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1. AGRICULTURE

1.1 World fisheries day, 2021

In news- World Fisheries Day was observed on 21st November 2021. This is the 5th time the day was being celebrated.

About World Fisheries Day-

- The main purpose behind this day is to highlight the importance of sustainable stocks of fisheries in the world.
- It recognises the contributions of millions of fisher folks, fish farmers, and people involved with the fishery trade across the globe.
- It also focuses on other related factors such as the necessity of healthy oceans, balance in ecosystem and surroundings.
- In 2020, the theme focused on 'Social Responsibility in the fisheries value chain'.
- In 1997, the World Fisheries Forum (WFF) was established as a forum for the World Fisheries Consortium.
- A global consensus document that indicated standardisation of fishing operations was signed by 18 countries.
- The first World Fisheries Day was celebrated on November 21, 2015, during the opening of the International Fishermen's organisation in New Delhi.

Awards given during the event-

- **Balasore, Odisha** was awarded as the Best Marine District in the country.
- **Andhra Pradesh** was awarded the Best Marine State while Best Inland State Award was given to **Telangana**.
- **Balaghat in Madhya Pradesh** received the Best Inland District award.
- Best Hilly and Northeastern State and District awards were taken away by **Tripura and Bongaigaon, Assam** respectively.

World Fisheries Forum (WFF)-

- The World Forum of Fish Harvesters and Fish workers (WFF) is an international non-governmental organization that works towards the establishment and upholding of fundamental human rights, social justice and culture of fish harvesters and fish workers.
- It was founded in Quebec, Canada in 1995.
- The WFF currently represents 48 national organizations of traditional small-scale fishing communities in 42 nations, whose livelihoods depend directly on the sustainable management of fisheries resources.
- It acts as a world body representing the concerns of traditional fishing communities whose survival is directly threatened by the reduction of the role of governments in regulating fisheries.

1.2 The State of Food and Agriculture (SOFA) 2021 report

In news- The Food and Agriculture Organization's (FAO) has released the State of Food and Agriculture (SOFA) 2021 report recently.

Key highlights of the report-

- The tagline of the SOFA report is Making agrifood systems more resilient to shocks and stresses.
- As per the report, **Agrifood systems encompass primary agricultural production of food and non-food products** (from crops, livestock, fisheries, forestry and aquaculture), the production of food of non-agricultural origin (e.g. synthetic meat), the food supply chain from producer to consumer and the final consumer of food.
- Globally, these systems produce some 11 billion tonnes of food each year and form the backbone of many economies.
- It said that **the COVID-19 pandemic exposed the vulnerability of agri-food systems to shocks** and stresses and led to increased global food insecurity and malnutrition.
- **It defines shocks as short-term events that have negative effects on a system**, people's well-being, assets, livelihoods, safety and ability to withstand future shocks.
- It says that **a disruption to critical transport links could push food prices up for some 845 million people.**
- The indicators measure the robustness of primary production and food availability, as well as physical and economic access to food.
- It says that while low-income countries generally face much greater challenges, middle-income countries, high-income countries, such as Australia and Canada are also at risk because of the long distances involved in the distribution of food.
- It also recommends diversification – of actors, input sources, production, markets and supply chains – to create multiple pathways for absorbing shocks.
- It also recommends supporting the development of small and medium agrifood enterprises and cooperatives.

2. DISASTER MANAGEMENT

2.1 World Congress on Disaster Management

In news- The Defence Minister virtually inaugurated the 5th World Congress on Disaster Management recently.

About World Congress on Disaster Management (WCDM)-

- The 5th WCDM was organised in New Delhi between November 24-27, 2021 at the campus of IIT Delhi.
- Its theme is 'Technology, Finance and Capacity for Building Resilience to Disasters in the context of COVID-19'.
- It is an initiative of Disaster Management Initiatives and Convergence Society (DMICS) having its headquarter in Hyderabad.
- It was organised jointly by the Government of National Territory (GNCT) of Delhi, IIT Delhi and Disaster Management Initiatives and Convergence Society (DMICS) Hyderabad, in collaboration with National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM), DRDO and The ICMR New Delhi.
- It brought researchers, policy makers and practitioners from around the world on the same platform to discuss various challenging issues of disaster risk management.
- The aim is to promote interaction of science, policy and practices to enhance understanding of risks and advance actions for reducing risks and building resilience to disasters.
- The first WCDM took place in 2008 in the Hitech city of Hyderabad and Dr. A P J Abdul Kalam, former President of India had inaugurated the Congress.

- The fourth WCDM was organised in Mumbai.

Disaster Management Initiatives and Convergence Society (DMICS)-

- It was established in 2005, in the aftermath of the Indian Ocean Tsunami, to enhance understanding and awareness among the people about the risks of various types and dimensions of disasters, and the measures to be taken for reducing the risks, and for better preparedness, response and recovery.
- It is engaged in conducting a series of workshops, seminars and conferences on a wide range of issues of disaster risk management and networks with communities, governments, NGOs, academic and research institutions, media, public and private sectors.

3. ECONOMY

3.1 SWAMIH fund

In news- Recently, the first project under the SWAMIH real estate fund has been wrapped up in Mumbai.

Key updates-

- The project was the first beneficiary of the **initiative to provide last-mile funding to affordable housing projects** that were stalled due to lack of funds.
- Managed by SBICap Ventures, a step-down subsidiary of State Bank of India, the Fund gave possession of completed flats in the Rivali Park project in May.
- The project was launched in 2010 and stalled due to lack of funds with no hope for desperate homebuyers until SWAMIH investment in February 2020.
- According to the Finance Ministry, SWAMIH has given final approval to 95 projects sanctioning more than Rs 9,500 crores which will complete over 57,700 homes.

Impact of the exit

- The successful exit would embolden the Fund and other private investors to take exposure to projects which are stuck due to lack of funding.
- It would help unlock liquidity in the real estate sector and provide a boost to core industries such as cement and steel.
- The money realised through this investment can be used to support other projects.

The Special Window for Affordable & Mid-Income Housing or SWAMIH fund-

- It was set up in November 2019 with an estimated size of Rs 25,000 crore.
- The Rs 12,500-crore fund, with a green-shoe option of an additional Rs 12,500 crore, **aims to provide financing to enable completion of stalled housing projects and ensure delivery of apartments to homebuyers.**
- It provides funding to stalled projects that are “net worth” and where at least 30 per cent construction has been completed.
- It has one of the largest domestic real estate private equity teams focused only on funding and monitoring completion of stressed housing projects.
- The Fund is currently active in the Mumbai metropolitan region, National Capital Region and other metros including Hyderabad, Chennai, Ahmedabad, Pune and Bengaluru.

- **This Fund was set up as a Category-II AIF (Alternate Investment Fund) debt fund registered with the Securities and Exchange Board of India.**
- The Central Government is the sponsor (the person/entity that set up the AIF) and will have the authority and responsibilities.
- SBICAP Ventures Limited is the investment manager of the SWAMIH investment fund.

Alternative Investment Funds (AIFs) & their types-

- Alternative Investment Funds are an avenue to pool in funds for investing in private equity, real estate or hedge funds.
- In India, AIFs are defined in Regulation 2(1) (b) of SEBI (Alternative Investment Funds) Regulations, 2012.
- It refers to any privately pooled investment fund, (whether from Indian or foreign sources), in the form of a trust or a company or a body corporate or a Limited Liability Partnership (LLP).

Types-

- Category I AIF are those funds that invest in start-ups or social venture funds, infrastructure funds, SME funds, and so on. The government or regulators consider this category of funds as socially viable or economically desirable.
- Category II Funds are those that do not leverage or borrow, other than to meet the day-to-day operational requirements. This category typically consists of Private Equity Funds and Debt funds.
- Category III funds typically comprise Hedge Funds that employ diverse or complex trading strategies. By investing in listed or unlisted derivatives, AIF managers try to employ leverage.

3.2 Infrastructure Investment Trusts (InvITs)

In news- Recently, NHAI's first infrastructure investment trust (InvITs) has raised more than Rs 5,000 crore.

About NHAI's InvIT-

- The National Highway Authority of India has **launched its InvIT under the National Monetisation Pipeline (NMP)**, which is based on 'Creation through Monetisation'.
- It seeks to monetise NH projects and has demonstrated a strong ability to attract a wide variety of sophisticated global investors.
- NHAI has the largest share under the NMP as **road assets worth Rs 1.60 lakh crore** will be monetised over four years till FY25 under the NMP plan.
- **NHAI InvIT attracted two international pension funds**, Canadian Pension Plan Investment Board and Ontario Teachers' Pension Plan Board.
- **It also attracted diversified Domestic Institutional Investors** who invested units worth more than Rs 5,000 cr in InvIT portfolio which currently has 5 National Highways.
- The move is aimed at enabling NHAI to monetise completed national highways that have a toll collection track record of at least one year and it reserves the right to levy toll on the identified highway.

What are Infrastructure Investment Trusts (InvITs)?

- **InvITs are instruments on the pattern of mutual funds, designed to pool money from investors** and invest the amount in assets that will provide cash flows over a period of time.

- **InvITs enable direct investment of money from individual and institutional investors** in infrastructure projects to earn a small portion of the income as return.
- It enables developers of infrastructure assets to monetise their assets by pooling multiple assets under a single entity (trust structure).
- In India, InvITs are **governed by SEBI (Infrastructure Investment Trusts) (Amendment) Regulations, 2016**.

Key features of InvITs-

- The key features of InvITs are **mandatory distribution of 90% of net distributable cash flows to the unit investors**, leverage cap of 70% on the net asset value, and a cap on exposure to assets under construction (for publicly placed InvITs).
- The sponsor of the InvIT is responsible for setting up the InvIT and appointing the trustee.
- The **sponsor should hold a minimum 15% of the units issued by the InvIT with a lock-in period of three years** from the date of issuance.

3.3 LEADS index, 2021

In news- The Union Minister of Commerce and Industry has released a report on the **Logistics Ease Across Different States Index (LEADS) 2021** recently.

About the index

- LEADS report ranks the states on the basis of their logistics ecosystem, highlights the key logistics related challenges faced by the stakeholders and includes suggestive recommendations.
- Within the North Eastern States and Himalayan Region, Jammu and Kashmir is the top ranker followed by Sikkim and Meghalaya.
- Delhi stands at the top rank among Other UTs.
- **LEADS report of 2018 focused on export-import trade** and assessed the efficiency of the logistics ecosystem in each State and UT.
- LEADS report 2019 had covered both international and domestic trade.
- **Being the 3rd report in series, LEADS 2021 exercise** has gone one-step ahead in analysing the domestic and EXIM logistics ecosystem of the state.
- Specifically, two improvements have been done in the overall assessment framework.
- Firstly, the **objective parameters in the LEADS 2021 Index have been introduced by way of an objective survey instrument** administered to the States/UTs and **by the inclusion of secondary datasets** on logistics across the State/UT level.
- Secondly, the statistical methodologies to build the index have been updated to get more robust results, given change in the overall framework.
- The perception survey was administered to the **four different categories of logistics stakeholders**, viz. traders/ shippers, transport service providers, terminal operators, and logistics service providers.
- With the efforts in the right direction, it is hoped that the vision of logistics cost will be reduced by 5% in the next five years.

Top of the Class

STATE RANKINGS

- 1] Gujarat
- 2] Haryana
- 3] Punjab
- 4] Tamil Nadu
- 5] Maharashtra
- 6] Uttar Pradesh
- 7] Odisha
- 8] Karnataka
- 9] Andhra Pradesh
- 10] Telangana

PARAMETERS

Infrastructure: Road, rail, multi-modal, warehousing

Services: Service provider capability, road freight rate reasonability, cargo delivery timeliness

Regulation:

Facilitation, ease of obtaining approvals, regulatory services efficiency

TOP IMPROVERS (IN RANK)

| | 2021 | 2019 |
|---------------|------|------|
| Uttar Pradesh | 6 | 13 |
| Uttarakhand | 13 | 19 |
| Jharkhand | 12 | 17 |

KEY SUGGESTIONS

Frame state logistics policy, master plan

Single-window clearance system for logistics

Setup robust institutional mechanism

Effective grievance redressal, dispute resolution mechanism

3.4 RBI Retail Direct Scheme

In news- Recently, the Indian Prime Minister launched two innovative customer centric initiatives of RBI viz. Retail Direct Scheme and the Reserve Bank - Integrated Ombudsman Scheme.

About the Retail Direct Scheme-

- It is aimed at enhancing access to the government securities market for retail investors.
- It also aims to provide a safe, simple, direct and secured platform to investors.
- Investors will be able to easily open and maintain their government securities account online with the RBI, free of cost.
- Under the Scheme, retail individual investors will be able to open a Retail Direct Gilt (RDG) Account with the Reserve Bank of India, using an online portal (<https://rbiretaildirect.org.in>).
- Under this scheme, investments can be made using the following routes:
 1. **Primary issuance of government securities:** Investors can place bid as per the non-competitive scheme for participation in primary auction of government securities and procedural guidelines for SGB issuance.
 2. **Secondary market:** Investors can buy and sell government securities on NDS-OM ('Odd Lot' and 'Request for Quotes' segments).
- Payments for transactions under the scheme can be done conveniently using a savings bank account through internet-banking or Unified Payments Interface (UPI).
- **Investor services under this include** provisions for transaction and balance statements, nomination facility, pledge or lien of securities and gift transactions.

About the Reserve Bank - Integrated Ombudsman Scheme

- It aims to further improve the grievance redress mechanism for resolving customer complaints against entities regulated by RBI.
- The central theme of the scheme is based on 'One Nation-One Ombudsman' with one portal, one email and one address for the customers to lodge their complaints.
- There will be a single point of reference for customers to file their complaints, submit the documents, track status and provide feedback.
- A multi-lingual toll-free number will provide all relevant information on grievance redress and assistance for filing complaints.
- The Scheme integrates the existing three Ombudsman schemes of RBI namely, the Banking Ombudsman Scheme, 2006; the Ombudsman Scheme for Non-Banking Financial Companies, 2018; and the Ombudsman Scheme for Digital Transactions, 2019.
- It will provide cost-free redress of customer complaints involving deficiency in services rendered by entities regulated by RBI, if not resolved to the satisfaction of the customers or not replied within a period of 30 days by the regulated entity.
- The Scheme also includes under its ambit Non-Scheduled Primary Co-operative Banks with a deposit size of Rs.50 crore and above.
- It will no longer be necessary for a complainant to identify under which scheme he/she should file a complaint with the Ombudsman.
- It defines 'deficiency in service' as the ground for filing a complaint, with a specified list of exclusions.
- The Scheme has done away with the jurisdiction of each ombudsman office.
- The responsibility of representing the Regulated Entity and furnishing information in respect of complaints filed by customers against the Regulated Entity would be that of the Principal Nodal Officer in the rank of a General Manager in a Public Sector Bank or equivalent.
- The Regulated Entity will not have the right to appeal in cases where an Award is issued by the ombudsman against it for not furnishing satisfactory and timely information/documents.
- The Executive Director-in charge of Consumer Education and Protection Department of RBI would be the Appellate Authority under the Scheme.

3.5 India's first fisheries incubator launched in Haryana

In news- Recently, the Union Minister of Fisheries, Animal Husbandry and Dairying inaugurated the country's first-of-its kind, dedicated business incubator to be known as LINAC- NCDC Fisheries Business Incubation Centre (LIFIC) in Haryana's Gurugram.

About Incubation Centre-

- This unit will provide hand holding such as training, converting entrepreneurial ideas into business models and doling out seed money to the new as well as existing business entrepreneurs keen to make big in the segment.
- National Cooperative Development Corporation (NCDC) is the implementing agency for the LIFIC.
- NCDC has identified the first batch of ten incubatees from four states—Bihar, Himachal Pradesh, Gujarat and Maharashtra.
- Out of them, 6 are from newly-created Fish Farmers Producer Organizations with the support of the financial grant under the PMMSY.
- Centre will serve as a 'milestone' in future for the fisheries sector which is being given a big push under the central flagship Pradhan Mantri Matsya Sampada Yojana (PMSSY).

- It would nurture fisheries start-ups under real market-led conditions.
- The Prime Minister has set a goal of 22 million tonnes of fish production and export to the tune of Rs one lakh crore by 2025.
- Presently, fish production is 130 lakh tonnes and exports worth Rs 46,000 crore.

National Cooperative Development Corporation (NCDC)

- NCDC was established by an Act of Parliament in 1963 as a **statutory Corporation** under the Ministry of Agriculture & Farmers Welfare.
- **The objectives of NCDC are** planning and promoting programmes for production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, livestock and certain other notified commodities and services on cooperative principles.
- Its Management vests in 51 members widely represent the General Council to give shape to its policies and programmes and Board of Management.

3.6 Purvanchal Expressway

In news- Indian Prime Minister has inaugurated Purvanchal Expressway at Karwal Kheri in Sultanpur district recently.

About Purvanchal Expressway-

- The 341 km expressway starts from Chandsarai village in the district of Lucknow located on the Lucknow-Sultanpur road(NH-731) and ends at Haidaria village on National Highway 31 in Ghazipur district.
- It is currently a six-lane wide highway and can be expanded to eight-lane in the future.
- It will reduce the travel time between Lucknow to Buxar in Bihar from seven hours to nearly four hours.
- Once it is opened to the public, the travel time from Lucknow to Ghazipur will be reduced from 6 hours to 3.5 hours.
- It establishes a direct link between the NCR and eastern Uttar Pradesh till almost the Bihar border.
- The Yamuna Expressway connects Noida to Agra while the Lucknow-Agra Expressway goes up to the state capital.
- The Purvanchal Expressway will end about 18 km from the UP-Bihar border.
- It will give a boost to the economic development of eastern parts of Uttar Pradesh, especially the districts of Lucknow, Barabanki, Amethi, Ayodhya, Sultanpur, Ambedkar Nagar, Azamgarh, Mau and Ghazipur.
- The government has developed land banks along the expressway and the Uttar Pradesh Expressways Industrial Development Authority has been authorised to develop industrial hubs along the highway.

List of National Expressways-

| Expressway | Length(Km) | Declared as NE in |
|--|------------|-------------------|
| Ahmedabad–Vadodara Expressway | 93 | 1986 |
| Eastern Peripheral Expressway | 135 | 2006 |
| Delhi–Meerut Expressway | 96 | 2020 |
| Vadodara–Mumbai section of Delhi–Mumbai Expressway | 380 | 2020 |

| | | |
|--|-------|------|
| Delhi–Nakodar–Gurdaspur section of Delhi–Amritsar–Katra Expressway | 398 | 2020 |
| Nakodar–Amritsar section of Delhi–Amritsar–Katra Expressway | 99 | 2020 |
| Lucknow–Kanpur Expressway | 74 | 2020 |
| Bangalore–Chennai Expressway | 258 | 2021 |
| Purvanchal Expressway | 340.8 | 2021 |

3.7 Pradhan Mantri Gram Sadak Yojana (PMGSY)

In news- Recently, the Cabinet Committee on Economic Affairs approved continuation of Pradhan Mantri Gram Sadak Yojana-I and II upto September, 2022 for completion of balance road and bridge works.

About Pradhan Mantri Gram Sadak Yojana (PMGSY)-

- The Union Government started PMGSY-I to provide connectivity to unconnected habitations of population size 500+ in plain areas and 250+ in North-East and Himalayan states as per census 2001.
- In selected Left-wing extremism blocks, habitations of 100+ population were also to be provided connectivity.
- Its objective was to provide single all-weather road connectivity to eligible unconnected habitation of designated population size for overall socio economic development of the areas.
- The Scheme also included a component of upgradation of existing rural roads for those districts where all the eligible habitations had been saturated.
- PMGSY-II, which was approved by the Cabinet in May, 2013, envisaged consolidation of 50,000 Km of existing rural road network.
- Majority of pending works under PMGSY-I and II are in the North-East and hill States due to factors such as COVID lockdown, extended rains, winters, forest issues.
- Now all the balance habitations are targeted for connectivity within the proposed extended period, i.e. upto September, 2022.
- The PMGSY-III was launched in the year 2019 for consolidation of 1,25,000 Km existing through routes and Major rural links connecting habitations, inter-alia, to Gramin Agricultural Markets, Higher Secondary Schools and Hospitals and the implementation period of the scheme is upto March, 2025.

Road Connectivity Project for Left Wing Extremism Affected Areas-

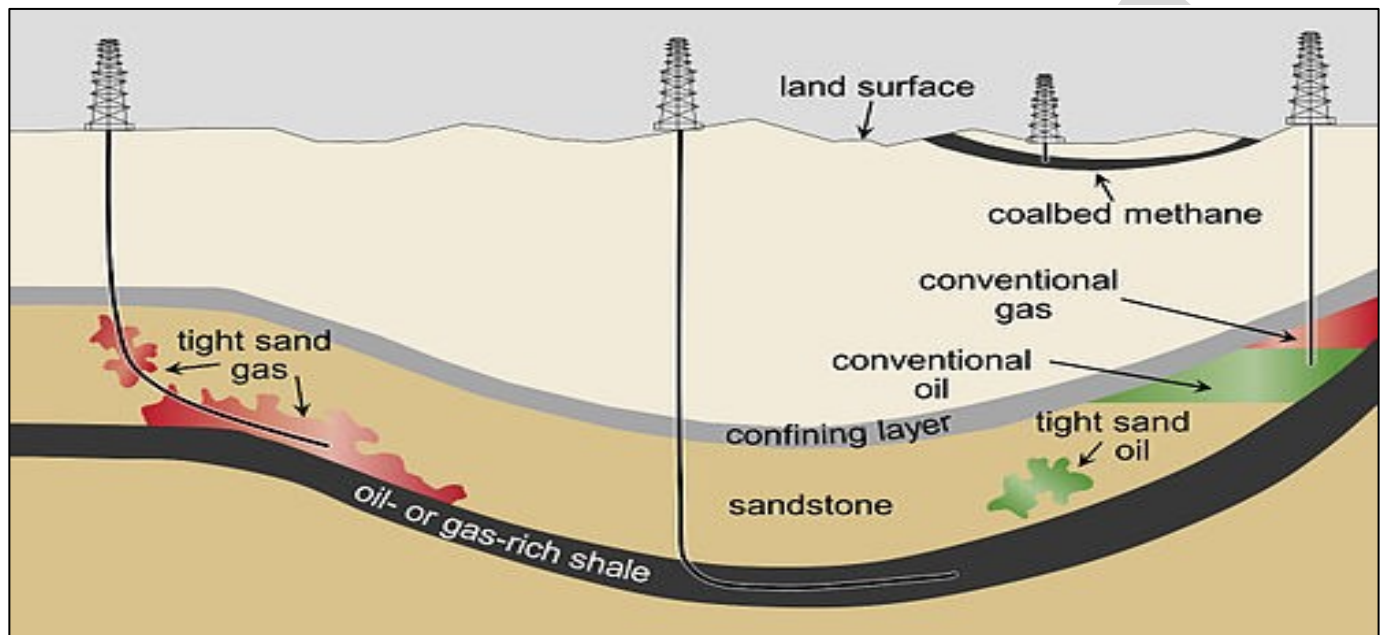
- Government launched it in the year 2016 as a separate vertical under PMGSY **for construction/upgradation of 5,412 Km road length** and 126 bridges of strategic importance.
- **It covered 44 districts in 9 states, viz.** Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Telangana and Uttar Pradesh.
- Implementation period: 2016-17 to 2019-20
- Road and bridge works to be taken up under the scheme have been **identified by the Ministry of Home Affairs** in consultation with states and security forces.
- Balance projects and additional projects of around 1,887 Km, which are yet to be sanctioned, are targeted for completion within the **proposed extended period, i.e. upto March, 2023.**

3.8 Tight oil

In news- Recently, Cairn Oil & Gas has announced that it is partnering with US-based Halliburton to start shale (Tight Oil) exploration in the Lower Barmer Hill formation, Western Rajasthan.

