and
  - P. malariae**.
- In addition, **P. knowlesi**, a type of malaria that naturally infects macaques in Southeast Asia, also infects humans, causing malaria that is transmitted from animal to human ("zoonotic" malaria).

- Symptoms are **chills, fever and sweating**, usually occurring a few weeks after being bitten.
- **World Malaria Day** is observed on **25th April**.

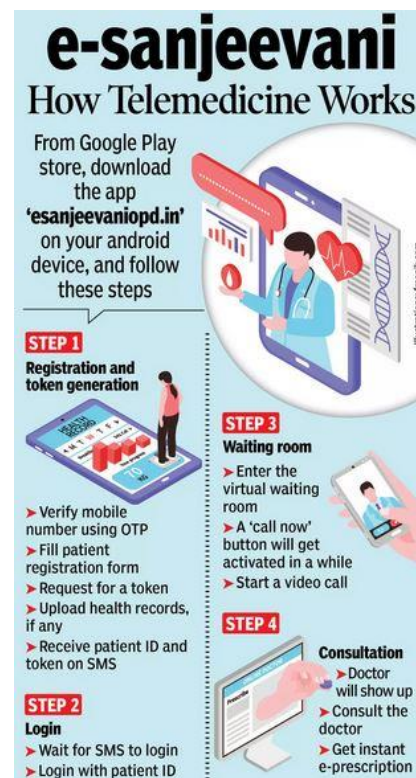
### 3. E-Sanjeevani Telemedicine Service

#### Why in News?

- In a landmark achievement, eSanjeevani, Health Ministry's national telemedicine initiative today completed 9 lakh consultations.

#### About

- It is a **national telemedicine service** that offers **tele-consultations** enabling patient to doctor consultations from the confines of their home, as well as doctor to doctor consultations.
- This eSanjeevani platform has enabled **two types of telemedicine services** viz. **Doctor-to-Doctor** (eSanjeevani) and **Patient-to-Doctor** (eSanjeevani OPD) Tele-consultations
- eSanjeevani → It is a **doctor to doctor** telemedicine system being implemented **under the Ayushman Bharat Health and Wellness Centre**(AB-HWCs) programme.
  - It seeks to **connect all 1,50,000 HWCs** using the **hub-and-spoke model** by December 2022.
- eSanjeevaniOPD → It was launched amid the Covid-19 pandemic to **enable patient-to-doctor tele-consultation**.



### 4. Urban Quality Index

#### Why in News?

- IIT-Bombay researchers have come up with an urban quality of life index which is related to real urban life in India presently.

#### About

- It was released by **IIT-Bombay**.
- It ranked cities on **7 Parameters** – Basic amenities, Economic development, Safety and security, transportation access, environmental impact, Infrastructure development and Gender role.

#### 📌 Key Takeaways

#### IIT-B RANKING OF INDIAN CITIES

Index	Highest ranked	Lowest ranked
Basic amenities	Pune	Patna
Economic development	Mumbai	Patna
Safety and security	Kolkata	Patna
Transportation access	Delhi	Indore
Environmental impact	Mumbai	Lucknow
Infrastructure development	Kolkata	Patna
Gender role	Chennai	Patna

## 5. Vanchit Ikai Samooch Aur Vargon Ki Aarthik Sahayta (VISVAS) Yojana

### Why in News?

- In order to implement the VISVAS Yojana National Backward Classes Finance & Development Corporation (NBCFDC) and the National Scheduled Castes Finance and Development Corporation (NSFDC) have signed an agreement with Central Bank of India.

### About

- It is an **Interest subvention Scheme** for financial empowerment of **economically marginalized OBC/SC Self Help Groups (SHGs) & Individuals**.
- Ministry → **Ministry of Social Justice & Empowerment**.
- Financial aid → The scheme will **benefit OBC/SC SHGs** with **loans up to Rs.4 Lakh** and **OBC/SC individuals** with **loan up to Rs.2 Lakh** with a quick interest subvention benefit of **5% directly** into the standard accounts of borrowing beneficiaries.

## 6. Partners in Population and Development

### Why in News?

- Inter-Ministerial Conference by Partners in Population and Development (PPD). India took part in it.

### About PPD

- What is it? → It is an **intergovernmental organisation** for **promoting south-south cooperation** in the fields of reproductive health, population, and development.
- Secretariat → **Dhaka, Bangladesh**.
- Members → Currently, PPD has the membership of **26 developing countries**, representing more than 59% of the world's population.
- Formation → Launched at the **1994** International Conference on Population and Development (ICPD), when ten developing countries from Asia, Africa and Latin America formed an **intergovernmental alliance** to **help implement the Cairo Program of Action** (POA).
- This POA, **endorsed by 179 nations**, stresses the need to **establish mechanisms** to **promote development** through the sharing of experiences in reproductive health (RH) and family planning (FP) within and among countries and to promote effective partnerships among the governments, NGOs, research institutions and the private sector.

## 7. Urban Governance Index 2020

### Why in News?

- Odisha tops Urban Governance Index 2020, but all states need to empower cities more — report.

### About Index

- Published by → **Praja Foundation**, a Mumbai-based think tank working since **1997** to **enable accountable governance**.

- Purpose → The Urban Governance Index ranks states to indicate where they stand in terms of real empowerment of grassroots democracy and local self government.
- It is based on four themes, 13 sub-themes and 42 indicators.
- Themes → The ranking is based on these main themes—
  - how empowered elected city representatives and legislative structures are;
  - how empowered the state's city administration is;
  - how empowered the citizens are and finally the fiscal empowerment and financial autonomy of the state.

#### 📌 Key Takeaways

- Topped by → Odisha was ranked first in the index followed by Maharashtra, Kerala, Madhya Pradesh and Chhattisgarh.
- Worst States → Jharkhand, Arunachal Pradesh, Meghalaya, Manipur and Nagaland performed the worst in the index.

## 8. National Centre for Divyang Empowerment

### Why in News?

- The Minister of State for Home Affairs has inaugurated the National Centre for Divyang Empowerment(NCDE).

### About

- NCDE was established by the Central Reserve Police Force (CRPF).
- Objective → To skill, re-skill and rehabilitate Divyang warriors of the force suffering from disability that occurred in line of duty.
- Location → Rangareddy, Telangana.
- In order empower the Divyangs, several market driven expertise such as sports skills and computer skills will be imparted to Divyang Warriors. The initiative will enable them to serve the country despite of their disabilities.
- It also reskills them with vocational training and Information Technology course to enable them to contribute to the organisation and safeguard their pride and dignity.

#### 📌 Programmes and Legislations for Divyangs in India

- **Right of Persons with Disabilities Act, 2016**
  - To improve the life of the disabled population in the country.
  - The act increased the quantum of reservation of people suffering from disabilities from 3% to 4% in government jobs.
  - The child between the age of 6 and 18 will have the right to free education.
  - The act set up separate national and state funds to create financial support to persons with disabilities.
- **The Deen Dayal Disabled Rehabilitation Scheme**
  - To provide services to persons with disabilities.
  - The services include vocational training centres, special schools, community-based rehabilitation centres, etc.

- **National Fellowship for students with Disabilities:**
  - Under the scheme, **200 students** with disabilities are **provided with grants**.
- **Accessible India Campaign**
  - To **achieve universal accessibility** to enable persons with disabilities to live independently.
  - The campaign targets to **enhance transport system, build environment** that **is feasible** to the disabled population.

## 9. Lancet Citizens Commission

### Why in News?

- Lancet Citizens' Commission on Reimagining India's Health System initiative has been launched.

### About

- It is a **first of its kind participatory, countrywide initiative** in collaboration with world's leading health journal **The Lancet** and **the Lakshmi Mittal** and **Family South Asia Institute, Harvard University**.
- Objective → To develop a **citizens' roadmap** to achieving **universal health coverage**(UHC) in India over a **period of ten years**.
- Principles → The Commission will be **guided by four principles**:
  1. UHC covers all health concerns;
  2. Prevention and long-term care are key.
  3. The concern is financial protection for all health costs and
  4. Aspiring for a health system that can be accessed by all who enjoy the same quality.

## 10. UN Population Award

### Why in News?

- Recently, HelpAge India has been presented the UN Population Award for 2020 in the institutional category.

### About UN Population Award

- It was established by the United Nations General Assembly (UNGA) in **1981**.
- Objective → The award **honours an individual** and/or **institution** in recognition of outstanding **contributions to population and reproductive health questions** and to their solutions.
- Committee → The Committee for the United Nations Population Award is composed of **10 UN Member States** with **United Nations Secretary General** and **UNFPA Executive Director** serving as ex-officio members.
- Award → It consists of a **gold medal**, a **diploma** and a **monetary prize**.
- The United Nations Population Fund (**UNFPA**) serves as **its secretariat**.

### 🏠 HelpAge India

- It is a **leading charity in India** working with and **for disadvantaged elderly** for nearly 4 decades.
- Formation → It was **set up in 1978** and is registered under the Societies' Registration Act of 1860.
- For the **first time** in the history of the UN Population Award, the honour is being **conferred on an Indian institution**.

- Only two Indians have been awarded in the past four decades since the award was established in 1981: former **Prime Minister Indira Gandhi in 1983** and industrialist-philanthropist **J.R.D.Tata in 1992**.

#### **United Nations Population Fund (UNFPA)**

- It is the **United Nations sexual and reproductive health agency**.
- Aim → It **aims to deliver a world** where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled.
- Headquarters → **New York, United States**.
- Report → **State of World Population Report**.

## 11. PM's Special Scholarship Scheme

### Why in News?

- Extending support to J&K and Ladakh students, AICTE has decided to release the instalment of Rs. 20,000/- as maintenance allowance under Prime Minister's Special Scholarship Scheme (PMSSS).

### About

- Aim → This scheme aims to **build the capacities of the youths of J&K and Ladakh** by Educating, Enabling and Empowering them to compete in the normal course.
- Implementation → It is implemented by **All India Council for Technical Education** (AICTE).
- Features →
  - Under the scheme, these youths are supported by way of **scholarship in two parts** namely the **academic fee & maintenance allowance**.
  - The academic fee is **paid to the institution** where the student is provided admission after on-line counselling process conducted by the AICTE.
  - This academic fee **covers tuition fee** and **other components as per the ceiling fixed** for various professional, medical and other UG courses.
  - In order to **meet expenditure towards** hostel accommodation, mess expenses, books & stationery etc., a fixed amount of **Rs.1.00 Lakh** is provided to the beneficiary.

## 12. PM-JAY SEHAT

### Why in News?

- Prime Minister will launch Ayushman Bharat PM-JAY SEHAT to extend coverage to all the residents of the Union Territory of Jammu & Kashmir.

### About

- Aim → It aims to **ensure Universal Health Coverage** by providing free of cost insurance cover to all the residents of the **UT of J&K**.
- The scheme will cover the **remaining population** which has not been covered under the Ayushman Bharat Scheme.
- Key Features of the scheme →



- It provides **financial cover** up to **Rs 5 lakh per family** on a floater basis to all residents of the UT of J&K.
- It provides for **operational extension** of **PM-JAY to 15 lakh** (approx.) additional families.
- The scheme will **operate on insurance mode** in **convergence with PM-JAY**.
- The benefits of the scheme will be **portable** across the country. The hospitals empaneled under PM-JAY scheme shall **provide services under this scheme as well**.
- Significance → With the launch of 'SEHAT' Scheme, **J&K** will be **among the first in the country** to **achieve Universal Health Coverage**.

### 13. National Backward Classes Finance & Development Corporation

#### Why in News?

- NBCFDC and Apollo Medskills signed a Memorandum of Understanding (MoU) recently for deliverance of Vaccine Administration Training to Nurses, Pharmacists belonging to the Other Backward Classes Communities and Economically Backward Classes persons using the co-funding of NBCFDC.

#### About

- It is a **Govt. of India Undertaking** under the aegis of **Ministry of Social Justice and Empowerment**.
- NBCFDC was incorporated under **Section 25 of the Companies Act 1956 in 1992** (now section 8 of Companies Act 2013) as a **Company not for profit**.
- Objective → It was incorporated with an objective to **promote economic and developmental activities** for the benefit of Other Backward Classes (OBCs) and to **assist the poorer section** of these classes in skill development and self-employment ventures.
- Functions → NBCFDC provides **financial assistance** through State Channelizing Agencies (SCAs) nominated by the State Governments/UTs and Banks (RRBs & PSBs).
  - NBCFDC also provides **Micro Financing** through SCAs/ Self Help Groups (SHGs).
  - It additionally facilitates **skill development of poor persons** belonging to OBCs, persons of Economically Backward Classes (EBCs), De-notified Nomadic and Semi-Nomadic Tribe, Sr. Citizen, Beggars and Transgender.

### 14. R P Tiwari Committee

#### Why in News?

- The University Grants Commission (UGC) has set up a seven-member committee headed by R P Tiwari.