About Tight oil-

- Tight oil, also known as shale oil, shale-hosted oil or light tight oil, is light crude oil contained in petroleum-bearing formations of low permeability, often shale or tight sandstone.
- However, tight oil should not be confused with oil shale (shale rich in kerogen) or shale oil (oil produced from oil shales).



- The key difference between shale oil and conventional crude is that the **former is found in smaller batches**, and deeper than conventional crude deposits.
- **Its extraction requires creation of fractures in oil and gas rich shale** to release hydrocarbons through a process called **hydraulic fracking**.
- However, tight oil is processed into gasoline, diesel, and jet fuels— just like conventional oil.
- **Russia and the US are among the largest shale oil producers in the world**, with a surge in shale oil production in the US having played a key role in turning the country from an importer of crude to a net exporter in 2019.

Current status of shale oil exploration in India-

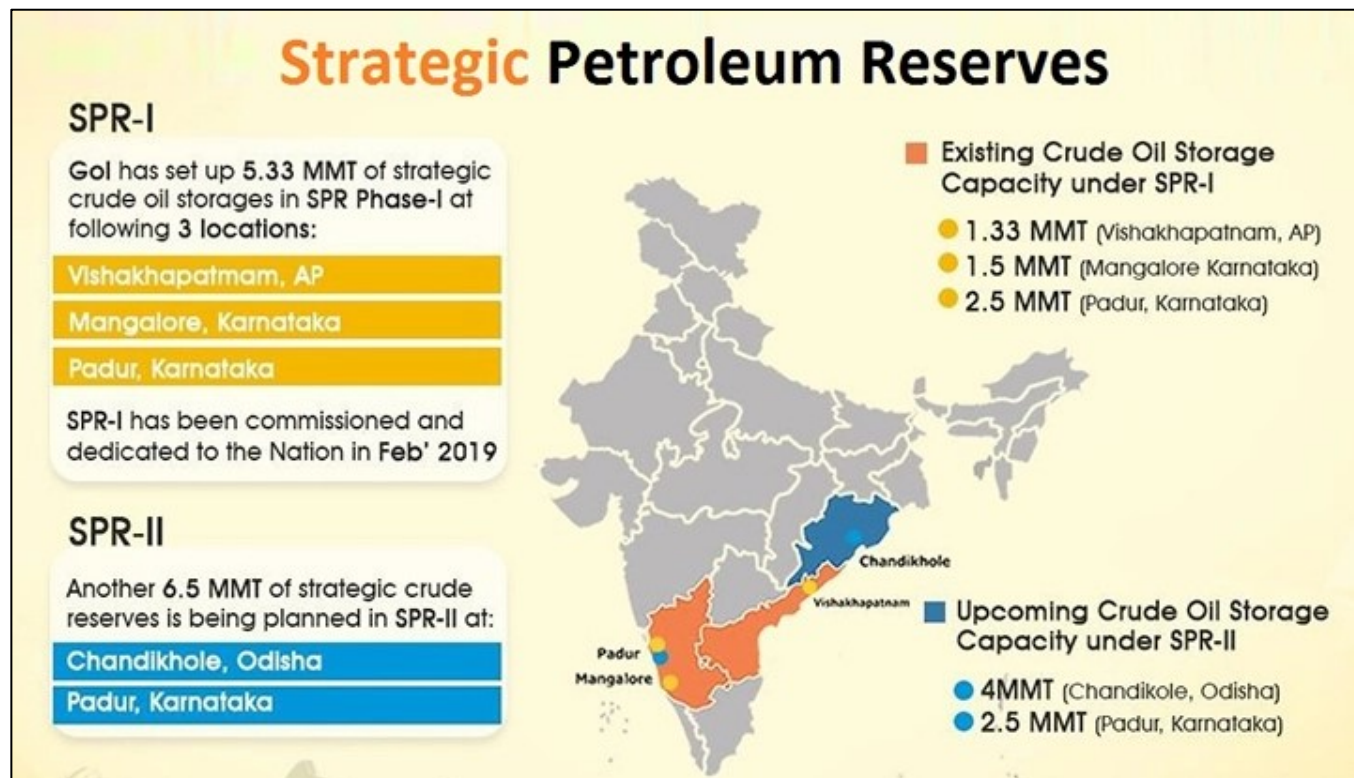
- Currently, there is no large-scale commercial production of shale oil and gas in India.
- Though ONGC's assessment found prospects of shale oil at the Cambay basin in Gujarat and the Krishna Godavari basin in Andhra Pradesh, the quantity of oil flow observed in these basins did not indicate commerciality.

3.9 Indian Strategic Petroleum Reserves

In news- Recently, India, the world's third-largest oil importer, has agreed to release 5 million barrels of crude oil from its strategic reserves (about 12.8 percent of 5.33 million tonnes of crude oil reserves) as part of a coordinated move along with the US, China, Japan and South Korea aimed at lowering international prices.

About Indian Strategic Petroleum Reserves-

- India has an existing crude storage capacity of 5.3 million tonnes (mt), including 1.33 mt in Visakhapatnam, 1.5 mt in Mangalore and 2.5 mt in Padur(near Udupi).
- Built at a cost of \$600 million, these reserves are operational and are sufficient to meet around nine-and-a-half days of India's crude oil requirements.
- India is dependent on imports to meet 85% of oil demand and 55% of natural gas requirements.
- OPEC accounts for a majority of India's crude oil imports and around 40% of global production.



- These strategic storages would be in addition to the existing storages of crude oil and petroleum products with the oil companies and would serve as a cushion during any supply disruptions.
- The construction of these Storage facilities is **being managed by Indian Strategic Petroleum Reserves Limited (ISPRL)**.
- ISPRL is a Special Purpose Vehicle, which is a wholly **owned subsidiary of Oil Industry Development Board (OIDB)** under the Ministry of Petroleum & Natural Gas.
- **Engineers India Limited (EIL) worked as the Project Management Consultant** for the three locations.
- The crude oil storages are constructed in **underground rock caverns** and are located on the East and West coast of India as rock caverns are considered as the safest means of storing hydrocarbons.

Other countries with the SPR-

- Besides the United States, the other 29 member countries in the International Energy Agency (IEA), including the United Kingdom, Germany, Japan, China and Australia, are required to hold oil in emergency reserves equivalent to 90 days of net oil imports.
- **Japan has one of the largest reserves after China and the United States.**
- As per IEA, there are typically three ways to maintain SPR levels to meet the 90-day requirement:
 - Commercial stocks held by refiners.
 - Held by the government.
 - Agency stocks.
- The stockholding structure is peer-reviewed every five years among members.

3.10 Bharat Gaurav trains

In news- The Union Minister of Railways, announced the introduction of theme-based tourist circuit trains - Bharat Gaurav Trains recently.

About Bharat Gaurav Trains-

- These trains will showcase India's rich cultural heritage and magnificent historical places to the people of India and the world.
- These trains will be operated by both private players and IRCTC on theme-based circuits. Even tour operators can apply for and lease trains and operate.
- Stakeholders can modify and run the train and Railways will help in maintenance, parking and other facilities.
- The Ministry has allocated around 190 trains for these theme-based circuits, described as the third segment in services offered by the railways after the freight and passenger segments.
- Service Provider to offer an all-inclusive package to tourists including rail travel, hotel accommodation, sightseeing arrangement, visit historical/heritage sites, tour guides etc.
- Branding and advertisement are permitted both inside and outside of the train.
- Train composition will be of 14 to 20 coaches including 2 SLRs(Guard Vans).
- Full flexibility to decide package cost based on level of services being offered.
- Registration fee for these trains for operators is Rs 1 (One) Lakh only.
- Priority to be based on the Rake Security Deposit Time and Date (Rake Security Deposit of Rs 1 (one) Crore per rake).
- Individual, Partnership Firm, Company, Society, trust, JV/Consortium (Unincorporated/Incorporated) are eligible.
- The annual 'Right of Use' charges calculated on the basis of the type of coach taken and the duration.
- The first year's Right of Use charges have to be paid upfront and the second year's have to be paid 15 days before the completion of the preceding year.
- It is to be noted that the IRCTC is already running the Ramayana train circuit and plans are underway to start the gurdwara train circuit connecting prominent gurdwaras across the country and these trains will be called Gurukripa.
- The Bharat Gaurav operator will also have to propose a similar business model wherein it takes care of local transport, sightseeing, food, local stays, etc. along with operating the trains.

4. ENVIRONMENT

4.1 Coalition for Disaster Resilient Infrastructure (CDRI)

In news- During the COP26, the Indian Prime Minister launched Infrastructure for Resilient Island States (IRIS) to secure and strengthen critical infrastructure in small island states against disasters induced by climate change.

New pledge-

- The Prime Minister promised **to cut its emissions to net zero by 2070** - missing a key goal of the COP26 summit for countries to commit to reach that target by 2050.
- **China has announced plans for carbon neutrality by 2060**, while the **US and EU** aim to hit net zero **by 2050**.

- India was the largest emitter, and the only G20 country, not to have announced a net-zero target until now.
- It is the first time that India has set a net zero target, at the Glasgow summit.
- He also announced that India would make a one billion-tonne reduction in projected emissions from now until 2030.

Five big announcements-

Making five big-ticket announcements at the climate change meeting in Glasgow, PM has called it '**Panchamrit**'.

1. The Prime Minister significantly **increased India's previous climate targets**, mentioned in the promises made during the Paris Agreement.
2. India's **target for installed renewable energy** capacity by 2030 has been **enhanced** from 450 GW to 500 GW.
3. At the same time, the **share of renewable energy in India's total electricity generation has been increased to 50 per cent by 2030** instead of 40 per cent earlier.
4. **India's emissions intensity, or emissions per unit GDP, will be reduced by at least 45 per cent** by the year 2030 from the 2005 levels. (In its existing target, India had promised to reduce its emissions intensity by 33 to 35 per cent by that date).
5. India is currently the fourth largest emitter of greenhouse gases, releasing over 3 billion tonne every year. India's emissions are rising, at about 4 to 5 percent every year. It is in this amount that a **one billion tonne reduction has been announced**.

4.2 Guide for safe rescue of Ganges River Dolphins

In news- Recently, the Ministry of Jal Shakti has released a guide for the safe rescue and release of stranded Ganges River Dolphins.

Guide to Safe Rescue and release of Stranded Gangetic Dolphins-

- The document is the detailed description of the methods of a safe capture and translocation established to rescue stranded dolphins and return them to their original habitats.
- It has been prepared by the Turtle Survival Alliance, India Program and Environment, Forest and Climate Change Department (EFCCD), Uttar Pradesh.

About Ganges River Dolphins (GRDs)

- These Dolphins have been designated the **National Aquatic Animal of India** since 2010.
- It can be found throughout the **Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems** of Nepal, India and Bangladesh.
- The Ganges river dolphin **can only live in freshwater and is essentially blind**.
- They **hunt by emitting ultrasonic sounds**, which bounces off of fish and other prey, enabling them to "see" an image in their mind.
- Its population is estimated at 4,000, and nearly 80% is found in the Indian subcontinent.

Threats-

- Wide-scale habitat degradation from pollution, hydroelectric and development projects and industrial run-off,

- Accidental deaths via entanglement in fishing nets, opportunistic poaching for meat and oil in certain pockets of the country
- They often accidentally enter canal channels in northern India and are often entrapped, and die as they are unable to swim up against the gradient, eventually getting stressed and harassed by the locals.

Conservation status-

- '**Endangered**' under IUCN Red List
- Schedule I of the Indian Wildlife (Protection) Act (1972).
- Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The Turtle Survival Alliance (TSA)-

- It was formed in 2001 as an IUCN partnership for sustainable captive management of freshwater turtles and tortoises.
- It arose in response to the rampant and unsustainable harvest of Asian turtle populations to supply Chinese markets, a situation known as the Asian Turtle Crisis.

4.3 National Mission for Clean Ganga (NMCG)

In news- The National Mission for Clean Ganga (NMCG) got registered in the Guinness Book of World Records on the first day of the Ganga Utsav- the River Festival 2021. The record was established for the highest number of photos of handwritten notes uploaded on the social media platform Facebook in an hour.

About the National Mission for Clean Ganga (NMCG)-

- It is an integrated conservation mission, approved as flagship programme by the Union Government in June 2014 to accomplish the twin objectives of
 - effective abatement of pollution
 - conservation and rejuvenation of the national river Ganga
- NMCG was **registered as a society** on 12th August 2011 under the Societies Registration Act 1860.
- It acted as the implementation arm of National Ganga River Basin Authority(NGRBA) under Environment (Protection) Act (EPA), 1986.
- NGRBA was **replaced by the National Council for Rejuvenation, Protection and Management of River Ganga** (referred as National Ganga Council) in 2016.
- **EPA envisages five tier structure** at national, state and district level to take measures for prevention, control and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water so as to rejuvenate the river Ganga as below-
 1. National Ganga Council under chairmanship of Hon'ble Prime Minister of India.
 2. Empowered Task Force (ETF) on river Ganga under chairmanship of Hon'ble Union Minister of Jal Shakti (Department of Water Resources, River Development and Ganga Rejuvenation).
 3. National Mission for Clean Ganga (NMCG).
 4. State Ganga Committees and
 5. District Ganga Committees in every specified district abutting river Ganga and its tributaries in the states.
- NMCG has a two tier management structure and comprises Governing Council and Executive Committee.
- Both of them are headed by Director General, NMCG, an Additional Secretary in the Government of India.

- For effective implementation of the projects under the overall supervision of NMCG, the State Level Program Management Groups (SPMGs) are, also headed by senior officers of the concerned States.

Guinness Book of World Records-

- Guinness World Records, known from its inception in 1955 until 1999 as The Guinness Book of Records and in previous United States editions as The Guinness Book of World Records.
- The brainchild of Sir **Hugh Beaver**, the book was co-founded by twin brothers Norris and Ross McWhirter in Fleet Street, **London**, UK, in August 1955.
- As of the 2022 edition, it is now in its 67th year of publication, published in 100 countries and 23 languages, and maintains over 53,000 records in its database.
- It is a reference book published annually, listing world records both of human achievements and the extremes of the natural world.
- Present editor- Craig Glenday

4.4 New Zealand's Long-tailed Bat

In news- Recently, Pekapeka-tou-roa, a native New Zealand bat, has won the country's annual Bird of The Year award, hosted by Forest and Bird, an independent conservation organisation.

More information-

- The Bird of the Year competition was started to raise awareness regarding New Zealand's native wildlife, their habitats and the threat they face.
- The competition requires every voter, through their email IDs, to pick the top 5 birds out of the listed birds every year, and then the results are tallied.
- The birds listed in the competition change every year.
- It is for the **first time that the organisation has let a native mammal enter the competition**, to raise awareness about the species and their critically endangered status.
- The title, awarded to a native mammal instead of a bird, has rung up controversy in the country.

About the Long tailed bat of New Zealand(Pekapeka-tou-roa)-

- It is one of 15 species of bats in the genus Chalinolobus variously known as "pied bats", "wattled bats" or "long-tailed bats".
- It is **one of the two surviving species endemic or native to New Zealand**.
- They are present throughout the mainland and can also be found on some offshore islands in the country.
- The species is a **small-sized bat with a long tail**, which is the only difference between long-tailed bats and New Zealand's other land mammal, the short-tailed bat.
- The **long-tailed bat is classed as 'nationally critical'** and short-tailed bat subspecies range from 'nationally vulnerable' to 'recovering'.
- They **fly at duck using echolocation calls to hunt moths, mosquitoes and insects**.

About Forest and Bird-

- Forest & Bird, also known by its formal name as the Royal Forest and Bird Protection Society of New Zealand.

- It is an environmental organisation specialising in the protection and conservation of New Zealand's indigenous flora and fauna and unique wild places and natural ecosystems.
- It was founded in 1923.

4.5 Global Methane Pledge

In news- Recently, the Global Methane Pledge was launched at the ongoing UN COP26 climate conference in Glasgow.

About Global Methane Pledge-

- It is an effort led jointly by the United States and the European Union.
- One of the central aims of this agreement is to cut down methane emissions by up to 30 per cent from 2020 levels by the year 2030.
- The pledge covers countries which emit nearly half of all methane, and make up 70% of global GDP.
- Over 90 countries have signed this pledge so far.

About Methane & its sources-

- Methane (CH₄) is the second-most abundant greenhouse gas in the atmosphere, after carbon dioxide.
- It is also a component of natural gas.
- Around 40% of CH₄ comes from natural sources such as wetlands and from a range of human activities, ranging from agriculture, cattle rearing and rice production to rubbish dumps.
- Human sources of methane include landfills, oil and natural gas systems, agricultural activities, coal mining, wastewater treatment, certain industrial processes and are responsible for 60 percent of global methane emissions.

Its impact on the environment-

- As per International Energy Agency (IEA), methane has a much shorter atmospheric lifetime (12 years as compared to centuries for CO₂).
- It is a much more potent greenhouse gas simply because it absorbs more energy while it is in the atmosphere.
- It has a global warming potential that is 80 times greater than carbon dioxide, about 20 years after it has been released into the atmosphere.
- According to the latest Intergovernmental Panel on Climate Change (IPCC) report, methane accounts for about half of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.
- According to the UN, 25 percent of the warming that the world is experiencing today is because of methane.

4.6 Glasgow declaration on land and land use

In news- Glasgow declaration on land and land-use was announced at the 26th Conference of Parties (CoP) held at Glasgow, Scotland.

About the declaration-

- It is the first major outcome of CoP26.

- It **aims to** halt and reverse forest loss and land degradation by 2030.
- It will cover forests estimated to be over 33.7 million square kilometres.
- It will be supported by a **pledge to provide £8.75bn (\$12bn) of public finance** from 12 countries, including the UK, from 2021-2025.
- This will **support activities in developing countries**, including restoring degraded land, tackling wildfires and supporting the rights of indigenous communities.
- At least £5.3 billion (\$7.2 billion) of newly-mobilised **private sector funding** will also be available.
- Chief executives from more than 30 financial institutions with over \$8.7 trillion of global assets including Aviva, Schrodgers and Axa-will also commit to eliminate investment in activities linked to deforestation.
- The UK will be committing £1.5 billion over five years to support the forests pledge, including £350 million for tropical forests in Indonesia and £200 million for the LEAF Coalition.
- Over 100 countries including the US, Russia, China and Brazil signed the Declaration.
- However, **India, Argentina, Mexico, Saudi Arabia and South Africa are the G20 countries that did not sign** the declaration.
- According to India, the declaration interlinks trade to climate change and forest issues and as trade falls under the WTO, it should not be brought under climate change declarations and wanted the word “trade” to be removed.

New York Declaration on Forests (NYDF)-

- It was **endorsed at the United Nations Climate Summit in September 2014.**
- It is a **voluntary political declaration** with over 200 endorsers - including countries, subnational governments, companies, indigenous groups, and NGOs - with ambitious targets to end forest loss.
- It **pledges to halve the rate of deforestation by 2020**, to end it by 2030, and to restore hundreds of millions of acres of degraded land.

NYDF was revised in October, 2021 and the goals under this include:

- Halting natural forest loss by 2030
- Restoring 350 million hectares of degraded landscapes and forestlands
- Improving governance
- Increasing forest finance
- Reducing emissions from deforestation and forest degradation

4.7 Global Resilience Index Initiative (GRII)

In news- Recently, ten global organisations with partial funding and in-kind contributions from the insurance sector and partner institutions have launched a Global Resilience Index Initiative (GRII) at COP26.

About GRI initiative

- It will provide a globally consistent model for the assessment of resilience across all sectors and geographies.
- It will use cross-sector risk modelling experience, including public-private partnerships between governments, academia, insurance and engineering.
- Its mission is to address the data emergency that is contributing to the climate crisis by helping sectors across the global economy quantify the value of building climate resilience and the costs of doing nothing.
- The coalition wants to achieve two immediate goals:

- They want to provide global open reference risk data developed using insurance risk modelling principles.
- They want to provide shared standards and facilities applicable to a wide range of uses: Corporate climate risk disclosure, national adaptation planning and reporting, and the planning of pre-arranged humanitarian finance.
- GRI will be a curated, open-source resource offering high level metrics across the built environment, infrastructure, agriculture and societal exposures with many potential applications in aggregated risk management worldwide.
- It could enable asset owners to compare portfolio risks across geographies and hazards, as well as helping countries to prioritise national adaptation investments.
- It can play an important role by creating a shared understanding of mounting physical climate risks.
- In turn, this **will help close the insurance protection gap and direct investment** and aid to where they are needed the most.

GRII partners and supporters are:

- Coalition for Climate Resilient Investment (CCRI).
- Fathom.
- Coalition for Disaster Resilient Infrastructure (CDRI).
- GEM Foundation.
- Insurance Development Forum (IDF)
- Oasis Loss Modelling Framework.
- UK Centre for Greening Finance and Investment (CGFI).
- United Nations office for Disaster Risk Reduction (UNDRR).
- University of Oxford.
- Willis Towers Watson.

4.8 Issi saaneq

In news- Recently, a new genus and species of plateosaurus sauropodomorph dinosaur has been identified from two fossilized skulls, one from a juvenile and other an almost adult individual, **found in Jameson Land, a peninsula in eastern Greenland.**

About Issi saaneq-

- Issi is a plateosaurus dinosaur described in 2021 from the Late Triassic Malmros Klint Formation of Greenland.
- It has been named Issi saaneq to **pay tribute to Greenland's Inuit language and means "coldbone"** .
- Palaeontologists from Harvard University unearthed two well-preserved dinosaur skulls during an excavation in East Greenland in 1994.
- One of the specimens was originally thought to be from a Plateosaurus, a well-known long-necked dinosaur that lived in Germany, France and Switzerland.
- Now, **an international team of researchers from Portugal, Denmark and Germany** has performed a micro-CT scan of the bones, which enabled them to create digital 3D models.
- The two-legged Issi saaneq lived about 214 million years ago and was a **medium-sized, long necked herbivore and a predecessor of the sauropods**, the largest land animals ever to live.
- **The new findings are the first evidence of a distinct Greenlandic dinosaur species.**

- The dinosaur differs from all other sauropodomorphs discovered so far, but has similarities with dinosaurs found in Brazil, such as the Macrocollum and Unaysaurus, which are almost 15 million years older.

Sauropods-

- Sauropoda, whose members are known as sauropods, is a clade of saurischian ('lizard-hipped') dinosaurs.
- They had very long necks, long tails, small heads (relative to the rest of their body), and four thick, pillar-like legs and they were herbivorous.
- These reptiles were the largest of all dinosaurs and the largest land animals that ever lived.
- They evolved into several major subgroups: Cetiosauridae, Brachiosauridae (including Brachiosaurus), Camarasauridae (including Camarasaurus), Diplodocidae (including Diplodocus and Apatosaurus), and Titanosauridae.

4.9 Kaiser-i-Hind butterfly

In news- Recently, the state government of Arunachal Pradesh approved the Kaiser-i-Hind as the State butterfly.

About the butterfly-

- Kaiser-i-Hind literally **means Emperor of India.**
- This **swallowtail butterfly with a 90-120 mm wingspan is found in six States along the Eastern Himalayas** at elevations from 6,000-10,000 feet in well-wooded terrain.
- Its **scientific name is Teinopalpus imperialis.**
- It also flutters in Nepal, Bhutan, Myanmar, Laos, Vietnam and southern China.
- It usually flies at tree-top level and descends to sit on low vegetation when there is strong morning sunlight.
- It is in flight during April-July and lays eggs on the underside of leaves.
- The government's move is **aimed at boosting butterfly tourism and saving the species from extinction in the State.**
- Although the Kaiser-i-Hind is **protected under Schedule II of Wildlife (Protection) Act, 1972**, it is hunted for supply to butterfly collectors.
- The two species of Kaiser-i-Hind were listed in **CITES Appendix II from 1987 onwards.**
- It is listed as **near threatened** under the IUCN list.
- **The state government also adopted the Pakke Tiger Reserve 2047 Declaration on Climate Change-Resilient and Responsive Arunachal Pradesh.**
- This Declaration aims to fulfil its goal of lowering emissions and achievement of sustainable development.

Other states with state butterfly-

- Maharashtra-Blue Mormon (first state in the country to announce).
- Uttarakhand-Common peacock.
- Tamil Nadu-Tamil Yeoman (Cirrochroa thais), it is locally known as Tamil Maravan meaning 'Tamilian Warrior.
- Karnataka-Southern birdwings.
- Kerala-Malabar banded peacock.

4.10 Outcomes of COP26 summit

In news- COP26 summit which was held in Glasgow, Scotland has been concluded recently.

About COP26-

- **The U.K. Presidency of COP26 had four key objectives summarized as “coal, cash, cars, and trees”—in other words:**
 - **Ending coal power generation** (a pledge now endorsed by 46 countries with a deadline set at 2040).
 - **Providing the long promised \$100 billion annual support** towards developing countries’ green transition (a goal that was meant to cover the period 2020-2025).
 - **Supporting electric vehicles** and a phase out of gasoline and diesel-powered motor vehicles by 2040.
 - **Reversing deforestation** in an attempt to protect existing nature-based solutions to capturing emissions.
- COP26 resulted in the **completion of the Paris Agreement rulebook and kept the Paris targets alive**, giving us a chance of limiting global warming to 1.5 degrees Celsius.
- During the summit, member countries **agreed for the Glasgow Climate Pact**, which will accelerate action on climate this decade, and finally complete the Paris Rulebook.
- The pact calls on 197 countries to report their progress towards more climate ambition next year, at COP27, set to take place in Egypt.
- For the first time, **COP agreed a position on phasing down unabated coal power**.
- Meanwhile, more than 40 countries – including major coal-users such as **Poland, Vietnam and Chile** – **agreed to shift away from coal, one of the biggest generators of CO2 emissions**.
- Leaders from over 120 countries, representing about 90 per cent of the world’s forests, **pledged to halt and reverse deforestation by 2030**.
- There was also a **methane pledge, led by the United States and the European Union**, by which more than 100 countries agreed to cut emissions of this greenhouse gas by 2030.
- The private sector also showed strong engagement with nearly 500 global financial services firms agreeing to align \$130 trillion – some 40 per cent of the world’s financial assets – with the goals set out in the Paris Agreement, including limiting global warming to 1.5 degrees Celsius.
- **The United States and China pledged to boost climate cooperation** over the next decade.
- Regarding green transport, more than 100 national governments, cities, states and major car companies **signed the Glasgow Declaration on Zero-Emission Cars and Vans to end the sale of internal combustion engines by 2035** in leading markets, and by 2040 worldwide.
- At least 13 nations also committed to **end the sale of fossil fuel powered heavy duty vehicles by 2040**.
- A group of 11 countries led by Ireland, France, Denmark, and Costa Rica among others created the **Beyond Oil and Gas Alliance (BOGA)**, first-of-its kind alliance to set an end date for national oil and gas exploration and extraction.
- **Over hundred countries have agreed to launch Adaptation Research Alliance** which will catalyse and scale investment in action-oriented research and innovation for adaptation that strengthens resilience in communities most vulnerable to climate change.
- The ARA involves a handful of UK universities, including SOAS in London, plus the universities of East Anglia and Exeter, University of Liberia, and the University of Maryland in the US, **philanthropic organisations like the Bill and Melinda Gates Foundation**, the European Institute of Innovation & Technology’s climate Knowledge and Innovation Community.

India's initiatives as part of COP26-

- India announced that its net zero target is to be achieved by 2070 which is two decades after than the desired deadline of the year 2050 .
- To strengthen India's stand for renewable energy like solar energy, India has signed to the Glasgow Breakthrough Agenda in this year's COP26 along with over 35 other nations to promote clean energy and make it more affordable.
- The Government of India has launched 'E-Amrit', a web portal on electric vehicles (EVs), at the ongoing COP26 Summit in Glasgow, UK.
- E-Amrit is a one-stop destination for all information on electric vehicles—busting myths around the adoption of EVs, their purchase, investment opportunities, policies, subsidies, etc.
- The portal has been developed and hosted by NITI Aayog under a collaborative knowledge exchange programme with the UK government and as part of the UK-India Joint Roadmap 2030, signed by the Prime Ministers of the two countries.
- E-Amrit intends to complement initiatives of the government on raising awareness on EVs and sensitizing consumers on the benefits of switching to electric vehicles.
- Despite being the third-largest methane emitter, India was not a signatory of Global methane pledge.
- India also was not part of the pledge to deforestation despite hosting the world's largest contiguous mangrove forest, the Sundarbans.

About the Conference of the Parties (COP)-

- COP is a UN-facilitated effort to help stave off what has been called a looming climate emergency.
- In 1992, the UN organized a major event in Rio de Janeiro called the Earth Summit, in which the UN Framework Convention on Climate Change (UNFCCC) was adopted.
- In this treaty, nations agreed to "stabilize greenhouse gas concentrations in the atmosphere" to prevent dangerous interference from human activity on the climate system.
- Today, the treaty has 197 signatories.
- Since 1994, when the treaty entered into force, every year the UN has been bringing together almost every country on earth for global climate summits or "COPs", which stands for 'Conference of the Parties'.
- COP25 was held in Madrid, Spain and next COP27 will be held in Egypt.

5. FOREIGN AFFAIRS

5.1 US CAATSA

In news- Recently, some of the US lawmakers batted for a sanctions waiver for India for its purchase of the S-400 missile defence system from Russia.

Countering America's Adversaries Through Sanctions Act (CAATSA)-

- The US has imposed sanctions on Russia under the CAATSA for manufacturing S-400 Triumf.
- The law also provides for **punitive action against countries purchasing defence hardware from Russia.**
- The law passed in 2017 also imposed sanctions on Iran, North Korea.
- It was passed in the wake of Russian interference in the U.S. 2016 presidential election, and was designed to punish Russia by discouraging trade with its defense and intelligence sectors.
- The CAATSA Sanctions represent the implementation of multiple legal authorities.

- Some of these authorities are in the form of executive orders issued by the President and some other authorities are public laws (statutes) passed by the Congress.
- These authorities are further **codified by Office of Foreign Assets Control (OFAC)** in its regulations which are published in Code of Federal Regulations (CFR).
- OFAC has been charged with enforcing the provisions of the law.

About S-400 missile-

- The S-400 is known as Russia's most advanced long-range surface-to-air missile defence system.
- It is fitted with a radar and anti-missile system.

S-400 Triumph Features

Can engage all types of aerial targets including aircraft, unmanned aerial vehicles and all types of missiles

Locates targets at 600 km and can destroy them at 400 km range, up to an altitude of 30 km

The system can engage multiple targets simultaneously

Integrates:

- Multifunction radar
- Anti-aircraft missile systems
- Launchers
- Autonomous detection and targeting systems
- Command and control centre

Range of missiles:

Capable of firing different types of missiles to create a layered defence shield

| | |
|----------------|------------------|
| ● 40N6: 400 km | ● 9M96E2: 120 km |
| ● 48N6: 250 km | ● 9M96E: 40 km |

- It has a range of about 600 km for surveillance and can track 300 targets simultaneously.
- This system also detects fighter jets which are a part of China's arsenal– F-22, F-35 etc.
- It has 9 launchers, 120 missiles, command and support vehicles.
- It fits in all missile systems and can be configured to long-range, semi long-range, medium-range and short-range systems depending on the preference.

5.2 BASIC countries

In news- During the plenary session of the UN-led COP26 summit on climate change in Glasgow, Scotland, BASIC countries have underlined climate finance goals for the developed countries.

Key updates-

- During the opening of the COP26, India's Environment Minister, on behalf of Basic countries, highlighted a road map for the delivery of the promised \$100 billion climate finance support for developing countries.
- The financial support is expected **to be mobilised in between 2021 to 2025.**
- The Basic grouping also said its views were **aligned with the position taken by the western African country of Guinea on behalf of the G77 group of developing nations and China.**

- The Basic bloc is **expecting a market mechanism that facilitates private sector engagement in carbon markets** in the larger fight against climate change.
- They are also **expecting to initiate the process within the UN Framework Convention on Climate Change (UNFCCC)** of setting a new collective quantified goal on finance.

Note- In 2009, at the COP15 in Copenhagen, Denmark, developed nations committed to a **goal of mobilising \$100 billion a year by 2020** to address the needs of developing countries. A finance delivery plan jointly led by Canada and Germany said developed countries will likely be able to mobilise \$100 billion funding only in 2023 - with a delay of three years.

About BASIC Countries-

- BASIC stands for Brazil, South Africa, India and China.
- The BASIC group was **formed as the result of an agreement signed by the four countries in November 2009 just before UNFCCC's Copenhagen summit.**
- These nations have a broadly **common position on reducing greenhouse gas emissions and raising the massive funds** that are needed to fight climate change.
- This emerging geopolitical alliance, initiated and led by China, then brokered the final Copenhagen Accord with the United States.
- Subsequently, the grouping is working to define a common position on emission reductions and climate aid money, and to try to convince other countries to sign up to the Copenhagen Accord.
- However, in January 2010, the grouping described the Accord as merely a political agreement and **not legally binding.**

Other nations negotiating within UNFCCC-

- Other than BASIC, there are the Organisation of Petroleum Exporting Countries (**OPEC**), the group of countries of Central Asia, Caucasus, Albania and Moldova (**CACAM**), the **Cartagena Dialogue**, the Independent Alliance of Latin America and the Caribbean (**AILAC**), and the Bolivarian Alliance for the Peoples of our America (**ALBA in Spanish**), etc.
- There are also the Group of 77 developing countries, the African Group, the Arab States, the Environmental Integrity Group, the Least Developed Countries, the Small Island Developing States, etc.

5.3 18th ASEAN-India Summit

In news- Recently the Indian Prime Minister attended the 18th Asean-India Summit via video conferencing.

Key updates-

- This Summit **reviewed the status of Asean-India Strategic Partnerships** & also reviewed the progress made in key areas including Covid-19 and Health, Trade and Commerce, Connectivity, and Education and Culture.
- This summit was **chaired by the Sultan of Brunei.**
- The summit theme was **"We Care, We Prepare, We Prosper"**
- During his address, the Prime Minister pointed out that the year **2022 will complete three decades of India-Asean partnership** and this milestone will be celebrated as the 'Asean-India Friendship Year'.
- **He also addressed the 16th East Asia Summit a day before this summit**, where he reaffirmed India's focus on a free, open and inclusive Indo-Pacific and the principle of Asean Centrality in the region.

- The **summit is held every year** and provides an opportunity for India and Asean to engage at the highest level.

The Association of Southeast Asian Nations (ASEAN)-

- ASEAN was **established on 8 August 1967 in Bangkok, Thailand**, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand.
- Brunei Darussalam (1984), VietNam (1995), Lao PDR and Myanmar (1997), and Cambodia (1999), joined the ASEAN later.
- Its fundamental Principles are derived from **Treaty of Amity and Cooperation, 1976**.
- The **ASEAN charter entered into force in 2008** and became the legally binding agreement.
- ASEAN community consists of 3 pillars: **Political-security community, Economic community, Socio-cultural community**.
- **The United States became a Dialogue Partner country of ASEAN in 1977**.
- In 1994, ASEAN took the lead in establishing the **ASEAN Regional Forum (ARF)**, which now has 27 members and meets each year at the ministerial level.
- The up-gradation of the relationship into a **Strategic Partnership in 2012** was a natural progression to the ground covered since India became a Sectoral Partner of the ASEAN in 1992, Dialogue Partner in 1996 and Summit Level Partner in 2002.
- ASEAN is **India's fourth largest trading partner**.
- The **ASEAN Defence Ministers' Meeting (ADMM)** is the highest defence consultative and cooperative mechanism in ASEAN.
- The ADMM+ brings together Defence Ministers from the 10 ASEAN nations plus Australia, China, India, Japan, New Zealand, Republic of Korea, Russia, and the United States on a biannual basis.

The East Asia Summit-

- It is a premier leaders-led forum for discussions on important strategic issues in the Indo-Pacific.
- It was started in 2005.
- It has played an important part in the strategic and geopolitical evolution of East Asia.
- Besides the 10 Asean member countries, the East Asia Summit includes India, China, Japan, the Republic of Korea, Australia, New Zealand, the United States and Russia (in total 18 members).
- The EAS calendar culminates in the annual Leaders' Summit, which is usually held alongside ASEAN Leaders' meetings in the fourth quarter of every year.
- It is also an important platform for furthering practical cooperation in the Indo-Pacific by building upon the convergence between ASEAN Outlook on Indo-Pacific (AOIP) and Indo-Pacific Ocean's Initiative (IPOI).

5.4 G20 summit, 2021

In news- Recently the Indian Prime Minister participated in the G20 summit, which was held from 30-31 October in Rome, Italy.

Key updates-

- It was the **sixteenth meeting** of G20.

- During the Summit leaders adopted the '**Rome Declaration**' that gives a very strong message under the health section with the countries agreeing that the **COVID-19 immunisation is a global public good**.
- The G-20 leaders have agreed that the World Health Organisation would be strengthened to fast-track the process for emergency use authorisation for Covid-19 vaccines.
- The summit **focused on three broad, interconnected pillars of action**: People, Planet, Prosperity.

Outcome-

- The US administration and the European Union reached an agreement to roll back the steel and aluminum tariff regime that had been imposed by the Trump administration in 2018.
- The agreement retained some protection for American steel and aluminum producers by adopting a tariff-rate quota regime.
- It also ended retaliatory tariffs on American goods the EU had imposed and cancelled a scheduled tariff increase by the EU.

About Group of Twenty (G20)-

- The G20 is the **international forum that brings together the world's major economies**.
- **Its members account for more than 80% of world GDP**, 75% of global trade and 60% of the population of the planet.
- It is made up of 19 countries and the European Union.
- The 19 countries are Argentina, Australia, Brazil, Canada, China, Germany, France, India, Indonesia, Italy, Japan, Mexico, the Russian Federation, Saudi Arabia, South Africa, South Korea, Turkey, the UK, and the US.
- The forum has **met every year since 1999** and since 2008, including a yearly Summit, with the participation of the respective Heads of State and Government.
- In addition to the Summit, ministerial meetings, Sherpa meetings (in charge of carrying out negotiations and building consensus among Leaders), working groups and special events are organized throughout the year.

G20's Finance Track-

- Within the G20 process, a particular place is reserved for the "Finance Track", which includes the meetings held among Finance and Economy Ministers, Central Bank Governors, Vice Ministers and Sherpas (negotiators) designated by the respective economic ministries.
- It mainly focuses on economic, financial, monetary and tax issues.

5.5 Political crisis in Bosnia

In news- Bosnia is going through its worst political crisis since its 1990s war. With the international presence in the region waning, **unresolved rivalries and opposing interests among the three ethnic groups-** Bosniaks, Serbs, and Croats **have resurfaced**.

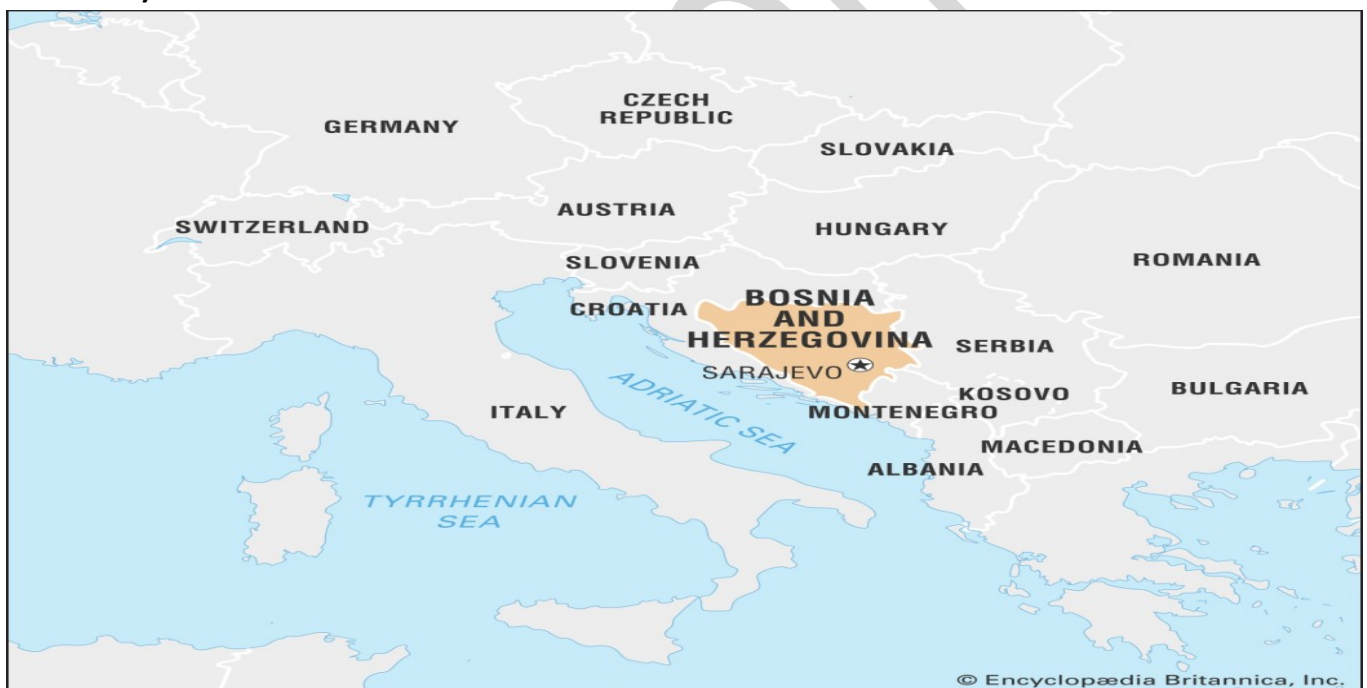
About the crisis-

- From 1992 until 1995, Bosnia was under attack by Serb and Croat forces aiming to divide the country into a Greater Serbia and a Greater Croatia, respectively.
- The conflict ended with **the US-sponsored Dayton peace accords reached in 1995** that established Bosnia and Herzegovina as a state composed of two entities: A Bosniak-Croat dominated Federation entity and a Serb-run Republika Srpska entity.

- The recent crisis began in July, 2021 when **Valentin Inzko, then the high representative overseeing the implementation of the peace accord**, banned denial of genocide and established war crimes, as well as the glorification of war criminals.
- Republika Srpska, along with allies China and Russia, does not recognise the Office of the High Representative and has long requested for it to shut down.
- **Milorad Dodik**, Bosnia and Herzegovina’s Serb member of the tripartite presidency, recently announced that **Republika Srpska** would be moving towards forming its own Bosnian Serb army, after pulling out of Bosnia’s joint armed forces.
- This announcement has alarmed many Bosniaks who fear a return to the violence of the 1990s as the International Court of Justice in 2007 found the Bosnian Serb army to be responsible for genocide in Srebrenica, located in the Republika Srpska entity near the border with Serbia.
- The European Union and the United States have issued statements calling “all political actors” and “all parties” to abandon divisive and secessionist rhetoric and respect state institutions.

About Bosnia-

- Its official name is Bosnia and Herzegovina.
- **Capital:** Sarajevo.
- **Official languages:** Bosnian, Croatian, and Serbian.
- **Currency:** Convertible Marks.



- It is bordered by Croatia, Serbia, and Montenegro, and has a narrow stretch of land along the Adriatic Sea.
- The **Dinaric Alps** stretch along its western border.
- The Sava River, Neretva River are its major rivers.
- Around 40 percent of Bosnia and Herzegovina is covered in forest, consisting of oak, pine, and beech trees.
- Plums, grapes, pears, and apples are the prime fruits in the country.

5.6 National Emergency in Ethiopia

In news- Recently, Ethiopia declared a six-month state of emergency with immediate effect after the **Tigray People’s Liberation Front (TPLF) claimed to have captured several towns in recent days.**

About Tigray People's Liberation Front (TPLF)-

- TPLF is a left-wing ethnic nationalist paramilitary group, now leading political party, and former ruling party of Ethiopia, and **designated as a terrorist organization by the Ethiopian government under Abiy Ahmed.**
- It was established in 1975 at Dedebit, northwestern Tigray.
- It is widely known as Woyane, Weyane, Wayana or Wayane in older texts and Amharic publications.

Ethiopia-Country profile-

- The Federal Democratic Republic of Ethiopia is located in the north-eastern part of Africa commonly known as the Horn of Africa.
- It is the oldest independent country in Africa and one of the oldest in the world.
- It is the 10th largest country in Africa and 2nd most populous country in Africa after Nigeria.
- It is bordered by Sudan in the west, Somalia and Djibouti in the east, Eritrea in the north and Kenya in the south.
- It is composed of 9 National Regional States (NRS) and two administrative councils – Addis Ababa and Dire Dawa.
- The official currency of Ethiopia is the Ethiopian Birr (ETB).
- From the north and running down the center are the Abyssinian highlands.
- To the west of the chain the land drops to the grasslands of Sudan, to the east to the deserts of the Afar.
- South of Addis Ababa, the land is dominated by the Rift Valley Lakes.
- The Ethiopian people's comprise about eighty nationalities of which the Amhara and the Oromo constitute the majority, with about 60 percent of the total population.
- The most famous Ethiopian river is the Blue Nile or Abbay, which flows a distance of 1,450 kilometers from its source to join the White Nile at Khartoum.
- Amharic or Amharigna is the official language of Ethiopia.
- Other main languages including Oromigna and Tigrigna are also widely spoken.
- The oldest remains of a human ancestor ever found, which have been dated as being some five million years old, were discovered in the Awash Valley in Ethiopia.
- This beats the discovery of "Lucy", a 3.2 million year old skeleton, who was unearthed in the same area in 1974.

5.7 Abu Dhabi's nod to non-muslim civil marriage

In news- Abu Dhabi has given approval to non-Muslim marriage recently.

Key updates

- With this nod, non-Muslims will be allowed to marry, divorce and get joint child custody, and proof of paternity, and inheritance under civil law in Abu Dhabi.
- It is the latest step in the United Arab Emirates where personal status laws on marriage and divorce had been based on Islamic sharia principles, as in other Gulf states to maintain its competitive edge as a regional commercial hub.
- The decree was approved by Abu Dhabi's Sheikh Khalifa bin Zayed al-Nahayan, who is also president of the UAE federation of seven emirates.
- The civil law regulating non-Muslim family matters is being the first of its kind in the world.

- A new court to handle non-Muslim family matters will be setup in Abu Dhabi and will operate in both English and Arabic.
- The UAE last year introduced a number of legal changes at the federal level, including decriminalising premarital sexual relations and alcohol consumption, and cancelling provisions for leniency when dealing with so-called “honour killings”.