#### About

- Mandate → This committee will consider the **issue of holding common entrance test** at **undergraduate (UG) level** only from the **next academic year** in central universities to provide a single platform for admission.
- The new **National Education Policy (NEP)** advocates **reducing** the **number of entrance tests** to eliminate the need for taking coaching for these exams.
- If the NEP suggestion is implemented, the **National Testing Agency** will be **established**.
- This Agency will be tasked to **conduct a common aptitude test** as well as **specialised common exams** for different disciplines at least twice a year, for admission to bachelor degrees in central universities.

# Security

## 1. Border Security Force

### Why in News?

- 56th 'Raising Day' event of the Border Security Force (BSF) was held on 1st December 2020 in New Delhi.

### About BSF

- What is it? → The Border Security Force (BSF) is the primary Border guarding force of India and has been termed as the **First Line of Defence of Indian Territories**.
- Formation → It was raised in the wake of the 1965 War on **1 December 1965**.
- It is a Union Government Agency under the administrative **control of Ministry of Home Affairs**.
- The BSF is the **world's largest border guarding force** securing the 6,386.36 kms long International **Borders with Pakistan and Bangladesh**.
  - It is deployed on Indo-Pakistan International Border, Indo-Bangladesh International Border, Line of Control (LoC) along with Indian Army and in Anti-Naxal Operations.
- It has an **air wing**, **marine wing**, an **artillery regiment**, and **commando units**.
- It contributes dedicated services to the **UN peacekeeping Mission** by sending a **large contingent** of its trained manpower every year.
- The BSF has its **own cadre of officers** but its head, designated as a **Director-General** (DG), since its raising has been an officer **from the Indian Police Service**.
- Headquarters →
  - The Border Security Force has its headquarters at **New Delhi**.
  - It is also known as Force Headquarters (FHQ) headed by a **Director General**.

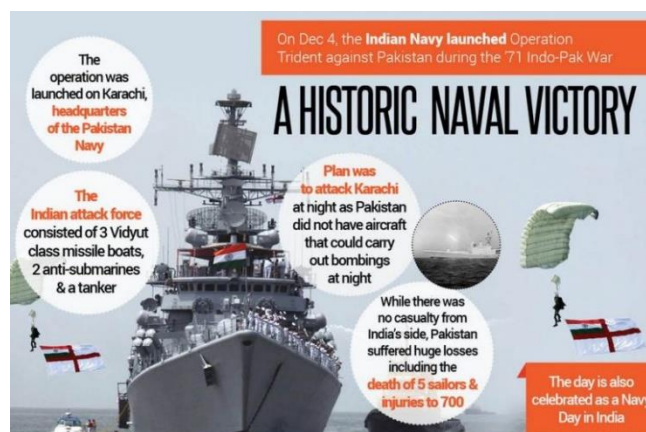
## 2. Operation Trident

### Why in News?

- Every year, India celebrates December 4 as Navy Day to commemorate Operation Trident – a key offensive during the 1971 India-Pakistan War. This year, it is the 50th anniversary of the victory in the 1971 War.

### About

- The **India-Pakistan War** of **1971** had begun on December 3, when the **Pakistan Air Force** launched **pre-emptive strikes** on airfields in Western India.
- Following the **Battle of Longewala**, the Indian Navy inflicted heavy **damage on Pakistani vessels** in Karachi harbour.
- India responded by formally **declaring war** in the wee **hours of December 4**.



- On December 4, under **Operation Trident**, the **Indian Navy sank three vessels** near the Pakistani port city of Karachi.
- The Indian Air Force also played a crucial role, when **Karachi's Kemari oil tanks** were **strafed by the IAF** on the same day in an independent operation which it did not claim.

👉 **Also remember**

#### Operation Desert Chase:

- It was the name of the **Anti-espionage operation** started by **Military Intelligence**(MI) in early 2019.
- It successfully culminated in 2020 with the **arrest of two civil defence employees** that they had been passing on sensitive information to Pakistan's spy agency ISI.

#### Operation Bandar:

- It was the **code-name** given **by Indian Air Force**(IAF) to the **air strikes** conducted **by its Mirage-2000 fighters** against the major Jaish-e-Mohammed training facility at Balakot in Pakistan in response to the Pulwama terror attack.

### 3. Akash Missiles

#### Why in News?

- Indian Air Force has successfully test-fired the Akash Missiles at Suryalanka test firing range in Andhra Pradesh.

#### About

- What is it? → It is a medium-range mobile **surface-to-air missile** defense system developed by the Defence Research and Development Organisation (**DRDO**) and manufactured by Bharat Dynamics Limited (**BDL**).
- Used by → It is an indigenously made missile inducted into the **Indian Army** and **Air Force**.
- Range → The missile has the capability to **engage aerial threats** upto the maximum range of **25 km** and up to an **altitude of 18 km** operating at a **speed range of 1.8 to 2.5 Mach**.

### 4. Havana Syndrome

#### Why in News?

- National Academies of Sciences(NAS) has found microwave radiation to be the cause for the "Havana syndrome".

#### About

- In late **2016**, USA diplomats and other employees stationed in **Havana (capital of Cuba)** reported **feeling ill after hearing strange sounds and experiencing odd physical sensations**.
- The symptoms included **nausea, severe headaches, fatigue, dizziness, sleep problems**, and **hearing loss**, which have since come to be known as the Havana Syndrome.
- The more chronic problems suffered by Havana personnel included mainly **vestibular processing** and **cognitive problems** as well as **insomnia** and **headache**.
- While the symptoms have resolved for some of the affected employees, for others, the effects have lingered and posed a **significant obstacle** to **their work** and **affected the normal functioning of lives**.

### 📌 Microwave weapons:

- These are supposed to be a **type of direct energy weapons** which aim **highly focused energy** in the form of **sonic, laser, or microwaves**, at a target.
- Effects → People exposed to **high-intensity microwave pulses** have reported a **clicking or buzzing sound**, as if seeming to be coming from within your head. It can have both **acute and long-term effects without leaving signs of physical damage**.
- Countries with Microwave Weapons →
  - China had first put on display its microwave weapon, called **Poly WB-1**, at an air show in 2014.
  - The USA has also developed a prototype microwave-style weapon, which it calls the “**Active Denial System**”.

## 5. INS Himgiri

### Why in News?

- ‘Himgiri’, the first of the three Project 17A ships being built at M/s Garden Reach Shipbuilders and Engineers Limited (GRSE), Kolkata was launched on 14 December 2020.

### About INS Himgiri

- It is an **indigenous stealth frigate** being built by the **Garden Reach Shipbuilders and Engineers Limited** (GRSE) under **Project 17A** for the Navy.
- The ship has taken its name and **crest of the second Frigate of the Leander Class of ships**, which incidentally was **launched 50 years ago in 1970**.

### 📌 Project 17A or Nilgiri-class frigate

- Under the Project 17A program, a total of **seven ships, four** at **Mazagon Dock Shipbuilders Limited** (MDL) and **three** ships at **GRSE** are being built with **enhanced stealth features, advanced indigenous weapon and sensor fit along** with several other improvements.
- P17A ships are the **first gas turbine propulsion** and **largest combat platforms** ever built at GRSE.
- P17A ships have been **indigenously designed** by Directorate of Naval Design (Surface Ship Design Group) - DND(SSG), and are being **built at indigenous yards** namely **MDL and GRSE**.

## 6. CORPAT exercise

### Why in News?

- 35th India - Indonesia Coordinated Patrol (IND-INDO CORPAT) is being held between Indian Navy Indonesia Navy.

### About

- To **reinforce maritime links**, the two navies have been carrying out CORPAT along their **International Maritime Boundary Line since 2002**.
- Aim → **Ensuring safety and security of shipping** and international trade in the region.
- Other Military Exercises with Indonesia →
  - **Samudra Shakti**: A bilateral maritime exercise.

- **Garuda Shakti**: A joint military exercise.

## 7. Systems Handed Over to Defence Services

### Why in News?

- Recently, the Defence Minister has handed over the Indian Maritime Situational Awareness System (IMSAS), ASTRA Mk-I and Border Surveillance System (BOSS) to the Navy, Air Force and Army respectively.

### About IMSAS

- What is it? → It is a **state-of-the-art and high performance intelligent software system** that provides Global Maritime Situational Picture, marine planning tools and analytical capabilities to Indian Navy.
- It also provides **Maritime Operational Picture** from naval headquarters to each individual ship in sea to enable naval command and control.
- Involved bodies → Centre for Artificial Intelligence and Robotics (**CAIR**), **Bengaluru** and **Indian Navy** has jointly conceptualised and developed the product and **Bharat Electronics Limited** (BEL), **Bengaluru** has **implemented it**.

### 👉 Border Surveillance System (BOSS)

- What is it? → It is an **all-weather electronic surveillance system**
- Designed and developed by → **Instruments Research and Development Establishment** (IRDE), **Dehradun**.
- Working → The system has been **deployed at Ladakh border area** for **day and night surveillance** and facilitates monitoring and surveillance by automatically detecting the intrusions in harsh high-altitude sub-zero temperature areas with remote operation capability.
- It is **equipped with hybrid energy source** for round the clock functionality.
- It consist of **battle field surveillance radar** & payload consists of day **camera**, **GPS** etc. mounted at an observation tower.
- It transmits **real time video** and **data at a distance 20km** to control station through wireless & fibre optic link.

### 👉 ASTRA Mk-I

- What is it? → It is the indigenously developed **first Beyond Visual Range (BVR) Missile**, which can be launched from Sukhoi-30, Light Combat Aircraft (LCA), Mig-29 and Mig-29K.
  - Globally, very few countries have expertise and capabilities to design and produce this class of weapon system.
- Working → The missile is designed to **engage and destroy highly manoeuvring supersonic aircraft**. The missile has **all weather day and night capability**.
- Successful development of ASTRA weapon system by Defence Research and Development Laboratory (DRDL) Hyderabad and production by Bharat Dynamics Limited (BDL), Hyderabad is a **major contribution towards Atmanirbhar Bharat**.

## 8. Super Hornet Fighter Jet

### Why in News?

- Boeing has announced the successful demonstration of the compatibility of its F/A-18 Super Hornet fighter jets with the Indian Navy's aircraft carriers as part of its pitch for the Navy's fighter procurement.

### About

- What is it? → It is the **world's most lethal, advanced, combat-proven, multi-role frontline fighter-jet.**
- Developed by → The jet has been developed by **US Aerospace Company, Boeing.**
- Key Features →
  - Multi-role Superiority → Capable of **tactical strikes, air reconnaissance, air defense,** and **maritime roles**
  - Cutting-edge Technologies → **Enhanced computing and data link, advanced cockpit system,** signature improvements
  - Lifecycle Affordability → **Lowest cost per flight hour** among all U.S. tactical fighter in production. High mission capability rates
  - Future Ready → Unrivaled growth **potential to complement future air wing capabilities.**

## 9. Medium Range Surface to Air Missile (MRSAM)

### Why in News?

- Recently, the maiden test of the Medium Range Surface to Air Missile (MRSAM) for the Indian Army has been conducted.

### About

- What is it? → It is a **surface to air missile** developed jointly by Defence Research and Development Organisation (DRDO), **India** and **Israel Aerospace Industries (IAI), Israel** for use by the Indian Army.
- Purpose → It has been developed to **neutralise airborne threats** like jets, missiles and rockets, including projectiles launched simultaneously.
- Key Features →
  - The Missile consists of a **command and control post, multi-function radar** and **mobile launcher system.**
  - It has a **strike range** of nearly **100 km**, weighs around 2.7 tonne and can carry a **payload of 60 kg.**
  - The missile has a speed of **Mach 2** and **possesses high degrees** of **maneuverability** at the target interception range.
  - It is a vertically launched **supersonic missile powered** by a **dual-pulse solid propulsion system.**
- It is used by the **Army, Navy and Air Force** as different variants.

## 10. Shaheen-IX

### Why in News?

- China has recently asked India to "objectively" view the on-going month-long military exercises taking place between the Chinese and Pakistani air forces, amid increasing tensions with India.

### About

- "Shaheen-IX" or Eagle-IX exercise, is an exercise between the **Pakistan Air Force and the People's Liberation Army Air Force.**



- Shaheen-IX is the **ninth in the series** which is **conducted each year** in both countries on alternate basis.
- The **first** such drill was **held in Pakistan** in 2011.
- Other exercises between Pakistan and china:
  - **Sea Guardians**: Bilateral Naval exercise.
- India China exercises:
  - **Hand In Hand**: Bilateral Army exercise.

## 11. Passage Exercise (PASSEX)

### Why in News?

- Indian Navy ship INS Kiltan, which arrived in Vietnam recently to deliver relief material under Mission Sagar-III, will hold a Passage Exercise (PASSEX) with the Vietnamese Navy in the South China Sea (SCS).

### About Passage Exercise

- A passing exercise is an exercise done between two navies to ensure that the **navies are able to communicate and cooperate** in **times of war** or **humanitarian relief**.
- Common drills include **flashing light drills**, **semaphore drills**, and **flaghoist drills**.