United Arab Emirates (UAE)-country profile-

- UAE is a federation of seven states: Abu Dhabi, Dubai, Sharjah, Ras Al Khaimah, Ajman, Umm Al Quwain, and Fujairah.
- Border countries are Oman and Saudi Arabia.
- UAE shares maritime borders with Iran and Qatar.



- Capital- Abu Dhabi.
- Currency- Dirham
- The country's largest city is Dubai.
- In 2020, it became the first Gulf state to establish diplomatic relations with Israel.

5.8 Delhi Regional Security Dialogue on Afghanistan

In news- India hosted the "Delhi Regional Security Dialogue on Afghanistan" on 10 November 2021.

About the Dialogue

- The Dialogue was held at the level of National Security Advisers / Secretaries of Security Councils.
- It was chaired by National Security Adviser, Shri Ajit Doval.
- It witnessed the participation of Iran, Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan and Uzbekistan, who were represented by their respective National Security Advisers / Secretaries of the Security Councils.
- However, both China and Pakistan have denied participating in it.
- No delegation from Afghanistan was invited.

- It aimed to deliberate upon measures to address the relevant security challenges and support the people of Afghanistan in promoting peace, security and stability.
- All the participating countries called for closer coordination and collective efforts to tackle threats such as terrorism emanating from Afghanistan and to address a looming humanitarian crisis.
- This is the first time that all Central Asian countries – and not just Afghanistan’s immediate land neighbours, Tajikistan, Turkmenistan and Uzbekistan – have participated in discussions in this format along with Kazakhstan and Kyrgyz Republic.
- The first two editions of the Dialogue were hosted by the Islamic Republic of Iran in 2018 and 2019.

5.9 APEC summit, 2021

In news- The Asia-Pacific Economic Cooperation (APEC) meeting was hosted by New Zealand recently.

Key highlights of the summit

- The leaders concluded the 2021 APEC Economic Leaders’ Meeting by adopting a **declaration under the theme of ‘Join, Work, Grow, Together’**.
- It lays out **commitments in accelerating economic recovery and achieving sustainable and inclusive growth, including further actions in tackling climate change**, empowering groups with untapped economic potential and addressing the digital divide.
- Leaders also **endorsed the Aotearoa Plan of Action**, a blueprint to implement the APEC Putrajaya Vision 2040, which was adopted at the 2020 APEC Economic Leaders’ Meeting.
- **Aotearoa Plan of Action aims** for an "open, dynamic, resilient and peaceful Asia-Pacific community by 2040, for the prosperity of all our people and future generations.
- In implementing the Putrajaya Vision 2040, economies will build on APEC’s founding documents, including the 1994 Bogor Goals and the 1995 Osaka Action Agenda.
- It was stated that the APEC summit-2022 will be held in Thailand.

About APEC-

- It is an inter-governmental forum for 21 member economies in the Pacific Rim that promotes free trade throughout the Asia-Pacific region.
- It was started in 1989 in response to the growing interdependence of Asia-Pacific economies and the advent of regional trade blocs in other parts of the world.
- It aimed to establish new markets for agricultural products and raw materials beyond Europe.
- It is headquartered in Singapore.
- Its 21 member economies are home to about 2.9 billion people and represent approximately 60 per cent of world GDP and 48 percent of world trade in 2018.
- The APEC Business Advisory Council (ABAC) is an independent group of business leaders that advises APEC leaders on priority issues for business in the region.
- APEC has three official observers: the Association of Southeast Asian Nations Secretariat (ASEAN), the Pacific Economic Cooperation Council (PECC) and the Pacific Islands Forum Secretariat (PIF).
- Its full members are: Australia; Brunei Darussalam; Canada; Chile; China; Colombia; Ecuador; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; Peru; Philippines; Singapore; Pacific Islands Forum; Chinese Taipei; Thailand; United States of America; and Vietnam.

5.10 Sydney dialogue

In news- The Indian Prime Minister delivered the keynote address at The Sydney Dialogue during which he elaborated on India's technology evolution and revolution. His speech referred to the perils of technology and data that had turned cryptocurrencies into new forms of “weapons”.

About the Sydney Dialogue-

- It is an initiative of the Australian Strategic Policy Institute.
- It is an annual summit of cyber and critical technologies to discuss the fallout of the digital domain on the law and order situation in the world.
- It was held from November 17-19, 2021.
- It brought together political, business and government leaders to debate, generate new ideas and work towards common understandings of the opportunities and challenges posed by emerging and critical technologies.

5.11 Matosinhos Manifesto

In news- Recently, the European Space Agency (ESA) council approved a **manifesto to accelerate the use of space** in Europe to tackle the urgent and unprecedented societal, economic and security challenges faced by Europe and its citizens.

About the Manifesto-

- At the Intermediate Ministerial Meeting that was held in Matosinhos, Portugal, the Council of Ministers unanimously adopted this resolution.
- It lays down a vision for the continent in terms of maintaining and expanding its activities in space.
- **The resolution defines three “accelerators” to further advance Europe’s space ambitions. They are:**
 - a. To start working towards the “Space for a Green Future”,** so that people are better able to understand the current state of the planet and to develop scenarios and solutions for sustainable life on Earth.
 - b. Rapid and Resilient Crisis Response-** It aims to support governments to act decisively on crises facing Europe, from flooding and storms to wildfires.
 - c. Protection of Space Assets,** whose objective is to safeguard ESA astronauts and assets from interference by space debris and space weather?
- First accelerator is in line with achieving net-zero greenhouse gas emission targets by the year 2050.
- Other than this, **the council recognised two “inspirators”** to reinforce European leadership in science, technology development and inspiration: **an icy moon sample return mission and human space exploration.**

European Space Agency (ESA)-

- It is an intergovernmental organisation of 22 member states dedicated to the exploration of space.
- It was **established in 1975 with the aim of developing Europe’s space capabilities.**
- Its headquarters **is in Paris.**
- **Its mission is** to shape the development of Europe’s space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world.

6. GEOGRAPHY

6.1 Kameng river

In news- Recently, a large number of fish and aquatic life were found dead in Kameng river in Arunachal Pradesh.

Key updates-

- As per the state government, the reason for such happening may **be high total dissolved solids (TDS) levels in the river.**
- The total dissolved solids (TDS) level of the Kameng river is around 6,800 mg/litre, which is much higher than normal.
- Water of the River has turned black with high levels of turbidity.
- The district authorities suspected **mudslide in the upper reaches of the Kameng river to be the cause behind the turbidity.**

About the Kameng river-

- It was previously named Bhareli River, now called Kameng in Arunachal Pradesh and Jia Bhoreli in Assam.
- The river originates from a glacial lake below the Gori Chen mountain south of the imaginary McMahon Line dividing India and China.
- It is one of the major tributaries of the Brahmaputra River.
- It forms the boundary between East Kameng District and West Kameng Districts.
- It is also the boundary between the Sessa and Eaglenest sanctuaries to its west and the Pakke tiger reserve to the east.
- The Dafla Hills are east and the Aka Hills (home of Aka tribe) are west of the Kameng River.

6.2 Exoplanets

In news- Recently, Indian Astronomers have found a new method to understand the atmosphere of exoplanets.

Key updates-

- In the recent past, astronomers have discovered that many other stars have planets going around them, like our Solar System.
- Till now, around 5000 such exoplanets have been detected.
- Recently, **Aritra Chakrabarty, a postdoctoral researcher at Indian Institute of Astrophysics (IIA), Bangalore, developed a detailed three-dimensional numerical method** and simulated the polarization of exoplanets.
- Just like the Solar-planets, exoplanets are slightly oblate due to their rapid spin rotation.
- Further, depending on its position around the star, only a part of the planetary disk gets illuminated by the starlight.
- This **asymmetry of the light-emitting region gives rise to non-zero polarization.**
- The polarization at different wavelengths is sufficiently high and hence can be detected even by a simple polarimeter if the starlight is blocked.
- **It helps study the atmosphere of the exoplanets** along with its chemical composition.

- **Unlike the traditional and popular methods such as Transit Photometry and Radial Velocity methods** that can detect planets that are viewed almost edge-on only, **this polarimetric method can detect and probe exoplanets** orbiting with a broad range of orbital inclination angles.

What are exoplanets?

- Exoplanets are planets that lie beyond our solar system.
- Most orbit other stars, but free-floating exoplanets, called rogue planets, orbit the galactic center and are untethered to any star.
- The first possible evidence of an exoplanet was noted in 1917, but was not recognized as such.
- The first confirmation of detection occurred in 1992.
- This was followed by the confirmation of a different planet, originally detected in 1988.
- Exoplanets are very hard to see directly with telescopes.
- They are hidden by the bright glare of the stars they orbit.
- So, astronomers use other ways to detect and study these distant planets.
- They search for exoplanets by looking at the effects these planets have on the stars they orbit.

6.3 Leonids Meteor Shower

In news- The annual Leonids Meteor Shower has begun, with peak activity expected on November 17.

About Leonids Meteor Shower

- The debris that forms this meteor shower originates from a small comet called 55P/Tempel-Tuttle in the constellation Leo, which takes 33 years to orbit the sun.
- It was originally discovered in 1833.
- The meteor shower has been named the Leonids Meteor Shower as it seems to emanate from the sector of the sky where the head of the Leo constellation lies.
- The Leonids are considered to be a major shower that features the fastest meteors, which typically travel at speeds of 71 km per second, although the rates are often as low as 15 meteors per hour.
- They are also called fireballs and earthgrazer meteors, fireballs, because of their bright colours, and earthgazer, because they streak close to the horizon.
- The light which is why a meteor is called a shooting star — is a result of the friction between the meteorite and the molecules present in the Earth's atmosphere because of which it burns.
- A meteor storm should have at least 1,000 meteors per hour.
- The last such storm took place in 2002.
- The showers are visible on any cloudless night when the Moon is not very bright.
- Ideally, the viewing location should have no light pollution and the farther away from cities the better.
- The peak time of a meteor shower comes when the Earth passes through the densest part of the debris.

Leo (Constellation)

- It is a large equatorial constellation which represents a lion.
- It is lying between Cancer, the crab to the west and Virgo the maiden to the east.
- It is located in the Northern celestial hemisphere.
- It appears highest in the midnight sky in the months around February.
- Its brightest star, Regulus lies very close to the ecliptic, the path that the Sun traces across the sky each year.

6.4 Kamo'oailewa

In news- Recently, astronomers have observed that a quasi-satellite — a near-Earth object that orbits the Sun and yet remains close to the Earth and spotted by the PanSTARRS telescope in Hawaii may be a piece of the moon.

About Kamo'oailewa-

- **It was discovered in 2016 by the PanSTARRS telescope** at Haleakala Observatory, Hawaii, that is operated by the University of Hawaii's Institute for Astronomy and funded by NASA's Planetary Defense Coordination Office.
- The near-Earth asteroid **Kamo'oailewa was named Kamo'oailewa, a Hawaiian word that refers to an oscillating celestial object.**
- It can be observed only every few weeks in April.
- It is **known as a quasi-satellite, meaning it orbits the sun but gets close to Earth.**
- The asteroid is **roughly the size of a Ferris wheel – between 150 and 190 feet in diameter –** and gets as close as about 9 million miles from Earth.
- Because of its small size (about 50 metres wide), this quasi-satellite has been **difficult for scientists to study, and little was known about it so far.**
- Now, a **new study** has suggested **that Kamo'oailewa was a part of the Earth's Moon.**
- It **could have broken away from the Moon due to a possible impact,** and gone on to orbit the Sun rather than the Earth-like its parent does.
- When scientists compared its spectrum with a lunar sample that was brought back to Earth during the Apollo 14 mission, they found striking similarities between the two.
- **Another possibility is** that Kamo'oailewa was **captured in its Earth-like orbit from the general population of Near Earth Objects.**
- A third possibility could be that it **originated from an as-yet-undiscovered quasi-stable population of Earth's Trojan asteroids** (Trojans are a group of asteroids that share an orbit with a larger planet).
- A mission to collect Kamo'oailewa's samples has been scheduled for a launch in 2025.

6.5 Earth's first landmass emerged in Singhbhum

In news- A new study has suggested that the earliest continental landmass emerged from Jharkhand's Singhbhum region.

Key highlights of the study-

- Researchers have found sandstones in Singhbhum with geological signatures of ancient river channels, tidal plains and beaches over 3.2 billion years old, representing the earliest crust exposed to air.
- Patches of the earliest continental land, however, exist in Australia and South Africa, too.
- They have found the age by analysing the uranium and lead contents of tiny minerals and studied the granites that form the continental crust of Singhbhum region.
- According to them, these granites are 3.5 to 3.1 billion years old and formed through extensive volcanism that happened about 35-45 km deep inside the Earth and continued on-and-off for hundreds of millions of years until all the magma solidified to form a thick continental crust in the area.
- The researchers believe the earliest emergence of continents would have contributed to a proliferation of photosynthetic organisms, which would have increased oxygen levels in the atmosphere.
- This study was conducted by researchers from India, Australia and the US.

- The researchers also aim to understand the evolution of India's three other ancient continental fragments — Dharwar, Bastar and Bundelkhand regions.

Theories of landmass evolution-

- Continental Drift theory- It is the hypothesis that the Earth's continents have moved over geologic time relative to each other, thus appearing to have "drifted" across the ocean bed. It is associated with Alfred Wegener.
- Convectional Current theory- According to this theory, the intense heat generated by radioactive substances in the mantle seeks a path to escape, giving rise to the formation of convection currents in the mantle. It was proposed by Arthur Holmes in the 1930s.
- Seafloor spreading theory- This theory, introduced by Harry Hess & Robert Dietz, was proven as patterns of magnetic field polarity preserved in seafloor basalt and by age dating of the rocks.
- Polar wandering theory- This theory is similar to Continental Drift theory. It is the relative movement of the earth's crust and upper mantle with respect to the rotational poles of the earth.

6.6 White dwarf star - J0240+1952

In news- Recently, a team of astronomers have confirmed that full rotation once in 25 seconds is the fastest spinning white dwarf star J0240+1952.

About white dwarf star J0240+1952-

- The astronomers have shown that it is an extremely rare example of a magnetic propeller system.
- It is located 2,016 light-years away in the constellation of Aries.
- According to them, it is part of a binary star system; its immense gravity is pulling gaseous plasma from a nearby companion star and flinging it into space at around 3,000 kilometres per second.
- It is only the second magnetic propeller white dwarf to have been identified in over 70 years.
- It is almost 20% faster than the confirmed white dwarf with the most comparable spin rate, which completes a rotation in just over 29 seconds.
- This particular star, named LAMOST J024048.51+195226.9 — or J0240+1952 is the size of the Earth but is thought to be at least 200,000 times more massive.

What is a white dwarf star?

- White dwarf stars, so called because of the white colour of the first few that were discovered, are characterized by a **low luminosity**.
- Its **mass is comparable to that of the Sun**, while **its volume is comparable to that of Earth**.
- Because of their large mass and small dimensions, **such stars are dense and compact objects** with average densities approaching 1,000,000 times that of water.
- It is **a star that has burnt up all of its fuel and shed its outer layers**, now undergoing a process of shrinking and cooling over millions of years.
- They have medium to high mass and are the **final evolutionary state of stars whose mass is not high enough to become a neutron star**.
- The **materials in a white dwarf star can no longer undergo fusion reactions**, so the star has no source of energy.

6.7 TOI-2109b planet

In news- Recently the scientists have identified a planet which is named as TOI-2109b has the shortest orbit of any known gas giant to date.

About the new planet-

- It is an extremely hot Jupiter-like planet, which is estimated to be five times Jupiter's mass and revolves around its star in just 16 hours.
- It was discovered by scientists at NASA's Transiting Exoplanet Survey Satellite (TESS) in 2020, an MIT (Massachusetts Institute of Technology)-led mission.
- It is located in the southern portion of the Hercules constellation, which is 855 light years from Earth.
- Due to its extremely tight orbit and proximity to its star, the planet's day side is estimated to be at around 3,500 Kelvin, or close to 3227 degrees Celsius which is about as hot as a small star.
- This makes TOI-2109b, the second hottest planet detected so far.
- They also speculate that TOI-2109b is in the process of "orbital decay," or spiraling into its star.
- Considering its extremely short orbit, researchers predict that the planet may spiral toward its star faster than other hot Jupiters.

7. GOVERNANCE

7.1 Bribery Risk Matrix 2021

In news- Bribery Risk Matrix 2021 has been released by the TRACE which is an anti-bribery standard setting organisation.

About Bribery Risk Matrix-

- It measures business bribery risk in 194 countries, territories, and autonomous and semi-autonomous regions.
- It was originally published in 2014 to meet a need in the business community for more reliable and nuanced information about the risks of commercial bribery worldwide.
- **Its ranks are based on four factors —**
 - a. Business interactions with the government.
 - b. Anti-bribery deterrence and enforcement.
 - c. Government and civil service transparency.
 - d. Capacity for civil society oversight which includes the role of the media.
- Over the past 10 years, the business bribery risk environment worsened significantly in countries that also experienced democratic backsliding: Egypt, Venezuela, Turkey, Poland and Hungary.
- In 2021, North Korea, Turkmenistan, Venezuela and Eritrea pose the highest commercial bribery risk, while Denmark, Norway, Finland, Sweden and New Zealand present the lowest.
- Over the past five years, the business bribery risk environment in the United States worsened significantly when compared with global trends.
- From 2020 to 2021, all of the Gulf Cooperation Council (GCC) countries saw an increase in commercial bribery risk.

- Over the past five years, the countries that have shown the greatest trend toward improvement in the factors underlying commercial bribery risk are Uzbekistan, the Gambia, Armenia, Malaysia and Angola.

India's performance-

- In 2020, India ranked 77 with a score of 45 while in 2021, the country stood at **82nd** position with a score of 44.
- India fared better than its neighbours – Pakistan, China, Nepal and Bangladesh. Bhutan, meanwhile, secured 62nd rank.

About TRACE International-

- It is **non-profit business association founded in 2001** to provide multinational companies and their commercial intermediaries with anti-bribery compliance support.
- TRACE is financed by its members and **does not accept any government funding.**
- It leverages a shared-cost model whereby membership dues are pooled to develop anti-bribery compliance tools, services and resources.

8. HISTORY

8.1 Proposal to declare Guru Purab as 'World Pedestrian Day'

In news- Recently, Punjab Police has proposed that the birth anniversary (Gurpurab) of Sikhism founder Guru Nanak Dev be declared as 'World Pedestrian Day'.

Guru Nanak Dev as the world's most notable and revered pedestrian

- In a period of 24 years (1500-1524), Guru Nanak traveled in all directions to show the path of love, equality, humanity, and selfless service to mankind.
- Most of his **journeys were made on foot with his companion Bhai Mardana.**
- He also wanted to spread the message of oneness and to break barriers across faiths by engaging in spiritual dialogues.
- From Mecca to Haridwar, from Sylhet to Mount Kailash, Guru Nanak visited hundreds of interfaith sites related to Hinduism, Islam, Buddhism, and Jainism throughout **his journeys (also called udaasis).**
- At some sites, gurdwaras were constructed to commemorate his visit.
- Later **his travels were documented in texts called 'janamsakhis'.**
- These **sites are now spread across nine nations** as per current geographical divisions — India, Pakistan, Iran, Iraq, China (Tibet), Bangladesh, Saudi Arabia, Sri Lanka, and Afghanistan.

The recent proposal says that while beginning can be made by declaring 'National Pedestrian Day' within the country by the Union ministry, the Government of India can later take up the matter with the United Nations to get Gurpurab declared as 'World Pedestrian Day' to spread awareness on road safety.

About Guru Nanak-

- Guru Nanak ji, the **founder and first Guru of Sikhism, was born in 1469, at the village Talwandi which is located in the Punjab (present Pakistan).**

- **This village is known as Nanaka Sahib.**
- He had mastered multiple religious texts(at the age of 16) and languages including Sanskrit, Persian, and Hindi, and was writing what many believed were divinely inspired compositions.
- Accompanied by Bhai Mardana, he undertook four major spiritual journeys, running across India, South Asia, Tibet and Arabia.
- In these journeys, he preached the new concept of God as “Supreme, All powerful and Truthful, Formless (Nirankar), Fearless (Nirbhau), Without hate (Nirvair), the Sole (Ik), the Self-Existent (Saibhang), the Incomprehensible and Everlasting creator of all things (Karta Purakh), and the Eternal and Absolute Truth (Satnam)”.
- **He taught people that the ‘One’ God dwells in every one of his creations,** and that all human beings can have direct access to God without the need of any rituals or priests.
- His writings, in the form of 974 spiritual hymns comprising the Japji Sahib, Asa di Var, Bara Mah, Sidh Gosht and Dakhni Onkar were incorporated in the scripture Guru Granth Sahib by the fifth Guru Arjan Dev ji.

8.2 Akharas

In news- Recently, Mahant Ravindra Puri was elected as the new president of the Akhil Bharatiya Akhara Parishad, the highest governing body of Hindu saints and seers in the country.

History of Akharas

- The word ‘akhara’ literally means a wrestling arena, and the akhara system is believed to have been started by Adi Shankaracharya in the 8th century AD to prepare a warrior class that could fight for Hinduism against foreign invaders.
- The reason behind creating a force of monks and seers was that they would not have a family of their own, and hence would not be weakened by materialistic desires.
- Initially, there were four akharas, but their numbers increased with time.
- Currently, there are officially 13 akharas divided by their belief systems.
- The Sanyasi sampradaya has seven akharas – Juna Akhara, Avahan Akhara, Agni Akhara, Niranjani Akhara, Anand Akhara, Nirvani Akhara and Atal Akhara.
- The Vaishnava sampradaya has three akharas, namely Nirmohi Akhara, Digambar Akhara and Nirvani Ani Akhara.
- There are three akharas which worship Guru Nanak Dev – Bada Udasin Akhara, Naya Udasin Akhara and Nirmal Akhara.

About Akhil Bharatiya Akhara Parishad (ABAP)-

- It was established in 1954 with the main aim of organising and managing the Kumbh Mela.
- Being the highest body of Hindu saints and seers, the ABAP and individual akharas have influence in the society, and are generally vocal about day-to-day social issues.
- The ABAP is an independent body with its own set of rules.
- The akharas have the responsibility of leading religious and intellectual battles without using any weapon, and guiding the society.
- Another duty of the ABAP is to promote coordination between different akharas and settle disputes between them.
- All the akharas have a system of electing their president based on merit.
- For different akharas, the tenure of the president ranges from three to six years.

- The akharas do not have a minimum or maximum age limit, and there have been instances where children have been appointed mahant based on their merit.
- Election of the Akhara Parishad president, on the other hand, takes place by voting among all the 13 akharas.

Adi Shankaracharya-

- He was an Indian philosopher and theologian whose works had a strong impact on the doctrine of Advaita Vedanta.
- Shankara was born in Kaladi, Kerala.
- His works in Sanskrit discuss the unity of the Atman and Nirguna Brahman "brahman without attributes".
- His works elaborate on ideas found in the Upanishads.
- Shankara's publications criticised the ritually-oriented Mimamsa school of Hinduism.
- Shankara's Advaita shows similarities with Mahayana Buddhism, despite his critiques and Hindu Vaishnavist opponents have even accused Shankara of being a "crypto-Buddhist".
- He is also believed to be the organiser of the Dashanami monastic order and unified the Shanmata tradition of worship.
- He founded four mathas, which are believed to have helped in the historical development, revival and propagation of Advaita

8.3 Sant Tukaram and Sant Jnaneshwar

In news- Prime Minister has laid the foundation stone for four laning of five sections of Shri Sant Dnyaneshwar Maharaj Palkhi Marg (NH-965) and three sections of Shri Sant Tukaram Maharaj Palkhi Marg (NH-965G).

About Sant Jnaneshwar/Dnyaneshwar-

- He was a 13th century Marathi saint, poet, philosopher and a yogi of the Nath sect.
- He authored Dnyaneshwari, which is a commentary on the Bhagavad Gita, and Amrutanubhav.
- These are the oldest surviving literary works in the Marathi language, under the patronage of the Yadava dynasty of Devagiri, and these are considered to be milestones in Marathi literature.
- He used to give a discourse on Dnyaneshwari to select audiences.
- It is believed that Sacchidanand Baba wrote Dnyaneshwari during such discourses by Dnyaneshwar. This is also known as Bhavartha Deepika.
- Shortly after the completion of Bhavartha Deepika, Dnyandeo joined the varkari movement probably under the influence of Namdeo and virtually became their leader.
- Dnyaneshwar learned and mastered philosophy and various techniques of kundalini yoga, which is considered as the specialty of the Nath cult, from Nivrutti.
- Sant Dnyaneshwar's ideas reflect the non-dualistic Advaita Vedanta philosophy and an emphasis on Yoga and oneness of Vishnu and Shiva.
- His legacy inspired saint-poets such as Eknath and Tukaram.

About Sant Tukaram-

- He was a 17th-century Marathi poet and Hindu sant (saint), popularly known as Tuka, Tuko Baraya, Tukoba, born in Maharashtra.
- He was a Sant of Varkari sampradaya and was part of the egalitarian, personalized Varkari devotionalism tradition.

- He is best known for his devotional poetry called Abhanga and community-oriented worship with spiritual songs known as kirtans (or group songs).
- Abhanga poetry is a Marathi genre of literature which is metrical (traditionally the ovi meter), simple, direct, and it fuses folk stories with deeper spiritual themes.
- Abhanga sung in praise of the Hindu god Vitthal, also known as Vithoba.
- His guru was bhakti movement Saint Chaitanya Mahaprabhu.
- In his work of Abhangas, Tukaram repeatedly refers to four other persons who had a primary influence on his spiritual development, namely the earlier Bhakti Saints Namdev, Dnyaneshwar, Kabir and Eknath.
- Tukaram Gatha is a Marathi language compilation of his works, likely composed between 1632 and 1650.

8.4 Onake Obavva

In news- The Karnataka government has decided to celebrate 'Onake Obavva Jayanti(birth anniversary)' on November 11 throughout the state every year.

A brief note on Obavva

- She was a woman warrior who fought the forces of Hyder Ali single-handedly with a pestle ('onake' in Kannada) in Chitradurga, Karnataka in the 18th century.
- She was the wife of soldier Kahale Mudda Hanuma, who was the guard of the fort.
- She showed presence of mind and took on the forces when her husband was away from his post.
- She died fighting the 'creeping soldiers' of Hyder Ali and protecting the fort of Chitradurga with her 'Onake' and this then gave her the name 'Onake Obavva'.
- After Obavva's attack on Hyder Ali's soldiers, her husband went up to the fort and blew his horn to alert the army about the invaders.
- Madakari Nayaka's soldiers rushed and killed everyone in Hyder Ali's small troop.
- The hole through which Hyder Ali's soldiers entered is called 'Onake Obavvana Kindi' (kindi means hole in Kannada) and has become a tourist spot along with the Chitradurga Fort.
- In the state of Karnataka, she is celebrated along with Abbakka Rani, Keladi Chennamma and Kittur Chennamma, as the foremost women warriors and patriots.
- In 2018, the Chitradurga police started 'Obavva Pade', a squad of women police constables to protect and educate women about the Protection of Children from Sexual Offences (POSCO) Act.

Madakari Nayaka of Chitradurga-

- Nayakas of Chitradurga ruled parts of eastern Karnataka during the post-Vijayanagara period.
- During the rule of Hoysala Empire and Vijayanagara Empire, they served as a feudatory chiefdom.
- Madakari Nayaka V was a brave soldier and a shrewd administrator as well.
- He allied himself with Haider Ali of the Mysore Kingdom at times and at other times with the Marathas.
- It was during his time that Haider Ali attacked the Chitradurga Fort leading to the heroics of "Onake Obavva".

8.5 Janjatiya Gaurav Divas

In news- Recently, the Government of India declared 15th November as Janjatiya Gaurav Divas dedicated to the memory of brave tribal freedom fighters.

About Janjatiya Gaurav Divas-

- It was declared as a part of the year-long celebration of 75 years of India's independence.
- It aims to make the coming generations know about the sacrifices made by tribal freedom fighters for the country.
- It marks the **birth anniversary of iconic tribal leader Birsa Munda**.
- The day will be celebrated every year and would recognize the efforts of the tribals for preservation of cultural heritage and promotion of Indian values of valour, hospitality and national pride.
- As part of this, tribal **Freedom Fighter Museum at Ranchi** where Birsa Munda breathed his last was inaugurated by Hon'ble Prime Minister.

About Birsa Munda-

- He was born on November 15, 1875, in Ulihatu village in present-day Jharkhand and belonged to the Munda tribe in the Chota Nagpur Plateau area.
- He received his early education at Salga under the guidance of his teacher Jaipal Nag.
- During his time, the British raj introduced a feudal Zamindari system in the Chhota Nagpur region, destroying the tribal "Khunt katti" agrarian system.
- The Raj brought in the outsiders — moneylenders and contractors, as well as feudal landlords — who aided the British in their exploitation.
- During the 1880s, Birsa closely witnessed the Sardari Larai movement in the region, which demanded the restoration of tribal rights through non-violent methods like sending petitions to the Raj.
- The feudal setup intensified the forced labour (Veth bigari) in the forested tribal areas.
- Having gained awareness of the British colonial rule and the efforts of the missionaries to convert tribals to Christianity, Birsa started the faith of 'Birsait'.
- He impressed upon the Adivasis the importance of "sirmare firun raja jai" or "victory to the ancestral king" — thus invoking the sovereignty of the tribals' ancestral autonomous control over the land.
- He became a mass leader and began to be considered as Bhagwan and Dharati Aba by his followers.
- He declared that "abua raj setar jana, maharani raj tundu jana" (let the kingdom of the Queen end and our kingdom be established).
- The Mundas, Oraons, other Adivasis and non-Adivasis responded to his call and joined the "Ulgulan" or revolt against the colonial masters and exploitative dikus.
- He asked the people not to pay any rent, and attacked the outposts of feudal, missionary and colonial authorities.
- With traditional bows and arrows, the tribals of Central and Eastern India waged an effective armed resistance against the British.
- Soon, he was captured by British police and lodged in jail, where he died in captivity on June 9, 1900.
- Later the British brought in the Chhota Nagpur Tenancy Act of 1908 for their protection.
- This Act restricted the transfer of tribal land to non-tribals, giving Adivasis a huge relief and became landmark legislation for the protection of tribal rights.
- The British regime also took steps to abolish Veth Bigari or forced labour.

8.6 Kashi Vishwanath Corridor project

In news-The Prime Minister of India will inaugurate the Kashi Vishwanath Temple Corridor (KVTC) project on December 13 in Varanasi.

About the KVTC project

- The Rs. 400 crore projects was **launched in 2018 at Varanasi.**
- The idea is to have a **20-25 feet wide corridor from the Lalita Ghat in Varanasi to the Mandir Chowk in the temple premises** to enable at least two lakh people to be present at a given point of time.
- It seeks to **preserve existing heritage structures, provide new facilities in the temple complex in the public-private partnership mode**, ease the traffic and movement of people around the temple.
- The core aim is to ensure easy pedestrian movement for pilgrims with the least wait, travel and walking time, and comfortable holding zones, as well as crowd management and emergency operational procedures and better experiences around the religious rituals.
- The project involves building multiple amenities for pilgrims such as Yatri Suvidha Kendras, guesthouses, hospice, library, and museum.

About Kashi Vishwanath temple-

- It is one of the most famous Hindu temples dedicated to Lord Shiva, located in Vishwanath Gali of Varanasi, Uttar Pradesh.
- The Temple stands on the western bank of the holy river Ganga.
- It is **one of the twelve Jyotirlingas**, the holiest of Shiva Temples.
- As the city was called Kashi in ancient times, the temple is popularly called Kashi Vishwanath Temple.
- It had been demolished by many Muslim rulers including Qutb-ud-din Aibak (as a commander of Mohammad Ghori), Hussain Shah Aharqi or Sikandar Lodhi.
- Last time it was demolished by Aurangzeb in 1669, the sixth Mughal emperor who constructed the Gyanvapi Mosque on its site.
- The **current structure was built on an adjacent site by the Maratha ruler, Ahilya Bai Holkar (Malhar Rao's daughter-in-law) of Indore in the year 1780.**
- In 1828, Baiza Bai, widow of the Maratha ruler Daulat Rao Scindhia of Gwalior State, built a low-roofed colonnade with over 40 pillars in the GyanVapi precinct.

Architectural features

- It is built in **Nagara style** of architecture.
- The linga of the main deity at the shrine is 60 cm tall and 90 cm in circumference housed in a silver altar.
- The venerable Jyotirlinga is a dark brown coloured stone.
- The main temple is a quadrangle and is surrounded by shrines of other gods.
- There are small temples for Kaalbhairav, Dhandapani, Avimukteshwara, Vishnu, Vinayaka, Sanishwara, Virupaksha and Virupaksh Gauri in the complex.
- There is a small well in the temple called the Jnana Vapi also spelt as Gyaan Vapi (the wisdom well).
- It has Sabha Griha or Congregation Hall leading to the inner Garbha Griha or Sanctum Sanctorum.
- Structure of the Mandir is composed of three parts - the first consists of a spire on the Mandir of Lord Vishwanath or Mahadeva, the second is a gold dome and the third is the gold spire atop Lord Vishwanath carrying a flag and a trident.

8.7 Rani Kamalapati

In news- Recently, the Indian Prime Minister inaugurated the revamped Rani Kamalapati station.

About the Rani Kamalapati railway station-

- It is India's 'most-modern' railway station located in Bhopal, Madhya Pradesh.
- It is part of the West Central Railway.
- Previously known as Habibganj, the railway station has been renamed after Gond queen Rani Kamalapati.
- The station has been redeveloped at a cost of around Rs 450 crore in the Public-Private Partnership (PPP) mode.
- Designed as a green building, this railway station has all the modern world-class amenities that also take into account ease of mobility for the physically challenged.
- It has also been revamped as a hub for integrated multi-modal transport and has been built with modern world-class features.

About Rani Kamalapati-

- She was the **widow of the 18th century Ginnorgarh's chief, Gond ruler Nizam Shah.**
- She was one of Nizam Shah's seven wives and **daughter of Chaudhari Kirpa-Ramchandra.**
- She was **well-known for her beauty and abilities and was often praised.**
- She **built the seven-storey 'Kamlapati Palace' (in 1722 Bhopal),** which presently serves as an **ASI-protected monument** and overlooks the Upper and Lower Lakes.
- This Palace is a secular architecture of the 18th century **built of Lakhauri bricks, cusped arches over crumpled pillars.**
- **She avenged her husband's death by killing Alam Shah, Nizam Shah's nephew.**
- Nizam Shah was poisoned to death by his nephew, the Raja of Chainpur-Bari, Alam Shah (also known as Chain Shah), who wanted to marry Kamlapati.
- Queen Kamlapati died of suicide by jumping into the lake in 1723.
- **The Gond community is one of the largest tribal groups in India and belongs to the GondiManda subgroup of the South Central branch** of the Dravidian language family.

8.8 Chandragupta Maurya

In news- Recently, Uttar Pradesh Chief Minister said that Chandragupta Maurya had defeated Alexander of Macedon in battle and yet, it is the latter whom historians have chosen to call "great". **In Indian history, 'great' has been used for the emperors Ashoka, Rajaraja and Rajendra Chola, and Akbar,** among others.

About Chandragupta Maurya-

- He was the founder of the Mauryan empire.
- He was born in 340 BC in Pataliputra.
- The only definite inscriptional reference to Chandragupta history is found in the Junagarh inscription from the 2nd century CE.
- He was also known to the Greeks as Sandrakottos or Sandrokottos.
- He was the first emperor to unify most of India under one administration.
- He is credited with saving the country from maladministration from the Nanda dynasty and freeing it from foreign domination.
- Expanding his empire to the borders of Persia, in 305 he defeated an invasion by Seleucus I Nicator, a Greek contender for control of Alexander's Asian empire.

- With the help of Kautilya/Chanakya, Chandragupta laid the foundations of an extensive and efficient system of centralised administration and tax-collection that formed the bases of his empire.
- Chandragupta was influenced to accept Jainism by the sage Bhadrabahu I, who predicted the onset of a 12-year famine.
- He left to spend his last days in the service of Bhadrabahu at Shravanabelagola, Karnataka, where Chandragupta fasted to death(Sallekhana).

About Alexander-

- He was **born in 356 BC at Pella in ancient Greece, and succeeded his father, king Phillip II, to the throne at the age of 20.**
- **In 327 BC, Alexander crossed the Indus, the farthest frontier of the Old Persian Empire, and began his Indian campaign that lasted about two years.**
- **In 330 BC, he defeated Darius III in the decisive battle of Gaugamela, and after a long campaign in Bactria in the region of the Amu Darya north of today's Afghanistan, he crossed the Hindu Kush and entered the Kabul valley.**
- **In the battle of Hydaspes that followed, Alexander won, but following his famous interview with Porus, he was impressed enough to return to the captive Porus his kingdom, and to leave him in charge of Punjab when the Greek army ultimately retreated.**
- **After the defeat of Porus, Alexander wished to march on into the heartland of the Gangetic basin — but upon reaching the river Beas, his generals refused to go further.**
- **The Magadha ruler during these times was Dhanananda (329-322/321 BCE) of the Nanda Dynasty, known to the Greeks as Xandrames or Agrammes.**
- **Alexander was forced to turn back and he reached Susa in Persia in 324 BC, and in the following year, died in the ancient city of Babylon, to the south of today's Baghdad.**

8.9 Rani Gaidinliu

In news- Recently, the Union Home Minister virtually laid the foundation stone for the 'Rani Gaidinliu Tribal Freedom Fighters Museum'.

About the museum project-

- It was **sanctioned by the Ministry of Tribal Affairs, Government of India in 2019** at an estimated cost of Rs 15 crore.
- The museum would **help preserve and exhibit artefacts related to the tribal freedom fighters, involved in different stages of the fight against the British colonial rule like Anglo-Manipuri War, Kuki-Rebellion, Naga-Raj movements, among others.**
- The proposed museum will be **set up in Rani Gaidinliu's birthplace, Luangkao Village in Tamenglong district.**

About Rani Gaidinliu-

- She was a Naga spiritual and political leader of the Zeliangrong Nagas who led a revolt against British rule in India.
- She was born on 26 January 1915 in Manipur.
- She was from the Rongmei Naga tribe (also known as Kabui).

- At 13, she became associated with freedom fighter and religious leader, Haipou Jadonang, and became his lieutenant in his social, religious and political movement.
- Jadonang, who was also a Rongmei, started the 'Heraka movement', based on ancestral Naga religion, and envisioned an independent Naga kingdom (or Naga-Raja).
- The movement later turned into a political movement seeking to drive out the British from Manipur and the surrounding Naga areas.
- After the execution of Jadonang, she took up the leadership of the movement, which slowly turned political from religious.
- Rani started a serious revolt against the British and was eventually imprisoned for life and was released after 14 years, in 1947.
- An advocate of the ancestral Naga religious practices, she staunchly resisted the conversion of Nagas to Christianity.
- Within the Heraka faith, she came to be considered an incarnation of the Goddess Cherachamdinliu.
- Acknowledging her role in the struggle against the British, Jawaharlal Nehru called her the "Daughter of the Hills" and gave her the title "Rani" or queen.
- She passed away on February 17, 1993.
- She was bestowed a number of honours including the Tamrapatra in 1972, Padma Bhushan in 1982, Vivekananda Sewa Summan in 1983, and Stree Shakti Puraskar in 1991.
- She posthumously was awarded the Bhagwan Birsa Munda Puraskar in 1996.
- The Government of India also issued a commemorative stamp, coins in her honour.
- The Indian Coast Guard commissioned a Fast Patrol Vessel "ICGS Rani Gaidinliu" in 2016.

8.10 Constitution Day

In news- Constitution Day was observed on 26th November 2021.

About Constitution Day-

- This day is observed to mark the significance of the constitutional values amongst the citizens of India.
- As notified by the Ministry of Social Justice and Empowerment, the observation of Constitution Day started in 2015.
- It was announced as a part of the celebration on the 125th birth anniversary of Dr BR Ambedkar.
- On 26th November 1949, the Constituent Assembly of India adopted the Constitution of India, which came into effect from 26th January 1950.

| MAJOR COMMITTEES | | MINOR COMMITTEES | | DRAFTING COMMITTEE |
|--------------------|--------------------|-------------------------|--------------------|--------------------|
| Union Powers | J L Nehru | Finance and staff | Dr.Rajendra Prasad | Dr B R Ambedkar |
| Union Const. | J L Nehru | Credentials | A K Ayyar | N Gopalaswamy |
| Provincial Const. | Sardar Patel | Business | Dr K M Munshi | Alladi K. Ayyar |
| Drafting | .BR Ambedkar | Ad hoc | Dr Rajendra Prasad | Dr. K.M. Munshi |
| Advisory | Sardar Patel | Press Gallery | Usha Nath sen | S.M.Saadullah |
| Rules of Procedure | Dr Rajendra Prasad | Finacial of union const | N R Sarkar | N.M.Rau |
| States | J L Nehru | | | TT Krishnachari |
| Steering | Dr Rajendra Prasad | | | |

- The constitution of India was made by the constituent assembly of India which was under the cabinet mission plan of 1946.
- The first meeting for this proposal was held on December 09, 1946, and Dr Sachidanand Sinha was elected as the Provisional President of the assembly.
- And on December 11, 1946, Dr Rajendra Prasad, the first president of India and was also the permanent chairman of the assembly.
- A 13 member committee along with a drafting committee was constituted to frame the constitution under the chairmanship of Dr, BR Ambedkar.
- Later, based on the committee reports, a draft was prepared by the seven-member drafting committee.
- Our constitution is the longest written constitution in the world, originally having 395 articles, 22 parts and 8 schedules in it.
- Now it has 448 articles in 25 parts and 12 schedules.
- Our constitution was not printed but handwritten and calligraphic both in Hindi and English.
- It was completely handcrafted by the artists of Shantiniketan with the guidance of Acharya Nandalal Bose and the calligraphy texts made by Prem Behari Narain Raizada in Delhi.

9. LAW AND POLICY

9.1 National Unity Day, 2021

In news- Every year, 31st October is celebrated as National Unity Day to pay tributes to veteran freedom fighter Sardar Vallabhbhai Patel.

About National Unity Day-

- To honour his contribution to India's independence and unity, the **Union Ministry of Home Affairs (MHA) in 2014 declared that National Unity Day** will be celebrated on Sardar Vallabhai Patel's birth anniversary, every year.
- On Patel's birth anniversary in 2018, Prime Minister Narendra Modi unveiled a **182m-tall statue of Sardar Vallabhbhai Patel called 'Statue of Unity'**.
- **Tallest statue in the world**, it is located on the banks of the Narmada river in Kevadia, facing the Sardar Sarovar Dam near the city of Vadodara, Gujarat.
- The day is observed to ponder upon ways to maintain the nation's unity.

About Sardar Vallabhbhai Patel-

- He was born on 31st October 1875 in Nadiad, Gujarat.
- He served as the first Deputy Prime Minister of India from 1947 to 1950.
- He was a barrister, statesman, and one of the leaders of the Indian National Congress during the struggle for Indian independence.
- In 1910, in order to enhance his career in the legal profession, Patel traveled to London and in 1913 returned to India and practiced law in Ahmedabad.
- In 1917 Patel found the course of his life changed after having been influenced by Mohandas K. Gandhi.
- In 1918, when he planned mass campaigns of peasants, farmers, and landowners of Kaira, Gujarat.
- From 1917 to 1924 he served as the first Indian municipal commissioner of Ahmedabad and was its elected municipal president from 1924 to 1928.
- In 1928 he successfully led the landowners of Bardoli in their resistance against increased taxes.

- His efficient leadership of the Bardoli campaign earned him the title Sardar ("leader"), and henceforth he was acknowledged as a nationalist leader throughout India.
- In March 1931, he presided over the Karachi session of the Indian National Congress.
- During 1932 to 1933, he was lodged with Gandhi in Yerwada Jail.
- His contribution was notable during the integration of the princely states and the India-Pakistan War of 1947.
- He was also instrumental in the creation of the All India Services which he described as the country's "Steel Frame".

9.2 'Knock every door' campaign

In news- The Union Health Minister launched the 'Knock every door' campaign to boost second-dose vaccination recently.

About the campaign-

- The "Har Ghar Dastak" (Knock Every Door) campaign is scheduled to start soon in districts with low vaccination rates to enthuse and motivate people towards getting their jab.
- **The goal is to cover the entire adult population with at least one dose of COVID-19 vaccine by the end of November.**
- As part of the campaign, the Ministry has urged the States to make regional and local-level plans with all the stakeholders to reduce the number of people with vaccination overdue.
- As of October 31st, in India, 10.38 Crore people are due to get their second dose of vaccine from 17 states.
- **Bihar, Jharkhand, West Bengal, and Uttar Pradesh are the states under focus** because of low vaccination rate.
- More than 1.6 crore people are from Uttar Pradesh, 1.1 Crore from Madhya Pradesh, 76 lakhs in Maharashtra, 86 lakhs in Rajasthan, 60 lakhs in Tamil Nadu and 72 lakhs in Bihar are due for their second doses.
- Central government has set-up a cut-off of 77% coverage for the first dose while 33% cut off for the second dose.

9.3 Bhasha Sangam initiative

In news- Recently, the Union Education minister launched the Bhasha Sangam initiative for schools, Bhasha Sangam Mobile App and Ek Bharat Shreshtha Bharat Mobile Quiz to commemorate Rashtriya Ekta Diwas.

About Bhasha Sangam-

- Bhasha Sangam is an initiative of the Ministry of Education under Ek Bharat Shreshtha Bharat, to teach basic sentences of everyday usage in 22 Indian languages under VIII schedule of the Constitution of India.
- The idea is that people should acquire basic conversational skills in an Indian language other than their mother tongue.
- One of its objectives is to enhance linguistic tolerance and respect, and promote national integration.
- It is aimed that at least 75 lakh people should acquire this skill during the Azadi Ka Amrit Mahotsav period.
- **Initiatives launched under Bhasha Sangam are:**
 1. **An initiative for school children** that is being made available on DIKSHA, ePathshala and through 22 booklets.

2. **Bhasha Sangam Mobile App** developed in collaboration with myGov, **by a start-up called Multibhashi**.
3. **A Mobile App based quiz** with over 10,000 questions on states of India **developed by Nazara Technologies** through the Innovation Cell of Ministry of Education.

Bhasha Sangam Initiative for schools-

- Developed **by NCERT**.
- 100 sentences in 22 scheduled languages are presented in such a way that children in school will be able to read in the Indian language, in Devanagari script, in roman script and translations into Hindi and English.
- 100 sentences are presented in audio and video form with Indian Sign Language.
- Under this learners in school will be able to get acquainted with all the languages-their scripts, pronunciation.