### 👉 Mission Sagar

- It was launched by the Indian government as a **part of India's Humanitarian Assistance and Disaster Relief** (HADR) **assistance** to **Friendly Foreign Countries** during the ongoing pandemic.
- Mission Sagar-I → It was undertaken in **May-June 2020**, wherein India reached out to **Maldives**, **Mauritius**, **Seychelles**, **Madagascar** and **Comoros**, and provided food aid and medicines.
- Mission Sagar-II → As part of Mission Sagar-II, **Indian Naval Ship Airavat** has delivered food aid to **Sudan**, **South Sudan**, **Djibouti** and **Eritrea**.
- Mission Sagar-III → As part of Mission Sagar-III, Indian Navy **Ship Kiltan** delivered **15 Tonnes Of Aid To Vietnam For Flood Relief**.
- Significance → These deployments are also in **consonance with the Prime Minister's vision** of **Security and Growth for All in the Region** (SAGAR).

### 👉 INS Kiltan

- This is the **third of the four Kamorta-class corvettes** being built under **Project 28**.
  - Other Three → **INS Kamorta**, **INS Kadmatt** and **INS Kavaratt**.
- Features →
  - The ship hosts a **predominantly indigenous cutting-edge weapons**.
  - It is India's first major warship to have a **superstructure of carbon fibre composite material** resulting in improved stealth features, lower top weight and maintenance costs.
  - In the future, it would also be installed with short range SAM system and carry an integral ASW helicopter.
- Name → The ship derives its name from one of the **islands in Aminidivi group** of the **Lakshadweep** and **Minicoy group of islands**.

## 12. Kamov-226T

### Why in News?

- The Indian Army is going to approach the Defence Ministry for a waiver to take the Kamov-226T (Ka-226T) utility helicopters with Russia.

### About

- The Kamov Ka-226 is a **small, twin-engine Russian utility helicopter**.
- Design → The Ka-226T is a design of **Russia's famed Kamov design bureau**.
- Assembling → A **joint venture India Russia Helicopters Limited** (IRHL) has been set up between Hindustan Aeronautics Limited (**HAL**) and Russian Helicopters (**RH**) which will assemble the helicopters in India.
- Payload Capacity → It is a **light helicopter**, with a maximum take-off weight of **over 3.5 tonnes** and can carry a **payload of up to 1 tonne**.
- Special Features →
  - The Ka-226T uses **coaxial rotors**, that is, it has **two sets of rotors mounted** one on top of the other and typically no tail rotor.
    - Coaxial rotors give a **helicopter improvements in lift** and **payload capacity** over conventional choppers.
  - The Ka-226T also has a **unique, detachable 'mission' compartment** instead of a conventional cabin.
    - This allows the helicopter to be **adapted for different roles** such as surveillance and cargo delivery.

# History and Culture

## 1. Guru Nanak Jayanti

### Why in News?

- The President of India has greeted the citizens on the occasion of Guru Nanak Jayanti.

### About

- Guru Nanak, also referred to as **Baba Nanak**, was the **founder of Sikhism** and is the **first of the ten Sikh Gurus**.
- Birth → In **1459** at Talwandi Rai Bhoie village near Lahore, which was later renamed as **Nankana Sahib**.
- Contributions →
  - Initiated **inter-faith dialogue way back in the 16th century** and had conversations with most of the religious denominations of his times.
  - Wrote compositions which were included in the **Adi Granth**, compiled by **Guru Arjan** (1563-1606), the **fifth Sikh guru**.
  - This came to be known as **Guru Granth Sahib after the additions made by the 10th sikh guru Gobind Singh** (1666-1708).
  - Advocated the '**Nirguna**' (devotion to and worship of formless divine) form of bhakti.
  - Rejected **sacrifices, ritual baths, image worship, austerities**.
  - Set up rules for **congregational worship** (**Sangat**) involving collective recitation.
  - Gave the basic mantra of '**Ek Onkar**' to his followers and insisted on treating all **human beings equally**, without discriminating on the **basis of caste, creed** and **gender**.
- Death → In **1539 at Kartarpur, Punjab**.

## 2. Hornbill Festival

### Why in News?

- Hornbill Festival is celebrated in Nagaland to encourage inter-tribal interaction.

### About Hornbill Festival

- What is it? → The festival is **celebrated annually** in the **first week of December** in order to preserve, protect and **revive the uniqueness and richness of the Naga heritage**.
- The festival is considered the "**Festival of Festivals**" in Nagaland.
- Organized by → **Nagaland State Tourism and Art & Culture Departments**.
- Aim → To **encourage inter-tribal interaction** and **to promote culture** through colourful performances, crafts, sports, food fairs, games and ceremonies.
- Named after → The festival is named after the **Great Indian hornbill**, the large and colourful forest bird which is displayed in the folklore of most of the state's tribes.

### Great Indian Hornbill

- It is one of the **larger members of the hornbill family**. It is found in the **Indian subcontinent** and **Southeast Asia**.

- State Bird → It is the state bird of **Kerala** and **Arunachal Pradesh**. But it is not a state bird of Nagaland.
- The great hornbill is **long-lived, living for nearly 50 years** in captivity.
- Conservation Status →
  - IUCN Status: **Vulnerable**
  - CITES: **Appendix I**
  - **Schedule I** of the Wildlife Protection Act, 1972
- Threats → **Logging, Forest clearance for agriculture**, susceptible to hunting pressure among others.

### 3. Bhagyalakshmi temple

#### Why in News?

- Union Home Minister Amit Shah visited the Bhagyalakshmi temple while on a trip to Hyderabad. And Uttar Pradesh Chief Minister Yogi Adityanath made a pitch for renaming the city as Bhagyanagar.

#### About

- Bhagyalakshmi temple is a **Hindu temple** located in **Hyderabad, India**.
- Features → Bhagyalakshmi temple is a **small temple** dedicated to **Goddess Lakshmi**, adjacent to the southeast minar of Charminar.
- Made of **bamboo poles** and **tarpaulins**, it has a **tin roof**, and the southeast minar forms its back wall.
- History → There is **no definitive version** on **how and when exactly it came up**, but it has been there since at least the **1960s**. Secunderabad MP G Kishan Reddy claimed that the temple predates Charminar, whose **construction was started in 1591**.
- Sources in the **Archaeological Survey of India** said the temple **encroaches on the protective perimeter of Charminar**.



### 4. Annapurna Idol

#### Why in News?

- PM has announced that an ancient idol of the goddess Annapurna, stolen from India about a century ago, is being brought back from Canada.

#### About

- Annapurna, also spelt Annapoorna, is the **goddess of food**.
- This **18th-century idol**, **carved in the Benares** was **stolen** from a **temple of Varanasi** and smuggled out around 100 years ago somewhere around 1913.
- Now is part of the **University of Regina, Canada's collection at the MacKenzie Art Gallery**.
- The idol holds a **bowl of kheer** in one hand and a spoon in the other.



### 5. Ramayan Cruise Tour

## Why in News?

- Union Minister of Ports, Shipping and Waterways announced that 'Ramayan Cruise Tour' on the Saryu river in Ayodhya will be launched soon.

## About

- What is it? → It will be the **first-ever luxury Cruise service** on the **Saryu river** (Ghagra/National Waterways-40) **in Ayodhya, Uttar Pradesh**.
- It aims to give **mesmerizing experience to devotees** with one-of-its-kind spiritual journeys while cruising through the famous ghats of the holy river Saryu.

### 📌 Saryu river

- The Sarayu is a river that **originates in Uttarakhand**.
- It flows through **Uttar Pradesh** in India.
- It is a tributary of the **Sharda River**.
- This river is of ancient significance as it is **mentioned in the Vedas and the Ramayana**.
- The river is formed at the **confluence of rivers karnali and mahakali**.



## 6. Aadi Mahotsav

### Why in News?

- Union Minister for Tribal Affairs has launched the virtual edition of Aadi Mahotsav in Madhya Pradesh.

### About

- What is it? → It is a joint initiative of **Ministry of Tribal Affairs**, Government of India & Tribal Cooperative Marketing Development Federation of India (**TRIFED**).
- Launched in → **2017**.
- Objective → To **familiarise the people** with the **rich and diverse craft, culture** of the tribal communities across the country in one place.

### 📌 TRIFED:

- Established in → **1987**.
- Parent Department → under the administrative control of the **Ministry of Tribal affairs**.
- Aim → It aims to **provide good price to the products** made or collected from the forest by the tribal people.
- TRIFED has its registered and Head Office located in **New Delhi** and has a **network of 13 Regional Offices** located at various places in the country.

### 📌 Tribes India e-market place:

- Tribes India e-Marketplace is an **ambitious initiative** through which **TRIFED** aims to onboard **5 lakh tribal producers** for sourcing of various handicraft, handloom, natural food products across the country and **brings to you the best of tribal produce**.
- The suppliers comprise of **individual tribal artisans, tribal SHGs, Organisations/ Agencies/ NGOs** working with tribals.
- It will **showcase the produce and handicrafts** of tribal enterprises from across the country.
- It will help them **market their products directly**.

#### 📌 **TRIFOOD Scheme**

- TRIFOOD Scheme is a joint initiative of the Ministry of Food Processing Industry, Ministry of Tribal Affairs and TRIFED and it **promotes value addition to Minor Forest Produce** (MFP).

## 7. Nisarg Gram

### Why in News?

- Ministry of AYUSH will develop Nisarg Gram campus at Pune as the 21st Century abode of Naturopathy.

### About

- What is it? → “Nisarg Gram” will be the name of the **upcoming new campus** of National Institute of Naturopathy (NIN) at Pune.
- Purpose → This will invoke **recollections of Mahatma Gandhi’s Nature Cure campaign** of **1946** at the “**Nisarg Upchar**” **Ashram** a village near Pune.
- Nisarg Gram will have **many innovations** and **novelties incorporated** in the project per se and the curriculum of the Naturopathy course.
- It is a **future-orientated institute** which has a science-based approach, Gandhian spirit and social relevance.

#### 📌 **National Institute of Naturopathy (NIN)**

- NIN, Pune is an **Autonomous Body** under the **Ministry of AYUSH**.
- It is the **inheritor of a Gandhian heritage**, having been developed out of a Nature Cure institution of which the Mahatma was one of the founders.
- The institution was called **All India Nature Cure Foundation**.
- It was set up under Gandhi’s leadership in **1945** at the same premises where the NIN presently functions.
- It was subsequently **taken over by the Central Government** and structured into the present National Institute of Naturopathy.

## 8. Hampi Stone Chariot

### Why in News?

- Archaeological Survey of India(ASI) has placed wooden barricades around the famous stone chariot at Vijaya Vittala Temple Complex in Hampi for protection.

### About Hampi Stone Chariot

- What is it? → It is an **iconic monument** located in front of **Vijaya Vittala Temple** in **Hampi, Karnataka**.

- Dedicated to → It is a shrine dedicated to **Garuda**, the **official vehicle of Lord Vishnu**.
- History → It was built in the **16th century** by the orders of **King Krishnadevaraya**, a Vijayanagara ruler.
  - Vijayanagara rulers reigned from **14th to 17th century CE**.
- Style → Built in **Dravidian style**.
- Significance → It is **among three famous** stone chariots in India, the other two being in **Konark** (Odisha) and **Mahabalipuram** (Tamil Nadu).

### 👉 Vittala Temple

- It was built in the **15th century** during the **rule of Devaraya II**, one of the rulers of the Vijayanagara Empire.
- The temple is **located in Hampi**, near the **banks of the Tungabhadra River**.
- It is dedicated to **Vittala** and is also called **Vijaya Vittala Temple**.
- Vittala is said to be an **incarnation of Lord Vishnu**.
- **Dravidian style** adorns the built of the complex, which is further enhanced with elaborate carvings.

### 👉 Hampi

- It was the **last capital** of the last **great Hindu Kingdom** of **Vijayanagar**.
- It was a **part of the Mauryan Empire** back in the **third century BC**.
- It is a **UNESCO World Heritage site**.
- Its name is derived from **Pampa** which is the old name of the **Tungabhadra River** on whose banks the city is built.
- The site used to be **multi-religious** and **multi-ethnic**; it included **Hindu and Jain monuments** next to each other.
- **Architecture:**



- It has been **described by UNESCO** as an “**austere, grandiose site**” of more than 1,600 surviving remains of the last great Hindu kingdom in South India.
- The buildings here predominantly followed **South Indian Hindu arts and architecture** dating to the **Aihole-Pattadakal styles**, but the Hampi builders also used **elements of Indo-Islamic architecture** in the Lotus Mahal, the public bath and the elephant stables.
- **Hemkunta Hill**, south of the Virupaksha temple contains early ruins, Jain temples and a monolithic sculpture of Lord Narasimha, a **form of Lord Vishnu**.

## 9. Tharu tribals

### Why in News?

- The Uttar Pradesh government has recently embarked upon a scheme to take the unique culture of its ethnic Tharu tribe across the world.