Bhasha Sangam Mobile App(on Android & iOS)-

- This is an **initiative of DoHE, in collaboration with MyGov**.
- The App has been **developed by a start-up Multibhashi**, selected by myGov through a competition.
- The App initially has 100 sentences of every day usage in 22 Indian languages.
- These sentences are available in both Roman script and in the script of the given language, and also in audio format.
- A learner will pass through stages on the basis of testing. There is also a detailed testing in the end with generation of digital certificates.

EBSB Quiz App-

- EBSB Quiz game is **targeted toward children and youngsters** of Bharat for **helping them learn more about our different regions, states, culture, national Heroes**, monuments, traditions, tourist locations, languages, geography, history, topography,
- The game play is simple – Play Quizzes, Learn & Achieve Grades and has 15 different levels of toughness.
- Currently, EBSB quiz is available on android OS, iOS version.
- This game is currently available in English and Hindi.
- In the next 3 months EBSB quiz will be also available in 12 other different regional languages.

9.4 Vanniyars

In news- Recently, the High Court of Madras has quashed the 10.5 per cent special internal reservation provided by the Tamil Nadu government to Vanniyars, a most backward caste (MBC).

Key updates-

- Tamil Nadu BC commission had recommended 10.5 per cent reservation for vanniyakula Kshastriya community, after door to door enumeration.
- The state Government had **split the aggregate 20 per cent reservation for MBCs and Denotified Communities in 2012 into three separate categories** by regrouping castes and provided a **ten per cent plus sub-quota for Vanniyars**, formerly known as Vanniakula Kshatriyas.

- The Madras High Court ruled that **identifying one caste as a separate group for creating an exclusive quota, without any quantifiable data** on its backwardness relative to others, amounted to giving reservation solely on the basis of caste and, therefore, **impermissible under the Constitution**.
- Further, it noted that the remaining 115 castes under the 'MBC and Denotified Communities' category were forced to share the remaining 9.5% (in two groups with 2.5% and 7%, respectively) of what used to be a 20% MBC/DNC quota and **this amounted to discrimination**.

About Vanniyars-

- They are found in the northern part of the Indian state of Tamil Nadu.
- **Vanniyakula kshatriya community includes** vanniyar, vanniya, vannia gounder, gounder, padayachi, palli and agnikula kshatriya.
- **28% population in Tamil Nadu and 65% population in Pondicherry** belong to Vannia Kula Kshatriyar caste.
- **Famous titles that Vannia uses are** Padayatchi, Gounder, Reddiar, Kander, Palli, Naicker, Nayaka, Adiyaman and others.
- They **organised state-wide agitations in the mid-1980s demanding an exclusive 20 per cent reservation** in the state and 20 per cent in central services.

History of reservation in Tamil Nadu-

- Tamil Nadu had 25 percent reservation for OBCs and 16 percent for SCs and STs in 1951.
- It was the first **M Karunanidhi government that increased OBC reservation to 30 percent and SC, ST reservation to 18 percent** in 1971.
- Later, an exclusive 20 per cent reservation was carved out for MBCs in 1989.
- The **current reservation breakup of the state comprises 69 percent** – which includes 30 per cent for BCs (including Christians and Muslims), 20 per cent for MBCs, 18 per cent for SCs and 1 per cent for the ST community.

9.5 Police Complaints Authorities

In news- Recently, the National Human Rights Commission (NHRC) asked the Union government and state governments to set up Police Complaints Authorities as per the **Supreme Court judgment in Prakash Singh vs. Union of India, 2006**.

Key recommendations of NHRC-

- The NHRC's core advisory group has said that there is an immediate need to set up PCAs at the State/UT and district level.
- The **status of compliance should be displayed** on the websites of the Ministry and the State Home Departments.
- The MHA and the Law Ministry should consider implementing the recommendations of the **113th report of the Law Commission to add Section 114 B to the Indian Evidence Act**.
- This would ensure that in case a person sustains injuries in police custody, it is presumed that the injuries were inflicted by the police and the burden of proof to explain the injury lies on the authority concerned.
- The core group also recommended making the **legal framework technology-friendly** to speed up the criminal justice system.

- The Supreme Court's December 2020 order to **instal CCTV cameras with night vision in all police stations should be "implemented immediately"** to ensure accountability.
- The **trained social workers and law students should be involved with police stations as part of community policing** and incorporating community policing in police manuals, laws and advisories.

What is the Police Complaint Authority (PCA)?

- It is a body that **adjudicates allegations of improper or shoddy investigations, refusal to file FIRs**, custodial torture grievous hurt, rape or death in police custody.
- It makes recommendations to the government for taking disciplinary action against erring police officers.
- In India, **seventeen states have established the PCAs through State Police Acts**, while ten states have done this through executive orders.

Law commission of India-

- It is an executive body established by an order of the Government of India.
- Its major function is to work for legal reform.
- Its membership primarily comprises legal experts, who are entrusted with a mandate by the Government.

Section 114B of the Indian Evidence Act-

- It was originally passed in India by the Imperial Legislative Council in 1872, during the British Raj.
- It contains a set of rules and allied issues governing admissibility of evidence in the Indian courts of law.
- The law is mainly based upon the work of Sir James Fitzjames Stephen.

9.6 Khasi Inheritance of Property Bill, 2021

In news- Recently, the Khasi Hills Autonomous District Council (KHADC), in Meghalaya announced that it would introduce the 'Khasi Inheritance of Property Bill, 2021.

Key features of the bill-

- It is aimed at "equitable distribution" of parental property among siblings (both male & female) in the Khasi community.
- Another provision would let parents decide who they want to will their property to.
- It prevents a sibling from getting parental property if they marry a non-Khasi and accept the spouse's customs and culture.
- If implemented, the proposed Bill would modify an age-old customary practice of inheritance of the matrilineal Khasi tribe.

Matrilineal system-

- Both lineage and descent are traced through the mother's clan.
- It means children take the mother's surname, the husband moves into his wife's house, and the youngest daughter (khatduh) of the family is bequeathed the full share of the ancestral or the clan's property.
- It applies only to ancestral or clan/community property, which has been with the family for years.
- On the other hand, self-acquired property can be distributed equally among siblings.

- If a couple does not have any daughters, then the property goes to the wife's elder sister, and her daughters.
- If the wife does not have sisters, then the clan usually takes over the property.
- The three tribes of Meghalaya — Khasis, Jaintias, and Garos practise a matrilineal system of inheritance.

The Khasi Hills Autonomous District Council (KHADC)-

- KHADC is a body under the Sixth Schedule of the Constitution.
- It does not have the power to legislate.
- The 6th Schedule of the Constitution provides for the administration of tribal areas in Assam, Meghalaya, Tripura and Mizoram to safeguard the rights of the tribal population in these states.
- Paragraph 12 A of the Sixth Schedule gives the final right of passing a law to the state legislature.

9.7 All India Judicial Services (AIJS)

In news- Government of India is planning to give a fresh push to the establishment of an All India Judicial Service (AIJS) on the lines of the central civil services.

Proposed All India Judicial Service (AIJS)-

- The AIJS is a reform push to centralise the recruitment of judges at the level of additional district judges and district judges for all states.
- In the way that the Union Public Service Commission conducts a central recruitment process and assigns successful candidates to cadres, judges of the lower judiciary are proposed to be recruited centrally and assigned to states.

History of AIJS & Judicial reforms-

- The idea of a centralised judicial service was first mooted in the Law Commission's 1958 'Report on Reforms on Judicial Administration'.
- The idea was to ensure an efficient subordinate judiciary, to address structural issues such as varying pay and remuneration across states, to fill vacancies faster, and to ensure standard training across states.
- A statutory or constitutional body such as the UPSC to conduct a standard, centralised exam to recruit and train judges was discussed.
- The chief justices' conferences in 1961, 1963 and 1965 favoured creation of an AIJS.
- The provision of AIJS was included in Article 312 of the Constitution through the 42nd amendment in 1976.
- In 2006, the Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice in its 15th Report backed the idea of a pan-Indian judicial service, and also prepared a draft Bill.

Judiciary's view on the AIJS-

- In All India Judges' Assn. (1) v. Union of India case of 1991, the Supreme Court directed the Centre to set up an AIJS.
- In a 1993 review of the judgment, however, the court left the Centre at liberty to take the initiative on the issue.
- In 2017, the Supreme Court took suo motu cognizance of the issue of appointment of district judges, and mooted a "Central Selection Mechanism".

- Senior advocate Arvind Datar, who was appointed amicus curiae by the court, circulated a concept note to all states in which he recommended conducting a common examination instead of separate state exams.
- Based on the merit list, High Courts would then hold interviews and appoint judges.

Current process of recruiting judges-

- **Articles 233 and 234 of the Constitution of India deal with the appointment of district judges**, and place it in the **domain of the states**.
- The **selection process is conducted by the State Public Service Commissions** and the **concerned High Court**, since High Courts exercise jurisdiction over the subordinate judiciary in the state.
- **Panels of High Court judges interview candidates** after the exam and select them for appointment.
- All judges of the lower judiciary up to the level of district judge are selected through the **Provincial Civil Services (Judicial) exam** which is commonly referred to as the judicial services exam.

9.8 National Sports Awards 2021

In news- The Ministry of Youth Affairs & Sports announced the National Sports Awards 2021.

About the National Sports Awards-

- They are given by the President of India every year to recognize and reward excellence in sports.
- National Sports Awards include several awards in it. They are:

Major Dhyan Chand Khel Ratna Award'(1991-92)

- Formerly known as the Rajiv Gandhi Khel Ratna, it is given for the spectacular and most outstanding performance in the field of sports by a sportsperson over a period of previous four years.
- It is the **highest award** which comprises a medallion, a certificate, and a cash prize of Rs 25 lakh.

Arjuna Award (1961)

- It is given for outstanding performance in Sports and Games over a period of previous four years and showing qualities of leadership, sportsmanship and a sense of discipline.
- The award carries a cash prize of Rs 15 lakh, a bronze statue of Arjuna and a scroll of honour.

Dronacharya Award(1985)

- It is given for outstanding coaches and for their meritorious work on a consistent basis and enabling sportspersons to excel in International events.
- The award carries a cash prize of Rs 15 lakh, a bronze statue of Dronacharya and a scroll of honour.

Dhyan Chand Award for Lifetime achievement in Sports and Games (2002)

- It is given to honour sportspersons who have contributed to sports by their performance and continue to contribute to promotion of sports events after their retirement.
- It carries a cash prize of Rs 10 lakh, a certificate and a ceremonial dress.

Rashtriya Khel Protsahan Puruskar(2009)

- It is given to corporate entities (both in private and public sector), sports control boards, NGOs including sports bodies at the State and National level who have played a visible role in the area of sports promotion and development.

Maulana Abul Kalam Azad (MAKA) Trophy (1956-57)

- It is given to the overall top performing university in inter-university tournaments.
- **It was received by Panjab University - Chandigarh.**

9.9 Padma awards for the year 2020

In news- The President of India presented the Padma awards for the year 2020 -2021.

Key updates-

- For the year 2020, the list comprises seven Padma Vibhushans, 10 Padma Bhushans and 102 Padma Shri awards.
- Of the total awardees, 29 were women and one was transgender, while 16 were posthumous awardees.

History and relevance-

- The Government of India instituted two civilian awards-Bharat Ratna & Padma Vibhushan in 1954.
- The latter had three classes namely Pahela Varg, Dusra Varg and Tisra Varg.
- These were subsequently renamed as Padma Vibhushan, Padma Bhushan and Padma Shri vide Presidential Notification issued on January 8, 1955.

About Padma awards-

- The Padma Awards are one of the highest civilian honours of India announced annually on the eve of Republic Day.
- **The Awards are given in three categories:**
 - a. Padma Vibhushan (for exceptional and distinguished service).
 - b. Padma Bhushan (distinguished service of higher order) and
 - c. Padma Shri (distinguished service).
- The award seeks to recognize achievements in all fields of activities or disciplines where an element of public service is involved.
- It was instituted in 1954.
- These awards are announced every year on the occasion of Republic Day except for brief interruption(s) during the years 1978 and 1979 and 1993 to 1997.
- All persons without distinction of race, occupation, position or sex are eligible for these awards.
- **However, Government servants including those working with PSUs, except doctors and scientists, are not eligible for these Awards.**
- Though the award is normally not conferred posthumously, in highly deserving cases, the Government could consider such a recommendation.
- A higher category of Padma award can be conferred on a person only where a period of at least five years has elapsed since conferment of the earlier Padma award.

- However, in highly deserving cases, a relaxation can be made by the Awards Committee.
- The awards are **presented by the President of India usually in the month of March/April every year** where the awardees are presented a Sanad (certificate) signed by the President and a medallion.
- **The names of the awardees are published in the Gazette of India** on the day of the presentation ceremony.
- The total number of awards to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) **should not be more than 120**.
- The award does not amount to a title and cannot be used as a suffix or prefix to the awardees' name.
- The Padma Awards are **conferred on the recommendations made by the Padma Awards Committee**, Which is constituted by the Prime Minister every year.
- **The Committee is headed by the Cabinet Secretary** and includes Home Secretary, Secretary to the President and four to six eminent persons as members.
- The recommendations of the committee are submitted to the Prime Minister and the President of India for approval.

About Bharat Ratna-

- It is the highest civilian award of the country.
- It is awarded in recognition of exceptional service/performance of the highest order in any field of human endeavour.
- It is treated on a different footing from Padma Award.
- The recommendations for Bharat Ratna are made by the Prime Minister to the President of India.
- No formal recommendations for Bharat Ratna are necessary.
- **The number of Bharat Ratna Awards is restricted to a maximum of three in a particular year.**
- Government has conferred Bharat Ratna Award on 45 persons till date.

9.10 Global Drug policy index, 2021

In news- A first of its kind global drug policy index 2021 has been released recently.

About the index

- The index measures and compares national-level drug policies, providing each country with a score and ranking that shows how much their drug policies and their implementation align with the UN principles of human rights, health and development.
- It is a data-driven global analysis of drug policies and their implementation.
- **It is a project of the Harm Reduction Consortium**, which was established in 2013.
- It is **composed of 75 indicators** running across **five broad dimensions** of drug policy: criminal justice, extreme responses, health and harm reduction, access to internationally controlled medicines, and development.
- It highlights that the global dominance of drug policies based on repression and punishment has led to low scores overall, with a median score of just 48 out of 100 for all 30 countries which is assessed as a “drug policy failure” and a sign for urgent measures to deal with the situation.
- **Top 5 countries** are Norway, New Zealand, Portugal, UK, Australia.
- **Bottom 5 countries** are Brazil, Uganda, Indonesia, Kenya and Mexico.
- Reflecting a long-standing global trend towards the abolition of the death penalty, the report highlights that only **three out of these 30 countries - India, Indonesia and Thailand retain capital punishment** for certain drug offences.

India's performance-

- **India's rank is 18** out of 30 countries.
- India has an overall score of 46/100.
- On the criteria of use of extreme sentencing and responses, it has a score of 63/100.
- On health and harm reduction, 49/100; on proportionality of criminal justice response, 38/100; on availability and access of internationally controlled substances for the relief of pain and suffering, 33 /100.

9.11 Nutrition smart villages

In news- As part of the 75th year of Independence of India a programme on “Nutrition Smart Village” will be initiated to strengthen the Poshan Abhiyan.

About the initiative

- It **aims to reach out to 75 villages across India** through the network of All India Coordinated Research Project on Women in Agriculture (AICRP-WIA).
- A total of **75 villages will be adopted by AICRP centres and ICAR-Central Institute for Women in Agriculture (ICAR-CIWA)**, for which the **AICRP centres will adopt 5 villages** each with the remaining to be adopted by ICAR-CIWA with an aim to develop 75 Nutri-Smart villages.
- **The objectives of the initiative are:**
 - Promoting nutritional awareness.
 - Education and behavioural change in rural areas involving farm women and school children.
 - Harnessing traditional knowledge through the local recipe to overcome malnutrition and
 - Implementing nutrition-sensitive agriculture through homestead agriculture and Nutri-garden.
- To achieve the goal of Malnutrition free villages, intensive awareness campaigns and field activities will be undertaken focusing on the concept of Nutri-village / Nutri-food / Nutri-diet/ Nutri-thali etc. for strengthening the Poshan Abhiyan.
- Awareness among the women farmers will also be created about their legal rights in all walks of life.
- The products/tools/technologies developed by AICRP centres will be evaluated through multi-location trials.

ICAR-Central Institute for Women in Agriculture (ICAR-CIWA)-

- It is an institution first of its kind in India that is exclusively devoted to gender related research in agriculture.
- It was established as National Research Centre for Women in Agriculture (NRCWA) in April 1996 at Bhubaneswar (Odisha) under Indian Council of Agricultural Research, New Delhi.
- It was set up based on the recommendation of the Working Group on Agricultural Research and Education, constituted by the Planning Commission for the formulation of the 8th Five Year Plan (1992-97).
- It was renamed as “ICAR-Central Institute for Women in Agriculture” (ICAR-CIWA) in the year 2014.
- The institute has been undertaking research on various issues affecting women’s role and participation and the emerging opportunities in agriculture.
- It focuses on participatory action research in different technology-based thematic areas involving farm women to make farm technologies suitable for them.
- It also takes up activities to catalyze and facilitate research and development institutions to bring farm women perspective in their research and development programmes.

9.12 Mineral Conservation and Development (Amendment) Rules, 2021

In news- Recently, the Ministry of Mines has notified the Mineral Conservation and Development (Amendment) Rules, 2021 to **amend the Mineral Conservation and Development Rules [MCDR], 2017.**

The highlights of amendments-

- Rules prescribed that all plans and sections related to mine shall be prepared by combination of **Digital Global Positioning System (DGPS) or Total Station or by drone survey** in relation to certain or all leases as may be **specified by Indian Bureau of Mines (IBM).**
- New Rule inserted to **provide for submission of digital images of mining areas by lessees** and Letter of Intent holders.
- **Lessees having annual excavation plan of 1 million tonne or more or having leased area of 50 hectare or more** are required to submit drone survey images of leased area and up to 100 meters outside the lease boundary every year.
- Other lessees submit high resolution satellite images.
- Requirement of **submitting satellite images obtained from CARTOSAT-2 satellite LISS-IV sensor** on the scale of cadastral map deleted in view of the insertion of provision for submission of **high resolution Georeferenced Ortho-rectified Multispectral satellite** and use of drone survey as per Rule 34A.
- Provision of **daily return omitted to reduce compliance burden.**
- Power of taking action against incomplete or wrong or false information in monthly or annual returns given to IBM, in addition to State Govt.
- The amendment **allowed engagement of a part-time mining engineer or a part-time geologist for category 'A' mines** having leased area below 25 hectares.
- The **diploma in mining and mine surveying granted by duly recognized institute** along with a second class certificate of competency issued by the Director General of Mines Safety **is added in qualification for full time Mining Engineer.**
- **Penalty provisions in the rules have been rationalized.** Previously, the rules provided for penalty of imprisonment upto 2 years or fine upto 5 lakh rupees or both for violation of each and every rule irrespective of the severity of the violation.
- **Amendment in the rules categorized the violations of the rules under the following major heads:**
 - Major Violations: Penalty of imprisonment, fine or both.
 - Minor Violations: Penalty reduced. Penalty of only fine for such violations prescribed.
 - **Violation of other rules has been decriminalized.** These rules did not cast any significant obligation on the concession holder or any other person. Thus, violation of 24 rules has been decriminalized.
- **Amount of financial assurance increased to five lakh rupees for Category 'A' mines** and three lakh rupees for Category 'B' mines from existing three and two lakh rupees, respectively.

9.13 National Achievement Survey (NAS)

In news- National Achievement Survey (NAS) was held on 12th November, 2021 across the country.

About the survey-

- The Government of India has been implementing a rolling programme of sample based National Achievement Survey (NAS) **aimed at classes III, V, VIII and X with a cycle period of three years.**
- NAS is undertaken by the Department of School Education and Literacy, Ministry of Education, Government of India.

- It is the **largest, nationwide, sample-based education survey conducted across India.**
- **It will help to assess the learning interruptions and new learnings during the COVID pandemic and help to take remedial measures.**
- The instrument development, testing, finalization of the test items, sampling of the schools etc. has been done by NCERT.
- However, the **actual administration of the test in the sampled schools will be done by CBSE** in collaboration with the respective states/UTs.
- **NAS 2021 will cover the entire spectrum of schools i.e. Government Schools (Central Government and State Government), Government Aided Schools and Private schools across the country.**
- It is expected that nearly 1.23 lakh schools and 38 lakh students in 733 districts across 36 States and UTs will be covered in the NAS 2021.
- **It will be conducted in** Language, Mathematics & EVS for class 3 & 5; Language, Mathematics, Science & Social Science for class 8 and Language, Mathematics, Science, Social Science and English for class 10.
- **The Test would be conducted in 22 mediums of instruction covering** Assamese, Bengali, English, Gujarati, Hindi, Kannada, Malayalam, Manipuri, Marathi, Mizo, Odia, Punjabi, Tamil, Telugu, Urdu, Bodo, Garo, Khasi, Konkani, Nepali, Bhutia, and Lepcha.
- **A National Steering Committee** has been constituted for conduct of NAS **headed by Chairman, CBSE.**
- **The last NAS was held in November 2017** for assessing the competencies developed by the children at the grade levels III, V and VIII.
- Though it was scheduled to take place in 2020, due to the Covid-19 situation, it was postponed until this year.

9.14 National Education Day, 2021

In news- Every year since 2008, November 11 is celebrated as the National Education Day **to mark the birth anniversary of India's first Education Minister Maulana Abul Kalam Ghulam Muhiyuddin.**

About Maulana Abul Kalam-

- Abul Kalam Ghulam Muhiyuddin known as Maulana Abul Kalam Azad born in Mecca, Saudi Arabia in 1888.
- He was a journalist, freedom fighter, politician, and educationist.
- He was the **first education minister of independent India** and served from 1947 to 1958 in Pandit Jawaharlal Nehru's cabinet.
- Azad pursued traditional Islamic education.
- **He started a weekly journal in Urdu called Al-Hilal in 1912** to increase the revolutionary recruits amongst the Muslims.
- This **journal played an important role in forging Hindu-Muslim unity.**
- The government regarded Al- Hilal as a propagator of secessionist views and **banned it in 1914.**
- Maulana then started **another weekly called Al-Balagh with the same mission** of propagating Indian nationalism and revolutionary ideas based on **Hindu-Muslim unity.**
- **In 1916, the government banned this paper too and expelled Maulana Azad from Calcutta and exiled him to Bihar** from where he was released after the First World War 1920.
- He was one of the **founding members of the Jamia Milia Islamia University**, originally established at Aligarh in the United Provinces, India in 1920.
- He **supported the Non-Cooperation Movement** started by Gandhiji and **entered the Indian National Congress in 1920.**
- He was elected as the **president of the special session of the Congress in Delhi (1923)** and at an age of 35, he became the **youngest person to serve as the President of the Indian National Congress.**

- He was **arrested in 1930** for violation of the salt laws as part of Gandhi's Salt Satyagraha.
- After his release, he again **became the president of Congress in 1940 (Ramgarh) and remained in the post till 1946.**
- Azad strongly advocated for women's education.
- Though he stressed on the English language, **he believed that primary education should be imparted in the mother-tongue.**
- **The first IIT, IISc, School of Planning and Architecture and the University Grants Commission** were established under his tenure as the education minister.
- The most prominent cultural, literary academies were also built including the Sangeet Natak Academy, Lalit Kala Academy, Sahitya Academy as well as the Indian Council for Cultural Relations.
- He was **posthumously honoured with India's highest civilian award - Bharat Ratna in 1992.**

9.15 Safai Mitra Suraksha Challenge (SSC)

In news- As part of the 'World toilet Day', the Ministry of Housing and Urban Development has launched a week long awareness campaign on Safai Mitra Suraksha Challenge (SSC) recently.