### About Tharu tribals

- Meaning of ‘Tharu’ → The word tharu is believed to be derived **from sthavir**, meaning followers of **Theravada Buddhism**.



- Habitat → The Tharu community belongs to the **Terai lowlands, amid the Shivaliks or lower Himalayas**.
- Scheduled Tribe → Tharu is a scheduled tribe in the **states of Uttarakhand, Uttar Pradesh and Bihar**.
- Occupation → Most of them are **forest dwellers**, and some practice **agriculture**.
- Culture →
  - They speak various **dialects of Tharu**, a language of the **Indo-Aryan subgroup**, and variants of Hindi, Urdu, and Awadhi.
  - **Tharus worship Lord Shiva** as **Mahadev**, and call their supreme being “**Narayan**”, who they believe is the provider of sunshine, rain, and harvests.
  - Tharu **women** have **stronger property rights** than is allowed to women in mainstream North Indian Hindu custom.
  - Standard items on the Tharu plate are **bagiya** or **dhikri** – which is a **steamed dish of rice flour** that is eaten with chutney or curry – and **ghonghi**, an edible snail that is **cooked in a curry made of coriander, chili, garlic, and onion**.

## 10. World Heritage City

### Why in News?

- Gwalior and Orchha of Madhya Pradesh have been included in the list of World Heritage City by UNESCO.

### About Gwalior

- It was established in the **9th century** and ruled by **Gurjar Pratihara Rajvansh, Tomar, Baghel Kachvaho and Scindias**.
- The city is known for its **palaces and temples**, including the intricately carved Sas Bahu Ka Mandir temple.
- The **Gwalior Fort** occupies a **sandstone plateau** overlooking the city and is accessed via a **winding road lined** with sacred Jain statues.
- Within the fort's high walls is the **15th-century Gujari Mahal Palace**, now an **archaeological museum**.

### 👉 Orchha

- Orchha located in the **Bundelkhand region of Madhya Pradesh** was the **16th century** capital of the erstwhile **Bundela dynasty**.
- Orchha Raj Mahal, **Jahangir Mahal, Ramaraja Mandir, Rai Praveen Mahal, Laxminarayan Mandir** and many other famous temples and palaces are famous for a unique confluence of Rajput and Mughal architectural influences.

### 👉 UNESCO World Heritage Cities Programme:

- It is **one of six thematic programmes** formally approved and monitored by the UNESCO World Heritage Committee.
- Aim → To **assist States Parties** in the **challenges of protecting and managing their urban heritage**.

### 👉 Urban Landscape City Programme:

- It was adopted in **2011** at UNESCO's General Conference.

- This programme approach to **managing historic urban landscapes** is holistic by integrating the goals of urban heritage conservation and those of social and economic development.

#### 📌 UNESCO

- The United Nations Educational, Scientific and Cultural Organization is a **specialised agency of the United Nations** aimed at **promoting world peace and security** through international cooperation in education, the sciences, and culture.
- Headquarters → **Paris, France**.
- Founded → **16 November 1945**.

## 11. Bakhshali manuscript

### Why in News?

- A black dot on a Bakhshali manuscript has been identified by Oxford University as the first recorded use of the mathematical symbol for zero.

### About

- The earliest recorded example of the use of zero was previously believed to be a **ninth-century inscription on a wall in a temple at Gwalior in India**.
- Bakhshali manuscript is a **third-century Indian mathematical manuscript** written in ink on birch bark.
- It was **found in 1881** in the Vicinity of the village of Bakhshali, near Peshawar, Pakistan.



## 12. Subramanya Bharati

### Why in News?

- Recently, the PM has addressed the International Bharati Festival 2020, virtually organised by the Vanavil Cultural Centre (Tamil Nadu). The event celebrates the 138th birth anniversary (11th December 2020) of Tamil poet and writer Mahakavi Subramanya Bharati.

### About

- Early life → Subramaniya Bharathiyar was born on **11th December 1882**, in a village called **Ettayapuram in Tirunelveli District in Tamil Nadu** and his childhood name was **Subbiah**.
- His contribution and works → He is considered as one of **India's greatest poets** and was known as **Mahakavi Bharathiyar**.
- His **songs on nationalism and freedom of India** helped to rally the masses to support the Indian Independence Movement in Tamil Nadu.
- Few of his poems are: "**Kannan Pattu**, **Nilavum Vanminum Katrum**, **Panchali Sabatam** and **Kuyil Pattu**". He published the sensational "**Sudesa Geethangal**" in 1908.

- He necessarily employed prose to communicate, and his writings in **Swadesamitran** and India made an **important contribution to Tamil political vocabulary**.
- He **attended** the annual sessions of **Indian National Congress** and **discussed national issues with extremist leaders** like Bipin Chandra Pal, B.G. Tilak and V.V.S. Iyer.
- His participation and activities in **Benaras Session (1905) and Surat Session (1907)** of the Indian National Congress impressed many national leaders for his patriotic fervour.
- Bharthi as a social reformer →
  - He was also **against caste system**. He declared that there were **only two castes-men and women** and nothing more than that. Above all, he himself had **removed his sacred thread**.
  - He **condemned certain Shastras** that **denigrated women**. He believed in the equality of humankind and criticised many preachers for mixing their personal prejudices while teaching the Gita and the Vedas.

#### **Bharathi Award**

- The Bharati Award was instituted in **1994** by **Vanavil Cultural Centre**.
- Every year, it is being conferred on eminent persons who have done **laudable service in any field of social relevance** and thus **worked towards the fulfilment of Bharati's dreams**.

### 13. Vijay Diwas

#### Why in News?

- India will celebrate 50 Years of Indo-Pak War, also called Swarnim Vijay Varsh on 16th December 2020.

#### About Vijay Diwas

- Vijay Diwas is observed on **16th December** every year to mark **India's victory over Pakistan** in the **1971 war**.
- The Government of India **decided on 3rd December 1971**, that India would go for war with Pakistan to **save Bengali Muslims and Hindus**.
- This war was fought between India and Pakistan **for 13 days**.
- On 16th December 1971, the chief of the Pakistani forces with **93,000 soldiers** had **surrendered unconditionally** to the allied forces consisting of **Indian Army and Mukti Bahini** in Dhaka.
  - **Mukti Bahini** refers to the armed organizations that fought against the Pakistan Army during the Bangladesh Liberation War. It was a guerrilla resistance movement.
- Bangladesh was born on this day. Hence, **Bangladesh celebrates** its independence day (**Bijoy Dibos**) on 16th December every year.
- **Four Victory Mashaals** will be lit from the Eternal Flame of National War Memorial. These Mashaals will be **carried to various parts of the country** including to villages of **Param Vir Chakra** and **MahaVir Chakra Awardees** of 1971 War.
- **Soil from the villages** of these Awardees and from areas where major battles were fought in 1971 are being **brought to the memorial** in New Delhi.

### 14. Thrust to indigenous games

#### Why in News?

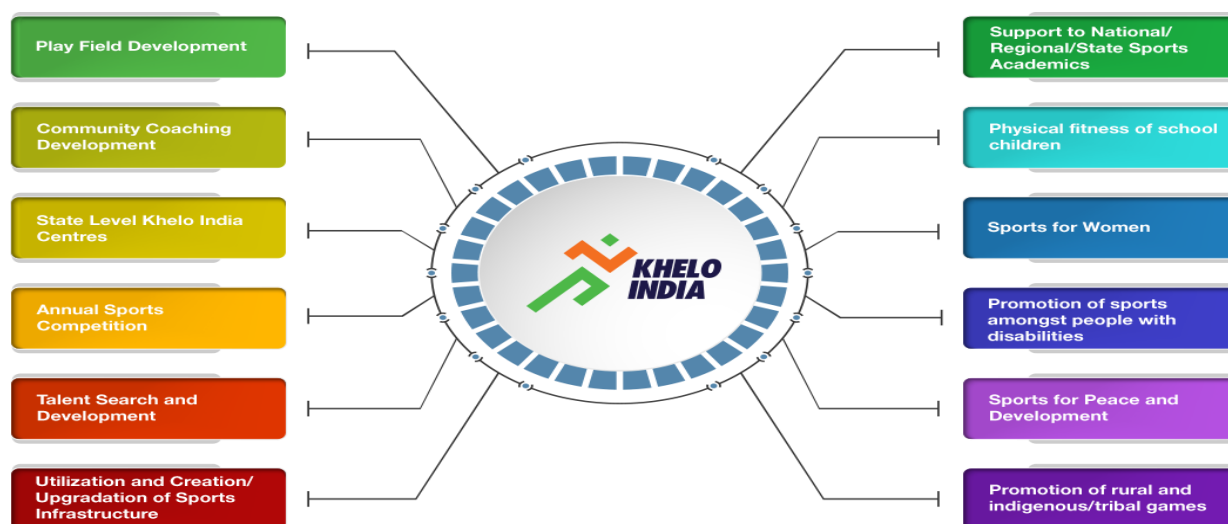
- The inclusion of four Indigenous Games to be a part of Khelo India Youth Games 2021, scheduled to take place in Haryana. The games include: Gatka, Kalaripayattu, Thang-Ta and Mallakhamba.

## About

- **Kalaripayattu** → also known as **Kalari** is an **Indian martial art** that originated in **Kerala**. It is believed to be the oldest **surviving martial art in India**.
- **Thang-Ta** → also known as **Huyen Lallong** is a martial art form of Manipur and has been **practised by the Meiteis**. It is dedicated to **fighting skill and worship**.
- **Gatka** → It is a **traditional martial art form** originated from **Punjab**. It is associated with the **Nihang Sikh Warriors** and is used both as **self-defense as well as a sport**.
- **Mallakhamba** → It is a **traditional sport** from Indian subcontinent and has been well-known in **Madhya Pradesh** and **Maharashtra**. It involves gymnasts performing **aerial yoga or gymnastic postures and wrestling grips** in concert with a vertical stationary or hanging wooden pole, cane, or rope.

## 👉 Khelo India Programme

- Introduced to **revive the sports culture** in India at the **grass-root level** by building a strong framework for all sports played in the country and establish India as a **great sporting nation**.
- Implemented by → **Ministry of Youth Affairs and Sports**.
- Under the programme, **talented players** are **identified in priority sports disciplines** at various levels by High-Powered Committee and each will be provided **annual financial assistance of Rs. 5 lakh for 8 years**.
- Under this scheme, **State wise budget allocation** is **not made** and projects are sanctioned **based on their viability**. Funds are released project wise.
- Further, **Khelo India School Games** are also conducted as a part of the Khelo India programme.
- Components of the programme → To accomplish the above objectives, Khelo India programme has been **divided into 12 verticals**, namely:



## 15. Khudiram Bose

### Why in News?

- Union Home Minister has visited the native village of Bengali revolutionary Khudiram Bose in Midnapore, West Bengal.

## About

- Bose was **born in 1889** at a small village in **Midnapore district**.
- From his adolescent years, he was drawn towards **revolutionary activities**, being **inspired by** a series of public lectures given by **Sri Aurobindo** and **Sister Nivedita**, when the duo visited Midnapore in the early 1900s.
- In **1905**, when **Bengal was partitioned**, he actively **participated in protests** against the British.
- At the age of 15, Bose joined the **Anushilan Samiti**, an early 20th century organisation that propounded revolutionary activities in Bengal.
- Revolutionary activities → The deciding moment of Bose's life came in **1908** when he along with another revolutionary, **Prafulla Chaki** were assigned the **task of assassinating** the **district magistrate of Muzaffarpur, Kingsford**.

## 16. Sentinelese

### Why in News?

- Anthropological Survey of India has said that any exploitation of the North Sentinel Island of the Andamans for commercial and strategic gain would spell the death knell for its occupants, the Sentinelese, a most secluded, particularly vulnerable tribal group(PVTG).

### About

- Who are the Sentinelese? → Sentinelese also known as the **Sentineli** are a **negrito tribe** who live on the **North Sentinel Island of the Andaman**.
- The inhabitants are **connected to the Jarawa** on the **basis of physical**, as well as **linguistic similarities**.
- Occupation → Sentinelese are **hunter-gatherers**, likely using bows and arrows to hunt and more rudimentary methods to catch local seafood.
- Language → It is known that the **Sentinelese speak** their **own language**, the Sentinelese language.
- Population → Currently, their numbers are believed to be **less than 150 and as low as 40**.
- How are they protected? → The Govt. of India has issued the **Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Regulation, 1956** to declare the traditional areas occupied by the tribes as reserves and prohibited entry of all persons except those with authorisation.
- **Genome studies** indicate that the Andaman tribes could have been on the islands **even 30,000 years ago**.

### 📌 Anthropological Survey of India (AnSI):

- Anthropological Survey of India is the **apex** Indian government organisation involved in **anthropological studies and field data research** for **human and cultural aspects**, working primarily in the fields of physical anthropology and cultural anthropology.
- Founded in → **1945**.
- Parent organisation → **Ministry of Culture**.
- Headquarters → **Kolkata**.