About Safai Mitra Suraksha Challenge (SSC)-

- The awareness campaign on SSC was held from November 14th to 20th November 2021 to run up to the 'Swachh Amrit Diwas'.
- **Swachh Amrit Diwas is an award ceremony to recognize the role and efforts of the states, cities, ULBs and Cantonment Board in Swachh Survekshan 2021, and Garbage Free Star Rating certification on 20th November, 2021.**
- A total of 246 cities participated in SSC which was conducted across the country.
- Through **this challenge it is aimed to encourage cities to mechanise their sewer and septic tank cleaning operations** in order to prevent deaths and fatalities of sanitation workers from 'hazardous entry'.
- **MoHUA had launched SSC on the occasion of World Toilet Day (19th November 2020) with the objective of eradicating the practice of hazardous cleaning of sewers and septic tanks and promote mechanized cleaning of the same.**
- As per the timelines for the Challenge it was launched with a toolkit on 19th November 2020 and the preparatory period for it was from 20th Nov 2020 to 30th Sep 2021 and the evaluation was done in October 2021.
- **Under SSC, National Safai Karamcharis Finance & Development Corporation (NSKFDC), Ministry of Social Justice and Empowerment, supported by MoHUA are organizing Loan Melas** across the country to help Safaimitras avail loans **under the Swachhata Udyami Yojana (SUY)** for procurement of sewer/ septic tank cleaning machine/ equipment for mechanized cleaning.
- **Skill Development Trainings of Safaimitras have also been conducted** through the support of the Ministry of Social Justice and Empowerment via NSKFDC in 115 cities under SSC.
- **Under SSC, Call Centre and Helpline number for safe cleaning have been operationalized in 345 cities with '14420' helpline number** till date for safe cleaning of septic tanks/sewers & registering complaints on hazardous cleaning.

World Toilet Day-

- It is an **official United Nations international observance day on 19 November** to inspire action to tackle the global sanitation crisis and help achieve **Sustainable Development Goal 6 (SDG 6)**, which promises sanitation for all by 2030.

- The Day was **designated by the UN General Assembly on 24 July 2013 by resolution A/RES/67/291.**
- It is coordinated by UN-Water in collaboration with governments and partners.
- **The theme for World Toilet Day 2021 is “Valuing Toilets”.**

National Safai Karamcharis Finance & Development Corporation (NSKFDC)-

- It was set up for the socio economic development of Safai Karamcharis/Scavengers and their dependents through its various schemes.
- It was **incorporated on 24th January, 1997 under the Companies Act as a ‘Not for Profit’ Organization.**
- It is a **wholly owned Government Undertaking under the aegis of Ministry of Social Justice & Empowerment.**
- NSKFDC commenced its operations in October, 1997.
- **The primary objective of NSKFDC is to eradicate the terrible inhumane and evil practice of Manual Scavenging** and to strengthen socio-economic development of Safai Karamcharis/Scavengers and their dependents by providing financial assistance in the form of various Loan Schemes.
- It conducts Training Programmes for upgrading their skills through State Channelising Agencies (SCAs) nominated by State Governments/ UTs , Regional Rural Banks (RRBs) and Nationalised Banks across the Country.

9.16 First Audit Diwas

In news- The Indian Prime Minister addressed the event marking the first Audit Diwas at CAG office premises, on 16th November, 2021.

About Audit Diwas-

- Audit Diwas is **celebrated to mark the historic origins of the institution of CAG** and the contribution it has made to the governance, transparency and accountability over the past several years.
- **Under the Government of India Act 1858**, after the merging of audit departments of Bengal, Madras & Bombay presidencies, on November 16, 1860, **the first Auditor-General took charge.**

About Comptroller and Auditor General of India (CAG)-

- **Articles 149-151** of the Constitution prescribe the unique role of the CAG.
- CAG and the Indian Audit and Accounts Department (IAAD) functioning under him, constitute the Supreme Audit Institution of India.
- He is **appointed by the President of India** and shall only be removed from office in like manner and on like grounds as a Judge of the Supreme Court.
- He **makes before the President an oath or affirmation** according to the form set out for the purpose in the Third Schedule.
- The **salary and other conditions** of service of the Comptroller and Auditor-General shall be such as may be **determined by Parliament** by law.
- He shall **not be eligible for further office** either under the Government of India or under the Government of any State after he has ceased to hold his office.
- **The accounts of the Union and of the States** shall be kept in such form as the President may, on the advice of the CAG prescribe.
- **The reports of the CAG relating to the accounts of the Union** shall be submitted to the president, who shall cause them to be laid before each House of Parliament.

- **The reports of the CAG relating to the accounts of a State** shall be submitted to the Governor of the State, who shall cause them to be laid before the Legislature of the State.
- **Currently, Shri Girish Chandra Murmu is the Comptroller and Auditor General of India.**

9.17 Annual Status of Education Report (ASER) Survey, 2021

In news- Pratham foundation has released the 16th Annual Status of Education Report (ASER) 2021 (Rural) recently.

Key highlights of the survey-

- ASER reports on the schooling status of children in the 5-16 age group across rural India and their ability to do basic reading and arithmetic tasks.
- The survey tries to find out how children in the age group of 5-16 studied at home since the onset of the pandemic and the challenges that the schools and households now face as schools reopen across states.
- As field-based surveys could not be conducted due to the Pandemic, ASER 2021 has followed the format of a phone-based survey, conducted in September-October 2021.
- ASER 2021 focused on four main areas: school enrollment patterns, incidence of tuition patterns, availability and access to smartphones, and learning materials and support for learning at home.
- According to the report, there has been an overall increase in the proportion of children enrolled in govt schools between 2018 and 2020 i.e from 64.3% to 65.8%.
- However, in the year 2021, the enrollment suddenly went up to 70.3%.
- The enrolment rate in private schools has however grown down from last year.
- In 2020, the enrolment rate was 28.8% and in 2021 the enrolment rate went down to 24.4%.
- About 73.1% school respondents have received training for implementation of COVID prevention measures in 2021.
- Even though the availability of smartphones increased from 36.5% in 2018 to 67.6% in 2021, more children in private schools had smartphones at home (79%) compared to government school going children (63.7%).
- Bihar and West Bengal showed below 60 percent smartphone penetration and Kerala and Himachal Pradesh have near universal availability of these devices in households.
- The financial distress caused by the pandemic is the reason behind the increase in govt school enrollments.

9.18 Pradhan Mantri Awaas Yojana – Gramin

In news- Pradhan Mantri Awaas Yojana(Gramin) has completed five years recently.

About Pradhan Mantri Awaas Yojana – Gramin(PMAY-G)-

- To achieve the objective of providing “Housing to All” by the year 2022, the Government of India rolled out the revamped rural housing scheme, PMAY-G which was launched on 20th November, 2016 with effect from 1st April 2016.
- The program envisages the completion of 2.95 crore PMAY-G pucca houses with all basic amenities by the year 2022.
- PMAY-G is meant for people who do not own a house and people who live in kutcha houses or houses which are severely damaged.

- At present, the minimum size of the houses to be built under the PMAY-G scheme has been increased to 25 sq. mt. from 20 sq. mt.
- **It provides assistance for construction of 2.95 crore pucca houses for eligible rural households by March, 2022 in phases:**
 - 1.00 crore houses in Phase I (2016-17 to 2018-19).
 - 1.95 crore houses in Phase II (2019-20 to 2021-22).
- It increases the unit assistance from Rs. 70,000 (IAY) to Rs. 1.20 lakh in plain areas and from Rs. 75,000(IAY) to Rs.1.30 lakh in Hilly States, NE States, difficult areas and IAP districts.
- **Provision of assistance for construction of toilets amounting to Rs. 12,000/- through SBM-G, MGNREGS** or any other dedicated source of funding and 90/95 days of unskilled wages under MGNREGS over and above the unit assistance.
- It facilitates willing beneficiaries **to avail loan from Financial Institutions for an amount of upto Rs 70,000.**
- Under the scheme, **60% of the funds are earmarked for SC/ST and 15% for minorities.**
- As far as possible, **5 % of beneficiaries are to be from persons with benchmark disabilities.**
- The grants under the scheme are shared between the Centre and States in the ratio of 90:10 in case of NE States, Himalayan States & Himalayan UTs.
- For all other States, funds are shared in the **ratio of 60:40 by the Centre and the States.** In cases of other UTs, entire funds are provided by the Centre.
- **Identification and selection of beneficiaries under PMAY-G is done from SECC, 2011 data** after due verification by Gram Sabha.
- The Ministry of Rural Development through the States / UTs **conducted a survey using Mobile Application “Awaas+”.**
- The program is being implemented and **monitored through end to end e-governance solutions, AwaasSoft and AwaasApp.**
- **The scheme uses Aadhaar Based Payment System,** which allows Direct Benefit Transfer (DBT) to the PMAY-G beneficiary in his/ her bank account linked with the Aadhaar number of the concerned beneficiary for the safe and authentic transaction.

9.19 All-India Survey on Domestic Workers

In news-The Union Minister for Labour and Employment recently launched the first ever All India Survey on Domestic workers (DWs) being **conducted by the Labour Bureau, Chandigarh.**

About the All India survey-

- This survey is aimed to estimate the number and proportion of domestic workers at National and State level, percentage distribution of domestic workers with respect to Live-in/Live-out, formal/ Informal Employment, Migrant/Non-Migrant, their wages and other socio-economic characteristics.
- This survey will cover all types of domestic services like cook, driver, housekeeping, tutor (for children), watchman, etc.
- **The main objectives are:**
 - Estimate the number/proportion of DWs at National and State level.
 - Household Estimates of Live-in/ Live-out DWs.
 - Average number of DWs engaged by different types of households.

The Domestic Worker Survey collects information on the following broad parameters-

- **Household Characteristics** such as HH size, **Religion, Social Group**, Usual Monthly Consumption Expenditure, Nature of Dwelling unit.
- **Demographic Characteristics** such as **Name, Age, Relation to Head, Marital Status**, General Education Level, Usual Principal Activity Status, Subsidiary Activity Status and Status of DWs.
- It collects **information on DWs such as their Age of entry, Social Group, Migrant status, Vocational Training/Education**, Number of HHs served by DW, activities performed by them, and number of days worked, Duration of work, Type of remuneration and its frequency, Type of contract, Distance travelled.
- It also collects **information on Engagement as DW before and after COVID-19 pandemic and its effect on wages and job**, living conditions and social security benefits received.
- **Information on Employer HHs is also collected such as their preferences of DW regarding Gender** and marital status, mode of payment of wages, number of days worked, mode of engagement, whether DW services were availed during COVID-19 pandemic, medical support given to DWs.

About Labour Bureau-

- It is a premium organization in the field of labour statistics and is engaged in the collection, compilation and publication of price indices, employment, unemployment, wages, earnings, absenteeism, labour turnover, industrial relations and working and living conditions of different segments of labour.
- **It was set up as an attached office of the Ministry of Labour & Employment on October 03, 1920.**
- The **two main wings of the Labour Bureau are at Chandigarh and Shimla** with four Regional Offices at Ahmedabad, Kanpur, Kolkata and Chennai and a Sub-Regional Office at Mumbai.
- The organisation is headed by the Director General, a Higher Administrative Grade Officer from the Indian Economic Service (IES).

Five All India Surveys conducted by Labour Bureau are-

1. All-India Survey of Migrant Workers.
2. All-India Survey on Domestic Workers.
3. All-India Survey on Employment generated in the Transport Sector.
4. All-India Survey of Employment Generated by Professionals.
5. All-India Quarterly Establishment based Employment Survey (AQEES).

9.20 Swachh Survekshan 2021



In news- Recently, the President of India felicitated the awardees of the cleanest cities of India at the 'Swachh Amrit Mahotsav' hosted as part of Swachh Bharat Mission-Urban 2.0 by the Ministry of Housing & Urban Affairs (MoHUA).

Key highlights-

- The award ceremony, organized to recognize the good work done for Swachhata by towns/ cities, States and UTs under various initiatives of the Swachh Bharat Mission (Urban), **Swachh Survekshan 2021, Safaimitra Suraksha Challenge, and certifications for Garbage Free Star rating for cities.**
- Swachh Survekshan is an annual survey of cleanliness, hygiene and sanitation in cities and towns across India.

- It was launched by MoHUA in 2016 as part of the Swachh Bharat Abhiyan, which aimed to make India clean and free of open defecation by 2nd October 2019.
- For the fifth consecutive year, Indore was awarded the title of India's Cleanest City under Swachh Survekshan, while Surat and Vijayawada bagged the second and third spots respectively in the 'more than 1 lakh population' category.
- In the population category of 'less than 1 lakh', Vita, Lonavala and Sasvad, all from Maharashtra, bagged the first, second and third positions respectively.
- Varanasi emerged as the 'Best Ganga Town' while Ahmedabad Cantonment won the title of 'India's Cleanest Cantonment', followed by Meerut Cantonment and Delhi Cantonment.

INDORE AGAIN CLEANEST CITY, NAVI MUM AT 4

| 2021 SWACHH SURVEKSHAN | | HOW MUMBAI FARED |
|--|--|--|
| <p>Cleanest Urban Municipal Bodies</p> <p>1 lakh-plus population Figures in brackets are last year's rankings</p> <ol style="list-style-type: none"> 1. Indore (1) 2. Surat (2) 3. Vijayawada (6) <li style="background-color: #f1c40f;">4. Navi Mumbai (3) 5. NDMC (5) 6. Ambikapur (4) 7. Tirupati (12) <li style="background-color: #f1c40f;">8. Pune (38) 9. Noida (40) 10. Ujjain (22) |  <p>Cleanest Cities (less than 1L popn)</p> <ol style="list-style-type: none"> 1. Vita (Maharashtra) 2. Lonavla (Maharashtra) 3. Sasvad (Maharashtra) 4. Panchgani (Maharashtra) 5. Dungarpur (Rajasthan) | <p>Mumbai 37 (35) } Ranks 1 in innovative ideas & best practices</p> <p>➤ Indore bags the top spot for the fifth year in a row</p> <p>➤ Surat stays at No. 2 for the second consecutive year</p> |
| | | <p>NAVI MUMBAI & PUNE BRIGHT SPOTS</p> <p>1 Navi Mumbai among cities with 10-40L population (Cleanest Big City)</p> <p>8 Pune in 1L+ cities, jumps 30 slots</p>  |

- In the category of 'Fastest Mover', Hoshangabad (Madhya Pradesh), with a jump of 274 ranks from 361st position in the 2020 rankings, jumped to the 87th position this year.
- In the State awards, Chhattisgarh, for the third consecutive year emerged as the 'Cleanest State' in the category of "more than 100 Urban Local Bodies" while Jharkhand, for the second time, won the Cleanest State award in the "less than 100 ULBs category".
- Among the States, Chhattisgarh and Chandigarh bagged the award for best performing State and Union Territory under the Challenge.
- Karnataka and Mizoram became the 'Fastest Mover States' in the big (more than 100 ULBs) and small (less than 100 ULBs) state category respectively.
- Maharashtra has successfully bagged a total of 92 awards, the highest by any State in this year's Survekshan, followed by Chhattisgarh with 67 awards.
- Additionally, under the Prerak Daaur Samman, a new performance category introduced under Swachh Survekshan 2021, five cities – Indore, Surat, Navi Mumbai, New Delhi Municipal Council and Tirupati were categorized as 'Divya' (Platinum).
- Indore, Navi Mumbai, Nellore and Dewas emerged as the top performers, across different population categories among 246 participating cities in the Safaimitra Suraksha Challenge, launched last year by MoHUA to eradicate human fatalities from hazardous cleaning of sewers and septic tanks.
- Under the Star Rating Protocol of Garbage Free Cities, a total of 9 cities – Indore, Surat, New Delhi Municipal Council, Navi Mumbai, Ambikapur, Mysuru, Noida, Vijayawada and Patan- have been certified as 5 star cities while 143 cities have been certified as 3 star.

- The Star Rating Protocol of Garbage Free Cities was introduced as a SMART framework by MoHUA in 2018, to holistically evaluate cities across solid waste management parameters.

9.21 Global State of Democracy Report, 2021

In news- International Institute for Democracy and Electoral Assistance (International-IDEA) has released the Global State of Democracy Report, 2021 recently.

About Global State of Democracy Report-

- **The report reviews the state of democracy around the world** over the course of 2020 and 2021, with democratic trends since 2015 used as contextual reference.
- **It is based on analysis of events that have impacted democratic governance globally** since the start of the pandemic, based on various data sources.
- **The reports refer to three main regime types:** democracies, hybrid and authoritarian regimes (Hybrid and authoritarian regimes are both classified as non-democratic).
- Democracies, at a minimum, hold competitive elections in which the opposition stands a realistic chance of accessing power.
- Hybrid regimes tend to have a somewhat more open—but still insufficient—space for civil society and the media than authoritarian regimes.
- It has said that **20 countries moved in the direction of authoritarianism**, seven countries moved towards democracy.
- The report **highlighted the case of Brazil and India** as some of the most worrying examples of backsliding.
- However, **India remained in the category of a mid-level performing democracy** as it has since 2000.
- The **United States and three members of the European Union (EU) [Hungary, Poland and Slovenia**, which holds the chair of the EU in 2021] have also **seen concerning democratic declines**.
- The **pandemic had a particularly damaging effect on non-democratic countries**, further closing their already reduced civic space.
- The **uneven global distribution of COVID-19 vaccines**, as well as anti-vaccine views, undermine the uptake of vaccination programmes and risk prolonging the health crisis and **normalising restrictions on basic freedoms**.

International Institute for Democracy and Electoral Assistance-

- It is an **inter-governmental organisation supporting democracy**.
- It has **regional offices in Europe, Latin America and the Caribbean, Asia and the Pacific and Africa and West Asia**.
- The organization is **headquartered in Stockholm, Sweden**.
- It is an **official United Nations Observer**.
- **The Founding Conference of International IDEA took place on 27–28 February 1995** and involved **14 founding states:** Australia, Barbados, Belgium, Chile, Costa Rica, Denmark, Finland, **India**, the Netherlands, Norway, Portugal, South Africa, Spain and Sweden.
- **The institute's four initial fields of activity were defined as:** The creation of a data bank and provision of information services; research; establishing and promotion of guidelines and offering advisory and capacity-building services.

9.22 Global Nutrition report, 2021

In news- The Global Nutrition Report, 2021 (GNR) has been released recently.

Key highlights of the report-

- The annual Global Nutrition Report annual report sets out progress towards global nutrition targets.
- It also evaluates the impact of poor diets on human health and the planet, assesses the nutrition financing landscape and provides a comprehensive overview of reporting on past Nutrition for Growth commitments.
- The Global Nutrition Report **was conceived following the first Nutrition for Growth Initiative Summit (N4G) in 2013** as a mechanism for tracking the commitments made by 100 stakeholders spanning governments, aid donors, civil society, the UN and businesses.
- As per the GNR, as many as 12 million people died prematurely in 2018 due to risks linked to consumption of an imbalanced and unhealthy diet.
- These risks included non-communicable diseases (NCD).
- The **increase of premature deaths due to poor diets was the highest in Africa (22 per cent), followed by Latin America and the Caribbean (8 per cent).**
- Recent estimates indicate that an **unbalanced diet has superseded tobacco smoking as the leading cause of premature deaths** in the world.
- The report says that the world is off track to meet **five out of six global maternal, infant and young children nutrition (MIYCN) targets**, on stunting, wasting, low birth weight, anaemia and childhood obesity.
- Worldwide, 149.2 million children under 5 years of age are stunted, 45.4 million are wasted and 38.9 million are overweight.
- Over 40% of all men and women (2.2 billion people) are now overweight or obese.
- In fact, no country in the world was 'on course' to achieve the target for obesity.

India's performance-

- As per the GNR, India has made no progress on anaemia.
- There has been a rise in anaemic Indian women (age group 15-49 years) since 2016. In 2016, 52.6 per cent of Indian women were anaemic. But in 2020, 53 per cent were found to be anaemic.
- India is 'on course' to meet three targets for maternal, infant and young child nutrition (MIYCN).
- India is also among 23 countries that have made no progress or are worsening on reducing 'childhood wasting'. Wasting refers to children whose weight is low-for-their height.
- Over 17 per cent of Indian children under 5 years of age are affected. This figure is much higher than the average for Asia where close to 9 percent of children are affected.
- India is 'off-course' in meeting 7 of the 13 global nutrition targets.
- These include sodium intake, raised blood pressure (both men and women), obesity (both men and women) and diabetes (both men and women).
- Some 6.2 percent of adult (aged 18 years and over) women and 3.5 percent of adult men are living with obesity in the country.
- India is among 53 countries 'on course' to meet the target for stunting. But over 34 per cent of children under 5 years of age are still affected.
- This figure is higher than average for Asia, where close to 22 per cent are affected by stunting.
- The country is also among 105 countries that are 'on course' to meet the target for 'childhood overweight' and among 53 countries 'on course' to meet the target for 'exclusive breastfeeding'.
- Some 58 percent of infants in the age group 0-5 months are exclusively breastfed in India.

- India does not have adequate data on prevalence of 'low birth weight'.

9.23 National Family Health Survey-5

In news- Recently, the Union Ministry of Health and Family Welfare released the findings of NFHS- 5 phase II.

About NFHS-5-

- **The NFHS provides estimates on key indicators** related to population, family planning, child and maternal health, nutrition, adult health, and domestic violence, among others.
- NFHS-5 was conducted in two phases between 2019 and 2021, and covered 650,000 households from 707 districts of the country.
- **The States and UTs which were surveyed in the Phase-II are** Arunachal Pradesh, Chandigarh, Chhattisgarh, Haryana, Jharkhand, Madhya Pradesh, NCT of Delhi, Odisha, Puducherry, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and Uttarakhand.
- **The main objective of successive rounds of the NFHS is** to provide reliable and comparable data relating to health and family welfare and other emerging issues.
- **International Institute for Population Sciences (IIPS), Mumbai is the nodal agency**, responsible for providing coordination and technical guidance for the survey.
- **The funding for different rounds of NFHS has been provided by** USAID, DFID, the Bill and Melinda Gates Foundation, UNICEF, UNFPA, and MOHFW, GOI.
- The all-India and State/UT level factsheet of NFHS-5 released includes information on 131 key indicators.
- It provides information on important indicators which are helpful in tracking the progress of Sustainable Development Goals (SDGs) in the country.
- **Many indicators of NFHS-5 are similar to NFHS-4 carried out in 2015-16** to make possible comparisons over time.
- However, **NFHS-5 includes some new focal areas**, such as death registration, pre-school education, expanded domains of child immunization, components of micro-nutrients to children, menstrual hygiene etc..
- **The first four editions of surveys were conducted in** 1992-93, 1998-99, 2005-06 and 2015-16.
- The findings of NFHS-5 in respect of 22 States & UTs covered in Phase-I were released in December, 2020.
- A comparison of NFHS-5 with NFHS-4 (2015-16) reveals improvement in several dimensions such as educational attainment, institutional deliveries, vaccinations, infant mortality and much more.