### 📌 Tribes of Andaman and Nicobar:

- The Andaman Islands are home to four '**Negrito**' tribes namely the **Great Andamanese**, **Onge**, **Jarawa** and **Sentinelese**. Nicobar Islands are home to two '**Mongoloid**' tribes – the Shompen and Nicobarese.

## 17. Netaji Subhas Chandra Bose

### Why in News?

- Recently, The Government decided to constitute a High Level Committee headed by the Home Minister, Shri Amit Shah to commemorate the 125th Birth Anniversary of Netaji Subhas Chandra Bose.

### About Committee

- This High-Level Committee will decide on the **activities** for a **one year long commemoration** starting 23rd January, 2021.
- The Committee will also **lend guidance to the commemoration activities** in Delhi, Kolkata and other places associated with Netaji and Azad Hind Fauj, both in India as well as overseas.

### Netaji Subhas Chandra Bose

- He was born on **January 23, 1897** in **Cuttack, Orissa**.
- He was strongly influenced by **Swami Vivekananda's teachings** and was known for his **patriotic zeal as a student**.
- He joined the **noncooperation movement** started by **Mohandas K. Gandhi**.
- He was advised by **Gandhi to work under Chitta Ranjan Das**, a politician in Bengal.
  - He became a youth educator, journalist, and commandant of the Bengal Congress volunteers.
- He was elected president of the **Indian National Congress in 1938** and formed a national planning committee, which formulated a policy of broad industrialization.
- He founded the **Forward Bloc**, hoping to rally radical elements, but was again **incarcerated in July 1940**.
- In **1943**, he proclaimed the establishment of a provisional independent Indian government, and his so-called **Indian National Army (Azad Hind Fauj)**.
- He is reported to have **died** in a **plane crash, mystery shrouds his death**.
- Most famous quote, '**Give me blood, and I shall give you freedom!**'

## 18. Srinivasa Ramanujan

### Why in News?

- Every year, Srinivasa Ramanujan's birth anniversary on December 22 is commemorated as National Mathematics Day.

### About

- Ramanujan was born in **1887 in Erode, Tamil Nadu** (then Madras Presidency) in an Iyengar Brahmin family.
- At age 12, despite lacking a formal education, he had **excelled at trigonometry** and **developed many theorems** by himself.
- Living in **dire poverty**, Ramanujan then **pursued independent research in mathematics**.
- In **1914**, Ramanujan arrived in **Britain** who **worked with GH Hardy** and in 1917, Ramanujan was elected to be a **member of the London Mathematical Society**.
- His work in the **number theory** is especially regarded. He was recognised for his mastery of **continued fractions**, and had worked out the **Riemann series, elliptic integrals, hypergeometric series, and the functional equations of the zeta function**

- Ramanujan could not get accustomed to the England's diet, and **returned to India in 1919**. Ramanujan's health continued to deteriorate, and he **died in 1920** at the **age of 32**.
- The **Man Who Knew Infinity (2015)** was a **biopic** on the mathematician.

## 19. Abdul Rahim Khan-i-Khanan

### Why in News?

- Rahim Khan's tomb was opened to the public after six years of restoration work — perhaps the largest conservation project ever undertaken for any monument of national importance in India.

### About

- Abdul Rahim Khan-i-Khanan (1556 – 1627), popularly known as **simply Rahim**, was a **poet** who **lived in India** during the **rule of Mughal emperor Akbar**.
- Abdul Rahim was the **son of Bairam Khan**, Akbar's trusted guardian and mentor.
- He was **one of the nine important ministers** (dewan) in his court, also known as the **Navaratnas**.
- Rahim is known for **his Hindi dohe** (couplets) and his **books on astrology**.
- Apart from writing various dohas, Rahim **translated Babar's memoirs, Baburnama** from **Chagatai language to Persian language**.
- He had an excellent command over the **Sanskrit language**. In Sanskrit, he wrote **two books** on **astrology, Khetakautukam** and **Dwatrimshadyogavali**.
- The village of **Khan Khana**, which is named after him, is **located in the Nawanshahr district of Punjab**.

## 20. Intangible Cultural Heritage by the UNESCO

### Why in News?

- Singapore's vibrant street hawker culture was recently designated as an Intangible Cultural Heritage by the UNESCO.

### About

- Street Hawker culture is **one of Singapore's most popular attractions**.
- It is now **part of a list** that includes practices such as yoga from India, reggae music from Jamaica, Finland's sauna culture and Turkey's endangered whistled language.

### 👉 Intangible cultural heritage listed in India

- |   |   |
|---|---|
| • <b>Kumbh Mela</b>   | • <b>Buddhist chanting of Ladakh</b> : recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir. |
| • <b>Navroz</b> – Parsi New Year  | • <b>Chhau dance</b>  |
| • <b>Yoga</b>   | • <b>Kalbelia folk songs</b> and dances of Rajasthan  |
| • <b>Traditional brass and copper craft</b> of utensil making among the Thatheras of Jandiala Guru, Punjab. | • <b>Ramman</b> , religious festival and ritual theatre of the Garhwal Himalayas, India   |
| • <b>Sankirtana, ritual singing, drumming and dancing of Manipur</b>  | • <b>Mudiyettu</b> , ritual theatre and dance drama of Kerala   |



- **Kutiyattam**, Sanskrit theatre
- **Tradition of Vedic chanting**
- **Ramlila**, the traditional performance of the Ramayan

## 21. Zomi ethnic group

### Why in News?

- Manipur's Zomi ethnic group has renewed its demand for the creation of Zoland Territorial Council (ZTC) under the Sixth Schedule of the Constitution, a self-administered zone on the lines of the Bodoland Territorial Council in Assam.

### About

- The Zou people or Zomi are an **indigenous community** living along the **frontier of India and Burma**. They are a **sub-group of the Zo people** (Mizo-Kuki-Chin).
- In India, they **live with and are similar in language** and habits to **the Paite** and **the Simte peoples**.
- In India, the Zou are **officially recorgnized** as one of the **thirty-three indigenous peoples** within the state of Manipur, and are one of the **Scheduled tribes**.
- According to the **2001 Census**, the Zou/Jou population in Manipur is **around 20,000, less than 3%** of the population.
- The community is concentrated in **Churachandpur** and **Chandel districts of Manipur**.

## 22. Madan Mohan Malaviya

### Why in News?

- The Prime Minister of India paid tribute to Pt. Madan Mohan Malaviya on his 159th birth anniversary (25th December, 2020).

### About

- Madan Mohan Malaviya was a **freedom fighter** and **social reformer**.
- He had served as the **President of the INC** on **four occasions**.
- He was awarded the **Bharat Ratna** posthumously in **2014**.
- He was the editor of a Hindi magazine, '**Hindusthan**'.
- He became the editor of the '**Indian Opinion**' in 1889. He also started a Hindi weekly '**Abhyudaya**', an English daily '**Leader**', a Hindi newspaper '**Maryada**'.
- Pandit Malaviya was instrumental in founding the **Benares Hindu University in 1916**. He also became its **Vice-Chancellor till 1939**.
- He was **opposed** to **separate electorates** to Muslims and the Lucknow Pact.
- He was also **against** the **INC's participation** in the **Khilafat Movement**.
- He was a **participant** in the **Second Round Table Conference** in **1931**.
- He started the **Ganga Mahasabha** to oppose construction of dams in the Ganga.
- He was also a **social reformer** who **opposed untouchability**. He worked for the temple entry of Dalits at the Kalaram Temple at Nashik, Maharashtra.
- He also founded the organisation **Shri Mathura Vrindavan Hasanand Gochar Bhoomi** in Vrindavan.

## 23. Zari-Zardozi

### Why in News?

- Madhya Pradesh Government is organizing 'Raag-Bhopali' exhibition to promote Zari-Zardozi crafts of Bhopal.

### About

- Embroidery done with metallic threads is called **kalabattu** and **forms the zari**.
- The main zari production centres are **Bhopal in Madhya Pradesh**.
- Process →
  - Here the **metal ingots** are **melted into metal bars** called **pasa** from which lengths are got by beating it after treatment.
  - This is then pulled through **perforated steel plates** to **make it into wires**, followed by the **tarkashi process** to make it thin with rubber and diamond dies.
  - The last stage is called **badla** where the **wire is flattened** and **twisted with silk or cotton thread** to become kasab or kalabattu.

### 👉 Different kinds of zari work

- Zardozi → This is a **heavy and more elaborate embroidery** work which uses varieties of **gold threads, spangles, beads** and **gota**.
- It is used to **embellish wedding outfits, heavy coats, cushions**, curtains etc.
- Kamdani → This is a **lighter needlework** which is done on **lighter material** like scarves, veils, and caps.
- Mina Work → This is thus called **owing to its resemblance with enamel work**.
- The embroidery is **done in gold**.

## 24. Namghars

### Why in News?

- The Union Home Minister Amit Shah distributed financial grants to 8,000 Namghars (traditional Vaisnavite monasteries of Assam) under the Assam Darshan programme.

### About

- Namghars are **traditional Vaisnavite monasteries of Assam**.
- Namghars (literally meaning Prayer House) are places for **congregational worship** associated with the entire Assamese community and the **Ekasarana sect of Hinduism**, in particular, that is **native to Assam**.
- Besides forming the primary structure used for worship, they also function as **meeting houses for congregations**, as well as **theatres for dramatic performances** (bhaona).
- The Namghar, also called the **kirtanghar**, is also the central structure in the **Sattras** (monasteries of the Ekasarana religion) where the other buildings are positioned around it.
- Namghars were introduced in Assam **by the Vaishnavite saints Damodaradeva, Madhavadeva and Sankaradeva** for Assamese people where they can culture and practice naam (devotional songs) and Bhakti of God (devotion).

## 25. Adopt a Heritage Project

## Why in News?

- Recently, a review meeting of the “Adopt a Heritage: Apni Dharohar, Apni Pehchaan” project was held.

## About

- The Scheme was launched on **World Tourism Day** i.e. **27th September, 2017**.
- Ministries/Agencies Involved → It is a collaborative effort by the **Ministry of Tourism**, **Ministry of Culture** and **Archaeological Survey of India (ASI)**, **State/UTs Governments**.
- Aim → To **develop tourism amenities** at heritage/ natural/ tourist sites spread across India for **making them tourist friendly**, in a **planned** and **phased manner**.
- How it works? →
  - The sites/monuments are selected on the basis of **tourist footfall and visibility** and can be **adopted by private and public sector companies and individuals** — known as **Monument Mitras** — for an initial period of five years.
  - The Monument Mitras are **selected by** the ‘**oversight and vision committee**,’ co-chaired by the Tourism Secretary and the Culture Secretary, on the basis of the bidder’s ‘vision’ for development of all amenities at the heritage site.
    - There is **no financial bid involved**.
  - The **corporate sector** is expected to **use Corporate Social Responsibility (CSR)** funds for the upkeep of the site.
- Amenities → The project primarily focuses on providing **basic amenities** that include cleanliness, public convenience, drinking water, ease of access for tourists, signage etc. and **advanced amenities** like Souvenir shop, Cafeteria, TFC etc.
- Significance → By allowing private players to build, operate and maintain “**tourist-friendly**” and “**world class amenities at these sites**”, the expectation is that the project will **boost domestic and international tourism**.

## 26. Thermopolium

### Why in News?

- Researchers have unearthed a thermopolium, Latin for hot drinks counter, in the Roman empire town of Pompeii, today one of the world’s largest and most significant archaeological sites.

### About

- The **snack food counter** called the thermopolium at the **Pompeii archaeological park’s Regio V** was partially **excavated in 2019**.
- It was found complete with an image of a **Nereid riding a sea-horse**, **decorative still-life frescoes**, **food residues**, **animals bones** and **victims** who died during the volcanic eruption of 79 CE.
- Significance →



- The find is significant because it shows the **variety of food consumed** by the residents of the town — **traces of pork, fish, snails** and **beef** have been found in the containers of the stall.
- It is also the first time an **entire thermopolium** has been **excavated, complete with pateras**, or **bronze drinking bowls, ceramic jars** used for cooking stews and soups, wine flasks etc.

### 👉 Pompeii

- Pompeii was a **Roman town** in **Southern Italy's Campania region** situated along the **Bay of Naples**.
- The town was **completely buried by volcanic ash** after the eruption of Mount Vesuvius in **79 CE**, over 2000 years ago.
- Located 8 km from the volcano, Pompeii was as a **resort town frequented by Rome's elite citizens** and **consisted of villas**, cafes, marketplaces and a 20,000-seat arena.

## 27. From our Home to your Home Campaign

### Why in News?

- During the 8th edition of "From Our Home to your Home" campaign, more than 35 new, attractive, immunity-boosting tribal products have found place in the Tribes India outlets and website.

### About

- The campaign had been launched 8 weeks back **by TRIFED** under the Ministry of Tribal Affairs in order to **source as many effective, natural, and attractive products from diverse indigenous tribes** across the country so that these can reach a **wide variety of audience**.
- Major Products included →
  - **Giant Rock Bee Honey** - Malayali tribes of Tamil Nadu
  - **Micro-beaded jewelry** - Patelia tribe from Madhya Pradesh.
  - **Organic varieties of dals and spices** - Vasava tribes of Gujarat
  - **Honey, jams** and **two unique variants of rice** - Kharwar and Oraon tribes of Jharkhand
  - **Wooden products** (chakla and belan) and **attractive metal jalis** – Adim Janjati tribes and Lohra tribes of Jharkhand.

### 👉 Malayali Tribe

- Malayali is a tribal group from the **Eastern Ghats in North Tamil Nadu**.
- With a population of **around 3,58,000**, they are the **largest Scheduled Tribe in that region**.
- The tribespeople are **usually hill farmers** and they **cultivate different types of millet**.

## 28. All India Trade Union Congress

### Why in News?

- Recently, All India Trade Union Congress (AITUC) turned 100.

### About

- AITUC was **formed in 1920** by leaders like **Bal Gangadhar Tilak, Lala Lajpat Rai, Narayan Malhar Joshi, Joseph Baptista, Diwan Chaman Lall** etc. to provide labour representation for India at the International Labor Organization (ILO).

- **Lala Lajpat Rai** was **elected as the first president** of AITUC and Dewan Chaman Lal as the first general secretary.
  - C.R. Das, Jawaharlal Nehru, Subhash Chandra Bose also served as AITUC presidents.
- **Gaya session** of the Congress (1922) **welcomed formation of the AITUC** and a committee was formed to assist it.
- Later, AITUC was split to form **National Trade Union Federation** (NTUF) in 1929 and **Red Trade Union Congress** (RTUC) in 1931.
- In the aftermath of Second World War, **AITUC played significant role** in the foundation of **World Federation of Trade Unions** (international federation of trade unions).

#### Other trade unions/ labour unions during freedom struggle

- **Bombay Mill hands' Association** was formed in **1890** under **N.M. Lokhande** was one of the first workers' organisations.
- First registered organised Trade Union in India "**Madras Labour Union**" by **B. P. Wadia** was **formed in 1918**
- In 1920, **Ahmedabad Textile Labour Association** was founded by **Anusuyaben Sarabhai** who was a pioneer of the women's labour movement in India.
- Other workers associations during the period are: **Amalgamated Society of Railway Servants of India and Burma** (1897), **Management the Printers Union, Calcutta** (1905) and the **Bombay Postal Union** (1907), **the Kamgar Hitavardhak Sabha** (1910) and **the Social Service League** (1910).

## Miscellaneous

### 1. BRICS Media Forum

#### Why in News?

- The Fifth BRICS Media Forum was held virtually recently. A common thread among members is a growing problem of disinformation or 'fake news'.

#### About

- China's Xinhua news agency came up with the idea of a BRICS Media Forum in **2015** to **promote media cooperation**.
- The BRICS Media Forum is a **high-level dialogue** among media organizations from **Brazil**, **Russia**, **India**, **China** and **South Africa**.
- The forum aims to →
  - Establish an **efficient coordination mechanism** among BRICS media.
  - Advance **innovation-driven media** development.
  - Gather **stronger momentum** for the development of BRICS countries through exchange and pragmatic cooperation under the mechanism.

### 2. Theremin instrument

#### Why in News?

- Theremin instrument turned 100 years old this year.

#### About

- What is it? → The theremin is an **electronic musical instrument** controlled without physical contact by the thereminist (performer).
- History → The instrument was invented in **1920**. It is named after its inventor, **Leon Theremin**, who patented the device in 1928.
- Functioning →
  - The instrument's controlling section usually consists of **two metal antennas** that **sense the relative position** of the **thereminist's hands** and control oscillators for frequency with one hand, and amplitude (volume) with the other.
  - The electric signals from the theremin are **amplified** and **sent to a loudspeaker**.

### 3. World AIDS Day 2020

#### Why in News?

- The World AIDS Day is observed on 1st December every year all over the world.

#### About

- What is it? → It was **founded in 1988** by the World Health Organization (WHO).

- Aim → To **create global solidarity among people** who live with HIV and also seek to destigmatize the health issue.
- Theme for 2020 → **“Global solidarity, resilient HIV services.”**

#### 👉 HIV and AIDS

- AIDS is a pandemic disease caused by the **infection of Human Immunodeficiency Virus** (HIV), which **damages the human immune system**.
- It is a **chronic, potentially life-threatening condition**.
- By damaging immune system, HIV **interferes** with the **body’s ability to fight infection and disease**.
- Transmitted → The virus can be transmitted through **contact with infected blood, semen or vaginal fluids**.
- AIDS symptoms → include **weight loss, fever or night sweats, fatigue** and **recurrent infections**.
- Treatment → **No cure** exists for AIDS.
- Strict adherence to **antiretroviral regimens** (ARVs) can slow the disease’s progress and prevent secondary infections and complications.

#### 👉 Joint United Nations Programme on HIV and AIDS (UNAIDS):

- It is the main **advocate for accelerated, comprehensive and coordinated global action** on the HIV/AIDS pandemic.
- Established in → **1994**.
- Headquartered in → **Geneva, Switzerland**.

## 4. Migratory Bird Festival

### Why in News?

- Bihar is holding a bird festival for the first time as part of its initiative to save migratory birds that arrive in the state in large numbers every year.

### About

- The three-day festival is being **organised in Bhagalpur district of Bihar**.
- The **60-km stretch** of Bihar’s Vikramshila Dolphin Sanctuary between Sultanganj and Kahalgaon had long been a **hub of migratory birds**.
- The **‘ringing of birds’** involves trapping them in nets and snares.
- Subsequently, they are **weighed** and their **details logged** before a metal ring inscribed with a **unique number is tied** to their tibia bone.
- This **helps birdwatchers** and **professional conservationists log** their presence across the globe.

## 5. Only organic farming allowed in Lakshadweep

### Why in News?

- Lakshadweep first UT to become 100% organic.

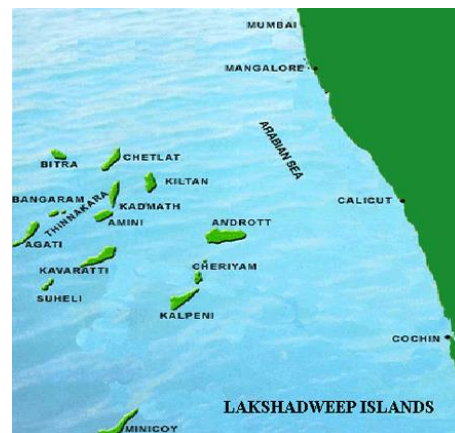
### About



- After Sikkim, Lakshadweep is the **first Union Territory** to become **100 per cent organic** as all farming is carried out **without the use of synthetic fertilisers and pesticides**, providing access to safer food choices and making agriculture a more environment-friendly activity.
- The **Ministry of Agriculture** has **declared** the island as organic.

#### Lakshadweep

- India's **smallest** Union Territory Lakshadweep is an **archipelago** consisting of **36 islands** with an **area of 32 sq km**.
- It is a **uni-district** Union Territory and comprises **12 atolls**, **three reefs**, **five submerged banks** and ten inhabited islands.
- The islands comprise 32 sq km.
- The Capital is **Kavaratti** and it is also the **principal town** of the UT.



## 6. CO-WIN

### Why in News?

- The Government of India has introduced a new digital platform called 'CO-WIN' for COVID-19 vaccine delivery.

### About

- This **user-friendly mobile app** for **recording vaccine data** is working as a beneficiary management platform having various modules.
- The platform will be used for **recording vaccine data** and will **form a database** of healthcare workers too.
- The app will have **separate modules** for **administrator**, **registration**, **vaccination**, **beneficiary acknowledgement** and **reports**.
- Once people start to register for the app, the platform will **upload bulk data** on **co-morbidity** provided by local authorities.
- In the process of **forming database of Healthcare Workers**, which is in an advanced stage across all States/UTs, data is presently being uploaded on the Co-WIN platform.

## 7. Molnupiravir

### Why in News?

- A new drug called Molnupiravir has been shown to stop the transmission of SARS-CoV-2 in 24 hours.

### About

- What is it? → Molnupiravir is an **experimental antiviral drug** which is **orally active** and was developed **for the treatment of influenza**.
- It is a drug of the synthetic nucleoside derivative **N4-hydroxycytidine**, and exerts its antiviral action through introduction of **copying errors** during **viral RNA replication**.

- Developed by → The drug is being developed by the biotechnology firm **Ridgeback Biotherapeutics** in **collaboration with pharmaceutical firm Merck**.
- The research team **repurposed MK-4482/EIDD-2801** against SARS-CoV-2 and tested it on ferrets.
- Significance → This is the first demonstration of an **orally available drug** to **rapidly block SARS-CoV-2 transmission** and it can be a **game-changer**.

## 8. UNESCO Award For Creative Economy

### Why in News?

- The UNESCO has decided to launch an international prize in the field of ‘creative economy’ in the name of Bangabandhu Sheikh Mujibur Rahman.

### About

- It shall start from **November 2021**.
- The **\$50,000 award** will be given away once in two years for **global economic initiatives** of the youth.
- The award will **recognise exceptional initiatives** taken **by cultural workers and organizations** in the **development of the creative economy**.
- UNESCO has declared 2021 as ‘**International Year of Creative Economy for Sustainable Development**’.

### 👉 Sheikh Mujibur Rahman

- He was a **Bangladeshi politician and statesman**.
- He is called the “**Father of the Nation**” in Bangladesh.
- He served as the **first President of Bangladesh** and later as the Prime Minister of Bangladesh from 1971 – 1975
- He was **assassinated** on **15 August 1975**.
- He is considered to be the **driving force behind the independence of Bangladesh**.
- He is popularly dubbed with the title of “**Bangabandhu**” by the people of Bangladesh.

## 9. San Isidro Movement

### Why in News?

- In Cuba, a campaign by artists and activists demanding greater freedom of expression has been in news recently.

### About

- The Movimiento San Isidro, or the San Isidro Movement (MSI), started in **2018** to **protest state censorship of artistic works**.
- The movement started when the Cuban government sought to **enforce Decree 349**, a law that would have given **powers to the nation’s Culture Ministry** to **restrict cultural activity it did not approve of**.
- The **landmark 2015 deal** between Cuba and the US gave crucial firepower to the movement.



- It provided provisions which stipulated that the **Cuban regime should allow** its people **greater internet freedoms** in **exchange for opening bilateral relations with Washington**.

#### Cuba

- Cuba, country of the **West Indies**, is the **largest single island of the archipelago**, and one of the more-influential states of the Caribbean region.
- Cuba is situated just **south of the Tropic of Cancer** at the intersection of the **Atlantic Ocean** (north and east), **the Gulf of Mexico** (west), and the **Caribbean Sea** (south).

## 10. Eluru illness

### Why in News?

- Over 550 people in Eluru town of Andhra Pradesh's West Godavari district have been suffering from convulsions, seizures, dizziness and nausea.

### About

- All India Institute of Medical Sciences (**AIIMS**) has found **traces of lead and nickel in blood samples** of 25 victims out of the 45 samples sent by the state government.
- The primary suspicion is on **water contamination by heavy metals**. Scientists suspect that **pesticide** or **insecticide** has **seeped into drinking water sources**.
- Concern → The presence of the chemicals in the blood samples was **very less** as the patients were **recovering fast**. If the quantity of the toxins was high, or spread through air, it would **affect the neurological system**.
- General factors contributing to lead poisoning →
  - Informal and substandard recycling** of lead-acid batteries.
  - Increase in vehicle ownership, combined with the **lack of vehicle battery recycling regulation** and infrastructure.
  - Workers in dangerous and often **illegal recycling operations** break open battery cases, spill acid and lead dust in the soil.
  - They also smelt the **recovered lead in crude, open-air furnaces** that emit toxic fumes poisoning the surrounding community.

Trace elements	Effect associated with human health	Source	Reference
Copper (Cu)	Anemia, liver and kidney damage and stomach and intestinal irritation	Soil contamination	Thirulogachandar <i>et al.</i> (2014)
Nickel (Ni)	Long-term exposure causes decreased BW, heart and liver damage and skin irritation	Volcanic activity, industrial and anthropogenic processes (metal-plating industries, combustion of fossil fuels, and nickel mining and dredging)	EFSA (2015)
Iron (Fe)	Anemia, heart disease, cancer, diabetes, choroiditis, retinitis and conjunctivitis	Meat, whole meal products, potatoes and vegetables	Thirulogachandar <i>et al.</i> (2014)
Cobalt (Co)	Sterility, hair loss, vomiting, bleeding, diarrhea, coma and even death	Soil contamination	Thirulogachandar <i>et al.</i> (2014)
Manganese (Mn)	Languor, sleepiness, weakness, emotional disturbances, spastic gait, recurring leg cramps and paralysis	Spinach, tea, herbs, grains and rice, soya beans, eggs, nuts, olive oil, green beans and oysters	Thirulogachandar <i>et al.</i> (2014)

## 11. Asia Pacific Vaccine Access Facility (APVAX)

### Why in News?

- ADB rolls out \$9 billion COVID-19 vaccine initiative for developing member countries.

### About

- What is it? → It is a \$9 billion initiative, launched by Asian Development Bank (**ADB**), that will **help its developing member economies to procure and deliver Coronavirus vaccines**.
- Parts covered by its facility include **cold-chain storage and transport, vehicles, distribution infrastructure**, and also **processing facilities**.
- APVAX will have two components →
  - **Rapid Response Component** to support critical vaccine diagnostics, procurement of vaccines, and transporting vaccines.
  - **Project Investment Component** for investments in systems for successful distribution, delivery, and administration of vaccines along with associated investments in building capacity.

### 📌 COVAX

- It is an **alliance co-led by Gavi**, the Coalition for Epidemic Preparedness Innovations (CEPI) and WHO.
- It aims to **accelerate the development and manufacture of COVID-19 vaccines** and to guarantee fair and equitable access for every country in the world.

### 📌 Asian Development Bank (ADB)

- It is a regional development bank established in **1966** to **promote social and economic development in Asia**.
- Members → **68 members**, of which 48 are from within Asia and the Pacific and 19 outside.
- Headquarters → **Manila, Philippines**.

## 12. Human Rights Day

### Why in News?

- Human Rights Day was celebrated by the National Human Rights Commission (NHRC).

### About

- It is celebrated on the **10th December every year** to commemorate the Universal Declaration of Human Rights (UDHR).
- The Declaration recognizes that the **inherent dignity and the equal and inalienable rights of mankind** are the foundation of justice, freedom and peace in the world.
- 2020 Theme → **Recover Better – Stand Up for Human Rights**.

### 📌 National Human Rights Commission

- Background →
  - NHRC was established in **1993**.

- It is in **conformity with the Paris Principles**, adopted at the first international workshop on national institutions for the protection of human rights held in Paris in 1991.
- Status → It is a **statutory organization** established under the **Protection of Human Rights Act (PHRA), 1993**.
- Headquartered → **New Delhi**.
- Functions →
  - The purpose of the NHRC is, **suo moto** or through the **petition of a person**, to **investigate the violation of human rights** or the failures of the state or other to prevent a human rights violation.
  - The commissions may also take on **research about human rights**, create **awareness campaigns** through various mediums, and encourage the work of NGOs.
- Composition →
  - The Commission consists of **a Chairperson, four full-time Members** and **four deemed Members**.
  - The statute lays down qualifications for the appointment of the Chairperson and Members of the Commission. A Chairperson, should be **retired Chief Justice of India**.

### 13. Yogasana as a competitive sport

#### Why in News?

- Ministry of AYUSH and Ministry of Youth affairs and Sports announced the formal recognition of Yogasana as a competitive sport.

#### About

- It will **ensure new technologies and new strategies being inducted** into the disciplines to benefit athletes and officials.
- It will **encourage yoga, spread awareness** about its benefits and to help improve physical and mental wellbeing of the people.
- Proposed events include **Traditional Yogasana, Artistic Yogasana** (Single), **Artistic Yogasana** (Pair), **Rhythmic Yogasana** (Pair) etc.

### 14. Legion of Merit Award

#### Why in News?

- US President has presented the prestigious Legion of Merit to Prime Minister Narendra Modi.

#### About

- What is it? → One of the **USA's highest military decorations**, the award was instituted in **1942** by former President **Franklin D. Roosevelt**.
- Given To → It is awarded to **members of the USA armed forces** and also **members of foreign** (i.e. non-USA) **armed forces** and sometimes heads of state or government.
- The award is presented to foreign recipients in **four categories** →
  1. Chief Commander,
  2. Commander,
  3. Officer,

- 4. Legionnaire.
- There have been **two Indian recipients** of the honour in the past → **Field Marshal K M Cariappa in 1950**, and **Gen S M Srinagesh in 1955**.

## 15. FRUITS portal

### Why in News?

- The 'FRUITS' (Farmer Registration and Unified Beneficiary Information System) portal, a project of e-governance by Karnataka Government.

### About

- Purpose → The portal was **integrated to the Bhoomi portal** of the State for **fetching** and **validating land details**.
- One other important facility of this Portal is **online creation of charge** by which **visit** of farmers to **Sub-Registrar Office** is **avoided**.
- Functioning →
  - In this portal, **all the farmers** will be **registered** and given a **FID Number**.
  - Using this number, the **financial and lending institutions** can **access the land details** of the farmers as well as their borrowings and take a quick decision on lending to the farmers depending on their requirements.
  - **All financial institutions** would be **brought on to the portal** so that at one place, all the data pertaining to the loans of the farmers would be available.

## 16. JSA II: Catch The Rain Awareness Generation Campaign

### Why in News?

- National Water Mission (NWM), Ministry of Jal Shakti in collaboration with Nehru Yuva Kendra Sangathan (NYKS), Ministry of Youth Affairs & Sports launched the "JSA II: Catch the Rain" Awareness Generation Campaign.

### About

- NWM has launched a campaign Catch the rain with tag line "**catch the rain, where it falls, when it falls**".
- The tagline is an indication to **all stake-holders** to create **Rain Water Harvesting Structures (RWHS)** suitable to the climatic conditions.
- Ultimately, it is **sub-soil strata** to **store rain water** as **rains falling in the four/five months of monsoon** are the only source of water for most parts of the country.
- Nehru Yuva Kendra Sangathan will undertake the campaign **covering 623 districts** across the nation from **December 2020 to March 2021**.

## 17. Bharatskills Portal

### Why in News?

- Directorate General of Training (DGT) has joined hands with Microsoft and NASSCOM Foundation to provide digital content for ITI students and also future-ready employability skilling program via the Bharatskills portal.

## About

- The Directorate General of Training (DGT) has launched an **online learning platform** called the Bharatskills (<https://bharatskills.gov.in>) in **Oct 2019**.
- Purpose → It is a **Central Repository for skills** providing easy access **for the trainees and trainers of the ITI ecosystem** to access updated curriculums and course content of all courses.
- The platform also presents a **unique access to a centralized, scalable** and a **thriving support ecosystem** through its industrial partners for the students and teachers who can now learn the newer Industrial Revolution(IR) 4.0 skills to meet the demands of the industry.

## 18. e-Sampada

### Why in News?

- The Directorate of Estates, Ministry of Housing and Urban Affairs dedicated to the nation, a new Web Portal and Mobile App, e-Sampada.

## About

- What is it? → It is a **mobile application** that provides a **single window for all services** including allotment for over one lakh government residential accommodations, office space allotment to government organisations among others.
- Significance → This will **promote ease of living** for **Government of India officers / Departments** as all services can be availed online on a single window with a live tracking of applications.
- The automated processes will also **minimize human intervention** and will lead to **greater transparency**.
- In its endeavour to provide '**One Nation, One System**', the erstwhile four websites (gpra.nic.in, eawas.nic.in, estates.gov.in, holidayhomes.nic.in), and two Mobile Apps (m-Awas & m-Ashoka5) of the Directorate of Estates have been integrated into one.

## 19. Turmeric (Curcuma longa)

### Why in News?

- Sri Lankan police have seized 20,000 kg of turmeric smuggled by sea, reportedly from India amid a shortage persisting since Sri Lanka banned imports to support local farmers in the pandemic year.

## About

- What is it? → It is a **perennial herbaceous plant** of the **ginger family**.
- The plant's underground stems or rhizomes have been used as a **spice, dye, medicine, and religious maker** since antiquity.
- Climate → It requires temperatures **between 20 and 30 °C** (68 and 86 °F) and a **considerable amount of annual rainfall to thrive**.
- Significance → The spice's color comes mainly from **curcumin**, a **bright yellow phenolic compound** that has been in the news for its ostensible potential to **fight cancer**. As a result, the demand for turmeric with high curcumin content has risen.
- Largest Producer → **India** is the **largest producer and exporter** of turmeric in the world. Turmeric occupies about 6% of the total area under spices and condiments in India.



- Largest Producer State → **Telangana** was the **leading producer** of turmeric in India during 2018. **Maharashtra** and **Tamil Nadu** were **second and third** in the ranking that year.

## 20. Pneumosil

### Why in News?

- Union Health Minister Harsh Vardhan inaugurated India's first pneumococcal conjugate vaccine "Pneumosil".

### About Polio

- Developed by → the **Serum Institute of India Private Limited** (SIIPL) in collaboration with partners like the Bill and Melinda Gates Foundation.
- It **targets** the **pneumococcal bacterium**, which causes pneumonia and other serious life-threatening diseases such as meningitis and sepsis.
- This pneumococcal conjugate vaccine (**PCV**) will be available in the market at an **affordable price** in **single** and **multi dose presentations**.
- The vaccine also makes **SII** the **world's third supplier of PCVs** under the pneumococcal Advance Market Commitment.
- Need →
  - Pneumococcal disease is a significant contributor **under-five mortality rate worldwide**.
  - In view of its widespread fatality, the World Health Organization (2018) recommended the **inclusion of PCV** in **routine childhood immunisation programmes** in **all countries**.

## 21. Paray Samadhan

### Why in News?

- Launched recently by West Bengal.

### About

- What is it → It is a **new grievance redressal mechanism**.
- Paray Samadhan means **redressal in the neighbourhood**.
- This will **not address major infrastructural gaps** but will address municipal, local or service gaps through specific mission mode to reach out to the neighbourhood.
- This will be **supplementary** of 'Duare Sarkar'.
- Duare Sarkar → It is an initiative of the state government, spread over 60 days, for **delivery of specific schemes** of the state government **at the doorsteps of the people** through outreach camps organized at the level of gram panchayat and municipal ward level.

## 22. Digital India Awards 2020

### Why in News?

- President of India Shri Ram Nath Kovind will virtually confer the Digital India Awards 2020.

### About

- It aims to honor **exemplary initiatives/practices in Digital-Governance**.

- The award has been instituted under the aegis of **National Portal of India**.
- Purpose → The award serve the purpose of bringing to the **fore innovative digital solutions** & thereby **inspiring emulation** by all government entities.
- National Informatics Centre (NIC) under Ministry of Electronics & Information Technology (MeitY) has been conducting the **biennial Digital India Awards** (DIA) to **promote innovation in eGovernance** and **digital transformation** of government service delivery mechanism.

## 23. TiHAN-IIT

### Why in News?

- Union Minister of Education Shri. Ramesh Pokhriyal 'Nishank', virtually laid foundation stone of 'TiHAN-IIT Hyderabad', India's first Test bed for Autonomous Navigation Systems (Terrestrial and Aerial).

### About

- It is **India's first test bed for Autonomous Navigation Systems** (Terrestrial and Aerial).
- **TiHAN Foundation**, established **at IIT Hyderabad**, is a **multi-departmental initiative**, including researchers from Electrical, Computer Science, Mechanical and Aerospace, Civil, Mathematics, and Design at IIT Hyderabad with collaboration and support from reputed institutions and industry.
- The test bed will be a **fully functional** and **exemplary facility dedicated** to **Connected Autonomous Vehicles** – CAVs. The hub's focus sectors include Intelligent, Autonomous Transportation and Systems, Agriculture, Surveillance, and Environmental & Infrastructure Monitoring.
- Background → The Department of Science and Technology (DST), Government of India, has sanctioned Rs. 135 crores to IIT Hyderabad under **the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)** to set up a Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems (UAVs, RoVs, etc.).
- The Technology Innovation Hub on Autonomous Navigation Systems **for Unmanned Aerial Vehicles** and **Remotely Operated Vehicles at IIT Hyderabad**, known as '**TiHAN Foundation**' has been incorporated as a Section-8 company by the institute in June 2020.

#### 👉 National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)

- To **harness the potential** of this **new wave of technology** and make India a **leading player in CPS**, the Union Cabinet approved NM-ICPS in 2018.
- Implemented by the **Department of Science & Technology** (DST).
- It had a total outlay of **INR 3,660 crores** for a period of **five years**.

#### 👉 Cyber Physical Systems (CPS)

- They are new class of engineered systems that **integrate computation and physical processes** in a dynamic environment.
- CPS encompasses technology areas of **Cybernetics**, **Mechatronics**, **Design** and Embedded systems, **Internet of Things** (IoT), **Big Data**, **Artificial Intelligence** (AI) and **many more**.
- The CPS systems are **intelligent**, **autonomous** and **efficient** and are expected to **drive innovation in sectors** as diverse as agriculture, water, energy, transportation, infrastructure, security, health and manufacturing.

- Thus, it is heralded as the **next paradigm shift in technology** that can exponentially spur growth and development.

## 24. The Period Products (Free Provision) (Scotland)

### Why in News?

- Recently, Scottish Parliament unanimously passed The Period Products (Free Provision) (Scotland) Act which makes it legally mandatory for all public institutions to provide period products, including tampons and pads to all those who need them.

### About

- It is the **first law of its kind in the world to make access to menstrual products a right**.
- The Bill was introduced in April 2019 with the goal of eliminating “**period poverty**”.
- Period poverty is the **lack of access to sanitary products, menstrual hygiene education, toilets, hand washing facilities**, and, or, **waste management**.

## 25. Athena SWAN

### Why in News?

- One of the focuses of the new Science, Technology and Innovation Policy, currently being drafted by the Department of Science and Technology (DST), will be to increase the participation of women in science.

### About

- To this end, the DST will **incorporate a system of grading institutes** depending on the **enrolment of women** and the **advancement of the careers of women faculty and scientists**.
- The concept borrows from a programme **started by the UK in 2005** called the **Athena SWAN** (Scientific Women’s Academic Network), which is now being adopted by many countries.
- The Athena SWAN Charter is an **evaluation and accreditation programme in the UK** enhancing gender equity in science, technology, engineering, mathematics and medicine (STEMM).

## 26. Great Barrington Declaration

### Why in News?

- The Great Barrington Declaration is a statement written by three public health experts from Harvard, Stanford, and Oxford.

### About

- **Declaration was written from a global public health and humanitarian perspective**, with special concerns about how the current COVID-19 strategies are forcing our children, the working class and the poor to carry the heaviest burden.
- It **encourages governments to lift lockdown restrictions** on young and healthy people while focusing protection measures on the elderly. Those who are not vulnerable should immediately be allowed to resume life as normal.

- This would allow COVID-19 to **spread in a population where it is less likely to be deadly encouraging widespread immunity** that is not dependent on a vaccine.
  - Simple hygiene measures, such as hand washing and staying home when sick should be practiced by everyone to reduce the herd immunity threshold.
- The **approach balances the risks and benefits of reaching herd immunity** and to allow those who are at minimal risk of death to live their lives normally to build up immunity to the virus through natural infection, while better protecting those who are at highest risk. This is called Focused Protection.
- However, Barrington declaration was **criticized for putting individual preference above public good**.
  - The declaration advocates that, “individual people, based upon their own perception of their risk of dying from COVID-19 and other personal circumstances, personally choose the risks, activities and restrictions they prefer.”
- Also, **declaration misunderstands herd immunity**.

## Quick revision (True/False)



1	<b>Giant Metrewave Radio Telescope (GMRT)</b> -> an array of radio telescopes. Location – Ladakh.	
2	<b>Islamic Cooperation countries</b> -> established in 1969. Headquarters (HQ) - Jeddah, Saudi Arabia. India is in Observer countries List.	
3	<b>Hayabusa2</b> -> is a mission to analyse the composition of asteroid 1999 JU3 (Ryugu) and return samples from it to Earth.	
4	<b>Mount Ili Lewotolok</b> -> Italy.	
5	<b>Brahmaputra</b> -> Tributaries - Dibang, Lohit, Siang, Burhi Dihing, Tista and Dhansari.	
6	<b>Great Indian Hornbill</b> -> it is a state bird of Nagaland. IUCN Status: Vulnerable.	
7	<b>Peacock Soft-shelled Turtle</b> -> confined to India only. Vulnerable on IUCN Redlist.	
8	<b>Arunachal Kiwi</b> -> Ziro Valley most ideal for kiwi.	
9	<b>Honey Farmer Producer Organisation (FPO) Programme</b> -> is a new Centrally Sponsored Scheme for the promotion of 10,000 new FPOs.	
10	<b>Attorney General</b> -> Right to participate in the proceedings of the Parliament, casting vote in the event of a tie.	
11	<b>TRIFED</b> -> Established in 1987. Under the administrative control of the Ministry of Food Processing Industries.	
12	<b>Green Charcoal Hackathon</b> -> Launched by NVVN (NTPC VidyutVyapar Nigam). goals is to reduce the carbon footprint of the nation.	
13	<b>Border Security Force</b> -> deployed on Indo-Pakistan International Border only.	
14	<b>Saryu river</b> -> originates in Uttarakhand. mentioned in the Vedas and the Ramayana.	
15	<b>Minimum Support Price</b> -> Calculated by Commission for Agricultural Costs & Prices.	
16	<b>Damaru-Inspired Lattice</b> -> that finds applications in stealth submarines and high speed trains.	
17	<b>Amit Khare Task Force</b> -> To promote digital payment.	
18	<b>International Association of Insurance Supervisors</b> -> Founded in 1994. Headquarters – Paris, France.	
19	<b>Malaria</b> -> Caused by Plasmodium parasites.	
20	<b>Malayan Giant Squirrel</b> -> IUCN: Near Threatened. In India, is found only in the forests of Northeast.	
21	<b>Arecibo Observatory</b> -> Built in 1963. received radio waves from space.	
22	<b>SHINE Trial</b> -> to test the efficacy of shortened treatments for children diagnosed with Covid-19.	

23	<b>eSanjeevani</b> -> for addressing the grievances of the common man, while at the same time, monitoring government projects and programmes/schemes.	
24	<b>Shanghai Cooperation Organisation</b> -> Headquarters: Beijing, China.	
25	<b>HL-2M Tokamak</b> -> NASA's largest and most advanced nuclear fusion experimental research device.	
26	<b>IndiGen Genome Project</b> -> aims to undertake whole genome sequencing of thousands of individuals representing diverse ethnic groups from India.	
27	<b>Bhashan Char Island</b> -> known as Char Piya, is an island in Hatiya, Myanmar.	
28	<b>World Meteorological Organization</b> -> intergovernmental organization. Headquarters - Geneva, Switzerland.	
29	<b>Cannabis</b> -> UN Commission on Narcotic Drugs (CND) recently reclassified out of the most dangerous category of drugs.	
30	<b>Hampi Stone Chariot</b> -> built in the 16th century by the orders of King Krishnadevaraya, a Vijayanagara ruler.	
31	<b>Operation Trident</b> -> was an offensive operation launched by the Indian Navy on Pakistan's port city of Karachi during the Indo-Pakistani War of 1971.	
32	<b>The houbara bustard</b> -> lives in arid climates. IUCN: Endangered.	
33	<b>World Energy Outlook</b> -> Released by World Economic Forum.	
34	<b>Urban Quality Index</b> -> Released by Niti Aayog.	
35	<b>Tharu tribals</b> -> is a scheduled tribe in the states of Uttar Pradesh only.	
36	<b>Lakshadweep</b> first UT to become 100% organic.	
37	<b>Akash Missiles</b> -> is a medium-range mobile air-to-air missile defense system.	
38	<b>Climate Change Performance Index 2020</b> -> Released by Environment think tank Germanwatch.	
39	<b>United Nations Conference on Trade and Development</b> -> permanent intergovernmental body. HQ: Geneva, Switzerland.	
40	<b>Orchha</b> -> located in the Bundelkhand region of Madhya Pradesh was the 16th century capital of the erstwhile Bundela dynasty.	
41	<b>Partners in Population and Development</b> -> Secretariat: New Delhi, India. intergovernmental organisation for promoting south-south cooperation.	
42	<b>Mount Everest</b> -> new height -- 8,848.86 meters.	
43	<b>Vanchit Ikai Samooch aur Vargon ki Aarthik Sahayta (VISVAS) Yojana</b> is an Interest subvention Scheme of Ministry of Finance.	
44	<b>Central Zoo Authority</b> -> chaired by the PM.	
45	<b>PM WANI Scheme</b> -> To enable easily accessible public Wi-Fi hotspots spread across the country.	
46	<b>Urban Governance Index 2020</b> -> Published by Niti Aayog.	
47	<b>Molnupiravir</b> -> Anti-Submarine Warfare (ASW) stealth corvettes.	

48	<b>Universal Service Obligation Fund(USOF)</b> -> statutory status under the Information Technology Act, 2000.	
49	<b>Emissions Gap Report</b> -> Published by United Nations Environment Programme.	
50	<b>UN Population Award</b> -> Given to HelpAge India.	
51	<b>Better Than Cash Alliance</b> -> Created in 2012. India is not a member.	
52	<b>Ischaemum janarthanamii</b> -> identified in the Andaman and Nicobar Islands.	
53	<b>NB-IoT Network</b> -> new 'Made in India' Solution, which is indigenously developed by Skylo, will connect with BSNLs satellite- ground infrastructure and provide PAN-India coverage, including Indian seas.	
54	<b>National Human Rights Commission</b> -> constitutional body.	
55	<b>Seventh Schedule</b> -> under Article 246 of the constitution deals with the division of powers between the union and the states.	
56	<b>Vadhavan Port</b> -> on the East coast of India in Jagatsinghpur district of Odisha.	
57	<b>Subramanya Bharati</b> -> He published the sensational "Sudesa Geethangal" in 1908.	
58	<b>Asia Pacific Vaccine Access Facility (APVAX)</b> -> launched by WHO, that will help its developing member economies to procure and deliver Coronavirus vaccines.	
59	<b>Prates islands</b> -> Located in Indian Ocean.	
60	<b>Myristica Swamp Treefrog</b> -> endemic to the Northeast.	
61	<b>lead poisoning</b> -> affect the neurological system.	
62	<b>Kaziranga National Park</b> -> declared a UNESCO World Heritage Site in 1985 but not recognized as an Important Bird Area.	
66	<b>Delimitation Commission</b> -> whose orders have the force of law and cannot be called in question before any court.	
67	<b>Bakhshali manuscript</b> -> is a third-century Indian mathematical manuscript written in ink on birch bark.	
68	<b>Himalayan serow</b> -> found in eastern, central, and western Himalayas but not in the Trans Himalayan region.	
69	<b>INS Himgiri</b> -> Offshore Patrol Vessels.	
70	<b>Indian Gaur</b> -> one of the largest extant bovines. Endangered in the IUCN Red List.	
71	<b>Mucormycosis Fungal Infection</b> -> symptoms are face numbness, one-side nose obstructions or swelling of eyes, or pain.	
72	<b>National Centre for Divyang Empowerment</b> -> established by the Ministry of Social Justice and Empowerment.	
73	<b>Green Rating for Integrated Habitat Assessment (GRIHA)</b> -> is a rating tool. given by the GRIHA Council to promote green buildings in India.	
74	<b>DakPay</b> -> a new digital payment app. Launched by Department of Posts (DoP) and India Post Payments Bank(IPPB).	



75	<b>Global Housing Technology Challenge</b> -> Organised by Ministry of Environment, Forest and Climate Change.	
76	<b>Cabomba</b> -> is a submerged perennial aquatic plant that grows in stagnant to slow-flowing freshwater. an invasive species.	
77	<b>Himalayan Griffon Vulture</b> -> found only along the Western Ghat.	
78	<b>Human Development Index</b> -> Released by World Economic Forum.	
79	<b>S-400 Triumf</b> -> is a mobile, surface-to-air missile system (SAM) designed by Russia.	
80	<b>Young Champions of the Earth</b> -> launched in 2005 by the United Nations Environment Programme.	
81	<b>Human Freedom Index 2020</b> -> Published by American think tank Cato Institute and Fraser Institute in Canada.	
82	<b>Shigella Infection</b> -> is an infectious disease caused by a group of bacteria called Shigella.	
83	<b>Prorogation</b> -> Termination of a sitting of the House without any definite date.	
84	<b>Chillai Kalan</b> -> is the coldest 40-day period of harsh winter of winter in the Jammu and Kashmir region.	
85	<b>Lok Adalat</b> -> decision made by the Lok Adalats is considered to be a verdict of a civil court and is ultimate and binding on all parties.	
86	<b>The Man Who Knew Infinity (2015)</b> -> biopic on C.V. Raman.	
87	<b>Gastrodia agnicellus</b> -> Found in a forest in Western Ghats, India	
88	<b>Firefly Bird Diverters for the conservation of</b> -> Red headed Vulture.	
89	<b>Electricity (Rights of Consumers) Rules, 2020</b> -> consumers have a right to have minimum standards of service for supply of electricity.	
90	<b>Mock Egg</b> -> It has been developed from very simple farm based crop proteins. By a team of scientists from IIT Delhi.	
91	<b>Tso Kar Wetland Complex</b> -> in West Bengal.	
92	<b>DigiBoxx</b> -> is a Made-in-India digital asset management, file sharing service and cloud storage platform.	
93	<b>BBX11 gene</b> -> plays a vital role in regulation of the amount of protochlorophyllide synthesized by the plant.	
94	<b>Whale Songs</b> -> Most of the whale songs are higher in the frequency and audible to human ears.	
95	<b>Portulaca laljii</b> -> Discovered from Meghalaya.	
96	<b>Governor summons</b> the House under Article 174, this is not of his or her own will but on the aid and advice of the Cabinet.	
97	<b>R P Tiwari Committee</b> -> for strengthening digital payments ecosystem.	
98	<b>Digital Ocean</b> -> launched by Ministry of Science and Technology.	

99	<b>Hypothermia</b> -> Alcohol consumption can decrease the risk of hypothermia during cold exposure.	
100	<b>National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)</b> -> aims to create a strong foundation and a seamless ecosystem for Cyber Physical System (CPS) technologies.	

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