Key findings of NFHS-5-

The key results from India and Phase-II States/UTs NFHS-5 Factsheets areas below:

- The Total Fertility Rates (TFR), an average number of children per woman has further declined from 2.2 to 2.0 at the national level and all 14 States/UT's ranging from 1.4 in Chandigarh to 2.4 in Uttar Pradesh.
- All Phase-II States have achieved replacement level of fertility (2.1) except Madhya Pradesh, Rajasthan, Jharkhand and Uttar Pradesh.
- Overall Contraceptive Prevalence Rate (CPR) has increased substantially from 54% to 67% at all-India level and in almost all Phase-II States/UTs with an exception of Punjab.
- Use of modern methods of contraceptives has also increased in almost all States/UTs.
- Unmet needs of family Planning have witnessed a significant decline from 13 percent to 9 per cent at all-India level and in most of the Phase-II States/UTs.

- Full immunization drive among children aged 12-23 months has recorded substantial improvement from 62 per cent to 76 per cent at all-India level (fully immunization is highest (90%) for Odisha).
- This can be attributed to the flagship initiative of Mission Indradhanush launched by the government since 2015.
- There is an increase from 51 per cent to 58 percent of women receiving the recommended four or more ANC visits by health providers at all-India level.
- Institutional births have increased substantially from 79 per cent to 89 percent at all-India Level (It is 100 percent in Puducherry and Tamil Nadu).
- There has also been a substantial increase in C-section deliveries in many States/UTs especially in private health facilities.
- Child Nutrition indicators show a slight improvement at all-India level as Stunting has declined from 38 per cent to 36 per cent, wasting from 21 per cent to 19 per cent and underweight from 36 per cent to 32 percent at all-India level.
- More than half of the children and women (including pregnant women) are anemic in all the phase-II States/UTs.
- Exclusive breastfeeding to children under age 6 months has shown an improvement in all-India level from 55 percent in 2015-16 to 64 percent in 2019-21.
- India now has 1,020 women for every 1000 men. This is the first time, in any NFHS or Census, that the sex ratio is skewed in favour of women.
- Women's empowerment indicators portray considerable improvement at all India levels and across all the phase-II States/UTs.

9.24 River Cities Alliance

In news- The Union Minister of Jal Shakti in **partnership with the Ministry of Housing and Urban Affairs** has launched the River Cities Alliance recently.

About the River Cities Alliance (RCA)-

- It is the first-of-its-kind dedicated platform for river cities in India.
- It will focus on three broad themes- Networking, Capacity Building and Technical Support.
- The Secretariat of the Alliance will be set up at the National Institute for Urban Affairs (NIUA), with National Mission for Clean Ganga (NMCG) support.
- The primary objective of RCA is to provide the member cities with a platform to discuss and exchange information on aspects that are vital for sustainable management of urban rivers such as:
 - Minimizing their water footprint.
 - Reducing impacts on river and water bodies.
 - Capitalizing on natural, intangible, architectural heritage and associated services.
 - Develop self-sufficient, self-sustainable water resources through recycle, reuse strategy.
- It will work towards adopting and localizing national policies and instruments with key river-related directions, preparing their Urban River Management Plans and developing city-specific sectoral strategies that are required for sustainable urban river management.
- The Alliance gives opportunities to these cities to strengthen governance aspects for river cities and improves their liveability to attract external economic investments.
- It will also provide opportunities to access state of the art knowledge and frameworks as well as an opportunity to serve as the site for unique demonstration projects which will be implemented by NIUA and NMCG.

- The 30 member cities include Haridwar, Rishikesh, Kanpur, Ayodhya, Patna, Howrah, Ayodhya, Varanasi, Prayagraj, etc. from Ganga basin states and Aurangabad, Chennai, Hyderabad, Bhubaneswar, Pune, Udaipur, Vijayawada, etc. from non-Ganga basin states.

National Institute for Urban Affairs (NIUA)-

- It is India's leading national think tank for research, training and information dissemination in urban planning, development and management.
- It was **established in 1976 as an autonomous body under the Societies Registration Act.**
- It is headquartered in New Delhi.
- As a hub for the generation and dissemination of cutting-edge research in the urban sector, NIUA seeks to provide innovative solutions to address the challenges of a fast urbanising India, and pave the way for more inclusive and sustainable cities of the future.

9.25 National Health Accounts (NHA) Estimates for India

In news- The Ministry of Health & Family Welfare released findings of the National Health Accounts (NHA) Estimates for India for 2017-18 recently.

About NHA estimates report & key findings-

- **This is the fifth consecutive NHA report produced by National Health Systems Resource Centre (NHSRC),** designated as National Health Accounts Technical Secretariat (NHATS) in 2014 by the Union Health Ministry.
- The NHA estimates are prepared by using an accounting framework based on the internationally accepted **System of Health Accounts (SHA) 2011**, provided by the World Health Organization (WHO).
- The 2017-18 NHA estimates not only **show government expenditure** on health exhibiting an increasing trend but also **growing trust in the public health care system.**
- With the present estimate of NHA 2017-18, India has had a continuous Time Series on NHA estimates for both government and private sources for five years since 2013-14.
- The NHA estimates for 2017-18 clearly show that **there has been an increase in the share of government health expenditure** in the total GDP of the country **from 1.15% in 2013-14 to 1.35% in 2017-18.**
- Additionally, the **share of Government Health Expenditure in total health expenditure has also increased overtime. In 2017-18,** the share of government expenditure was 40.8%, which is much higher than 28.6% in 2013-14.
- The findings also show that the **Government's health expenditure as a share of total Government expenditure has increased from 3.78% to 5.12%** between 2013-14 and 2017-18, clearly indicating Government's priority for the health sector in the country.
- **In per capita terms, the government health expenditure has increased from Rs 1042 to Rs.1753** between 2013-14 to 2017-18.
- There has been an **increase in share of primary and secondary care in case of Government health expenditure.**
- In the case of the **private sector, the share of tertiary care has increased** but primary and secondary care show a declining trend.
- **The share of social security expenditure on health,** which includes the social health insurance program, Government financed health insurance schemes, and medical reimbursements made to Government employees, **has increased.**

- The **foreign aid for health has come down to 0.5%**, showcasing India's economic self-reliance.
- The **out-of-pocket expenditure (OOPE)** as a share of total health expenditure **came down to 48.8% in 2017-18 from 64.2% in 2013-14.**
- One of the factors attributing to this decline is the increased utilisation and reduction in cost of services in government health facilities.

9.26 India Young Water Professional Programme

In news- Recently, the first edition of the India Young Water Professional Programme was launched virtually.

About India Young Water Professional Programme-

- This program has **been taken up under the National Hydrology Project**, a Central Scheme of Department of Water Resources, River Development & Ganga Rejuvenation, and Ministry of Jal Shakti and **supported by the Australian Water Partnership.**
- This initiative **aims to** provide a structured platform for capacity building with strategic and long-term investment to support the water management reforms in India.
- **The objectives of the Programme are** to equip water professionals with the necessary skills, knowledge, behaviours and networks that will better enable them to contribute to the development and management of water resources in India, and to address the competency needs and priorities of the water sector in India.
- **It is focused on Engaged Training and Learning Model.**
- About 70% of the program is focused on project based learning through Situation Understanding and Improvement Projects (SUIP).
- The Program **focuses on gender equality and diversity**, because sustainable water management can only benefit from the views and skills of all members of society.
- A total of 20 participants have been selected for the first edition of this Programme (10 men and 10 women) from central and state implementing agencies of the National Hydrology Project.
- **The seeds for this Program were sowed during a co-design workshop with National Hydrology Project (NHP)** on 'Sustainable Water Management' in November 2019.
- This Program will be **implemented by Australia India Water Centre (a consortium of Australian and Indian universities).**
- Based on the success of this edition, a second phase of YWP will be planned in the later half of the year 2022.

National Hydrology Project-

- It was **started in the year 2016 as a Central Sector Scheme with 100% grant to Implementing agencies on pan India basis.**
- **The project aims at** improving the extent, reliability and accessibility of water resources information and to strengthen the capacity of targeted water resource management institutions in India.
- **Project duration is 8 years from 2016-17 to 2023-24.**
- **Project Components include** Water Resources Monitoring Systems, Water Resources Information Systems, Water Resources Operations and Planning Systems, Institutional Capacity Enhancement.

10. SCIENCE AND TECH

10.1 Autosomal DNA technique

In news- Recently, a living descendant of the famed Lakota leader Sitting Bull has been confirmed using a novel technique for analyzing fragments of the historic figure's DNA.

The familial connection of Sitting Bull-

- The autosomal **DNA technique has been used for the first time** to identify the great-grandson and closest living relative of Sitting Bull, a prominent 19th century Native American leader.
- It took the scientists 14 years to develop a technique to search for "autosomal DNA," which is **non-sex-specific DNA that people inherit from both their mother and father.**
- The researchers compared autosomal DNA from Sitting Bull's hair sample to DNA samples from LaPointe and other Lakota Sioux to establish the familial connection.
- Usually, **genealogy studies focus on sex-specific genetic matches**, such as **zeroing in on the Y chromosome**, which is passed down to male descendants, or **specific DNA in the mitochondria** that is passed from mothers to their offspring.

Sitting Bull-

- Sitting Bull, born in 1831, was chief and medicine man of the Hunkpapa Lakota Sioux.
- He united the Sioux tribes across the Great Plains in the late 19th century and led the resistance against settlers who were invading tribal lands.
- He is most famous for his victory over US General George Armstrong Custer in the Battle of the Little Bighorn river in 1876.
- He hailed from the Lakota branch of the Great Sioux Nation or Oceti Sakowin, was killed by Native American police in 1890.
- An Army doctor at the Fort Yates military base in North Dakota took a lock of Sitting Bull's hair and his wool leggings which helped this current research.

What is Autosomal DNA?

- All are born with 23 pairs of chromosomes(with few exceptions) that were passed down from parents through combinations of their 46 chromosomes.
- **X and Y, the two most popularly known chromosomes, are part of the 23rd pair of chromosomes.**
- They're also called the sex chromosomes because they determine what biological sex a person is born with.
- The rest of the 22 pairs are called autosomes also known as autosomal chromosomes.
- Hence Autosomal DNA is contained in the 22 pairs of chromosomes **not involved in determining a person's sex.**
- Autosomal DNA recombines in each generation, and new offspring **receive one set of chromosomes from each parent.**
- These are inherited exactly equally from both parents and roughly equally from grandparents to about 3x great-grandparents.

Usage of this technique-

- Autosomal DNA tests can tell us a lot about our ancestry and chances of getting certain conditions with a pretty high level of accuracy.

- This is done by finding specific variations in our genes and putting them in groups with other DNA samples that have similar variations.
- The autosomal DNA technique can be used even when very limited genetic data are available.
- The technique could also be used in forensic investigations.

10.2 ORV Sagar Nidhi

In news- Recently, the Union Minister of State (Independent Charge) Earth Sciences visited the Indian Subcontinent's Pioneer Research Vessel Ship "Sagar Nidhi".

About Sagar Nidhi-

- It is an ice-strengthened multidisciplinary vessel **operated by the National Institute of Ocean Technology, India.**
- It was built during the year 2007-08.
- The vessel is **capable of carrying out geo-scientific, meteorological and oceanographic research.**
- It is designed with **blue-water capability with ranges of up to 10,000 nautical miles (19,000 km)** for voyages lasting up to 45 days.
- **It was constructed at Fincantieri, Italy.**
- The 104-metre-long vessel has fully automatic diesel-electric propulsion equipped with a dynamic positioning system, azimuth thrusters.
- **SagarNidhi is the first Indian flagged research ship that reached the 66°S latitude [Antarctic waters],** facing 11 storms and 73 nm/hr wind speed, witnessing nature's harshest conditions.
- MoES has, at present 6 ships, SagarNidhi, SagarManjusha, SagarKanya, SagarSampada, Sagar Tara & Sagar Anveshika, which are used for many ocean studies and applications including ocean observations.

National Institute of Technology (NIOT) Chennai-

- It has the mandate to develop technologies for the sustainable harvesting living and non-living resources of the ocean.
- NIOT has successfully developed and demonstrated the technologies like Desalination Plants for drinking water in Lakshadweep Islands, extracting energy from Oceans, Restoration of Beach in Puducherry, development of Remotely Operated Underwater Vehicles (ROV) and mining machine for 5500 metre water depths.
- It has the mandate to deploy and maintain moored data buoys for the data collection that aids in the weather prediction, cyclone tracking and Tsunami Early Warning.
- Research Vessel (Ships) is an important tool for ocean research and development of ocean technology.

10.3 Molnupiravir

In news- The United Kingdom became the first country in the world to approve Merck's oral COVID-19 antiviral pill.

About the pill-

- It was jointly developed by U.S.-based Merck & Co Inc and Ridgeback Biotherapeutics.

- Britain's Medicines and Healthcare products Regulatory Agency (MHRA) recommended the drug, for use in people with mild to moderate COVID-19.
- It will be administered as soon as possible following a positive COVID-19 test and within five days of the onset of symptoms.
- The green light is the first for an oral antiviral treatment for COVID-19 and the first for a COVID-19 drug that will be administered widely in the community.
- The pill, which will be branded as Lagevrio in Britain, is designed to introduce errors into the genetic code of the coronavirus that causes COVID-19 and is taken twice a day for five days.
- In clinical trials the pill, originally developed to treat flu, cut the risk of hospitalisation or death by about half.
- Drugs in the same class as molnupiravir have been linked to birth defects in animal studies.
- It targets an enzyme that the virus uses to make copies of itself, introducing errors into its genetic code.
- It could halve the chances of dying or being hospitalised for those most at risk of developing severe COVID-19 when given early in the illness.

How does it work?

- **Molnupiravir works by introducing errors in the mechanism**, involving RNA replication, by which the virus makes copies of itself once it has infected an individual.
- **By tricking the virus into incorporating its material into copies of its RNA**, the drug causes mutations to accumulate, eventually rendering it unable to reproduce.
- By keeping virus levels low in the body, the pill is thus able to reduce the severity of the disease.

10.4 3D printing

In news- Centre of Excellence in Additive Manufacturing under the Ministry of Electronics and Information Technology has invited applications for a Grand Challenge for Most Profitable 3D printing Business(for digital toys).

About the challenge-

It is divided into **two parts**:

- The first part includes the development of a 3D printed working prototype using Fused Deposition Modelling (FDM) or Digital Light Processing (DLP) for given specifications.
- The second part involves preparation of a business case for the prototype in a given format.

3D printing is an alternative viable next-generation technology with many advantages over moulding technologies such as no recurring mould cost, better market resilience, lower capital cost per machine etc.

What is Fused Deposition Modelling (FDM)?

- FDM also known as Fused filament fabrication or called filament freeform fabrication, is a 3D printing process that uses a continuous filament of a thermoplastic material.
- It is used in 3-D printing or the design of solid models and prototypes in a layered or additive approach.

What is Digital Light Processing (DLP)?

- It is a set of chipsets based on optical micro-electro-mechanical technology that uses a digital micromirror device.

- DLP technology is common for rear projection in TVs and it is also used in front projectors for units designed for businesses and classrooms.
- It was originally developed in 1987 by Larry Hornbeck of Texas Instruments.

What is 3D printing?

- 3D printing, or **additive manufacturing**, is the construction of a three-dimensional object from a Computer-aided design (CAD) model or a digital 3D model.
- It is **'additive' in that it doesn't require a block of material or a mold to manufacture physical objects**, it simply stacks and fuses layers of material.
- 3D printing began as an idea for accelerating industrial product development through faster prototyping.
- **Chuck Hull** is typically credited with the invention of the 3D printer via his **Stereolithography Apparatus (SLA), patented in 1984.**
- One of the key advantages of 3D printing is the ability to produce very complex shapes or geometries that would be otherwise impossible to construct by hand, including hollow parts or parts with internal truss structures to reduce weight.
- 3D printing has been used in manufacturing, medical, industry and sociocultural sectors (Cultural Heritage, etc.), humanitarian and development sector to produce a range of medical items, prosthetics, spares and repairs etc..

10.5 New study on HPV vaccine

In news- Recently, a new study has found that the HPV vaccine has reduced the risk of developing cervical cancer by 62 per cent in women between the ages of 14 and 16.

A note on the new study-

- The study was funded by Cancer Research UK.
- The study looked at all cervical cancers diagnosed in England in women aged between 20 and 64 years, between January 2006 and June 2019.
- The study shows that the HPV vaccination in combination with cervical cancer screening reduces the cancer to a point where almost no one develops it.
- It also shows that over a period of 11 years (since 2006), the vaccine prevented around 450 cervical cancers and around 17,200 cases of precancerous conditions.

The human papillomavirus (HPV) vaccine-

- There are various types of HPV vaccines, including the quadrivalent vaccine (Gardasil), which protects against four types of HPV (HPV 16, 18, 6 and 11).
- All HPV vaccines protect against at least HPV types 16 and 18, which cause the greatest risk of cervical cancer.
- The latter two strains cause genital warts.
- The other kind of vaccine is the bivalent vaccine (Cervarix), which protects against HPV 16 and 18 only.
- The third type is a non valent vaccine (Gardasil 9), which protects against nine strains of HPV.
- These vaccines prevent cervical cancer in women and girls who have not yet been exposed to the virus.
- Ideally, the vaccine should be administered before the individual makes their first sexual contact.
- While for teenagers, the vaccine is administered in a two-dose regimen, for those between the ages 15-26, a three-dose regimen is used in the US.

HPV vaccination in India

- India is home to 27 percent of total cervical cancer cases globally.
- In India, **bivalent and quadrivalent HPV vaccines were licensed in 2008** and a **non valent vaccine was licensed in 2018**.
- The Indian Academy of Pediatrics Committee on Immunization (IAPCOI) recommends that HPV vaccines be **given as a two-dose regimen**, six months apart for girls below the age of 14 years.
- **For those who are 15 and older**, the vaccine is given in a **three-dose regimen**.
- There is no recommendation for HPV vaccines for boys and males in India yet.

What is human papillomavirus (HPV)?

- HPV is the most common viral infection of the reproductive tract and there are more than 100 types.
- It is **mainly transmitted through sexual contact** and most people are infected with HPV shortly after the onset of sexual activity.
- It is sexually transmitted, but **penetrative sex is not required for transmission**.
- **Skin-to-skin genital contact is a well-recognized mode of transmission**.
- More than 40 types of HPV are spread through direct sexual contact.
- **Almost all cervical cancers are caused by HPV** and the vaccine protects against two of the cancer-causing strains, which are HPV 16 and 18.
- **Once infected, most people do not develop any symptoms**, thereby are not aware that they have the virus.
- In most cases, the body's immune system will be able to clear the virus out, which means it won't do any harm to the individual.
- The infection with certain HPV types also causes a proportion of cancers of the anus, vulva, vagina, penis and oropharynx.

10.6 Homo naledi

In news- Recently, the **first ancient fossil of a Homo naledi child was found** in the Rising Star Cave, Cradle of Humankind, and South Africa.

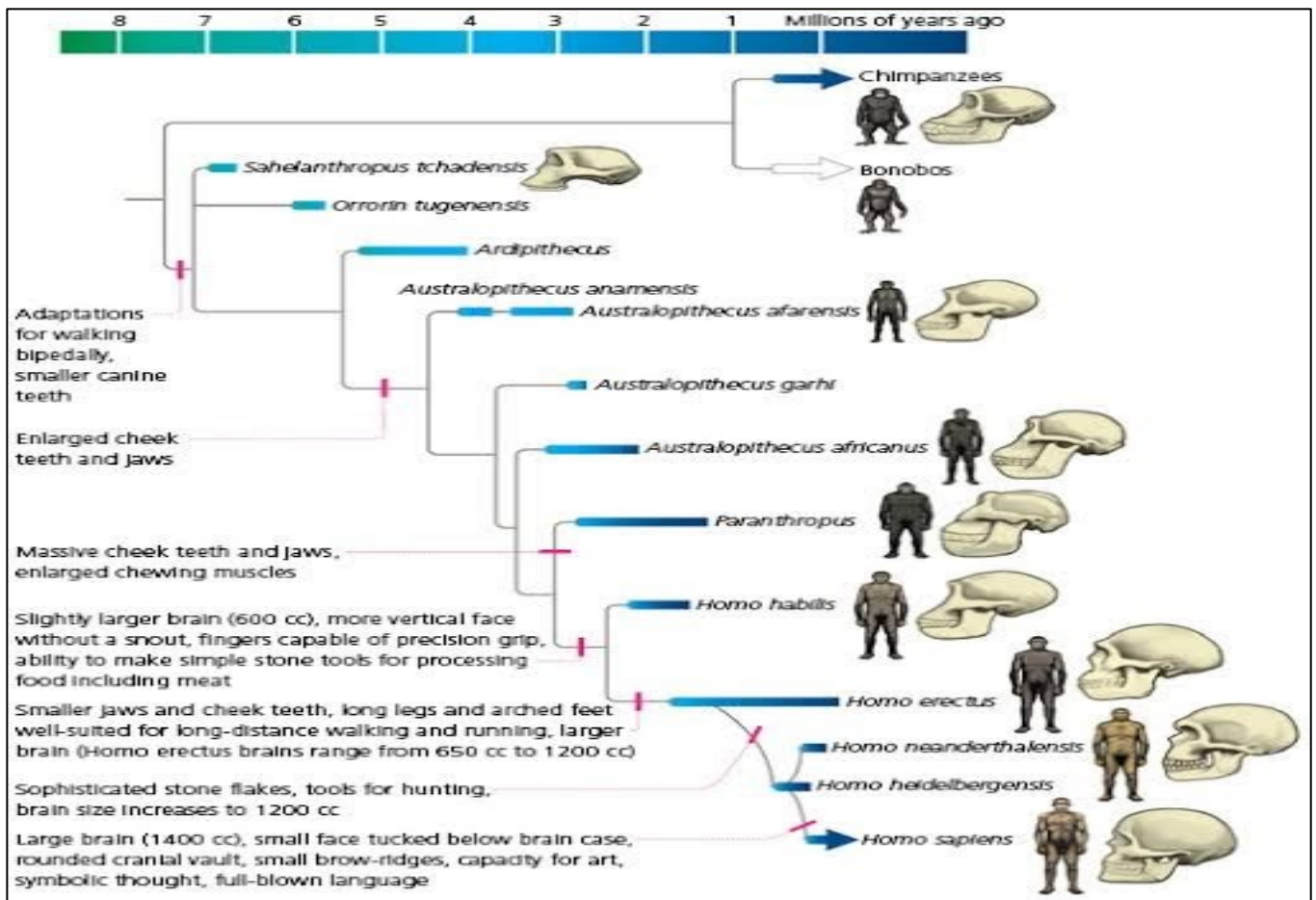
Background-

A new member was introduced to the family tree of humans in 2015. Fossil hominins from the Rising Star cave system outside Johannesburg, South Africa, were found to belong to a previously unidentified hominin species, which was then named Homo naledi.

Key findings -

- A team of researchers led by Professor Lee Berger, a palaeoanthropologist from South Africa's University of the Witwatersrand, has revealed the first partial skull of a Homo naledi child, also from the Rising Star cave.
- They have estimated that the child died almost 250,000 years ago, at the age between four and six years old.
- **The child has been named "Leti" after the Setswana word "letimela", meaning "the lost one".**
- The "Underground Astronauts" is a nickname for the group of six scientists and excavators from the original Rising Star expedition.

- The new fossil area, U.W.110, where the child's remains were recovered, is in a very small passage in the Dinaledi Chamber.
- The Dinaledi Chamber is just one in a sub-system of chambers and passages within the larger Rising Star system.
- It is 12 metres away from where researchers originally excavated adult Homo naledi fossils.



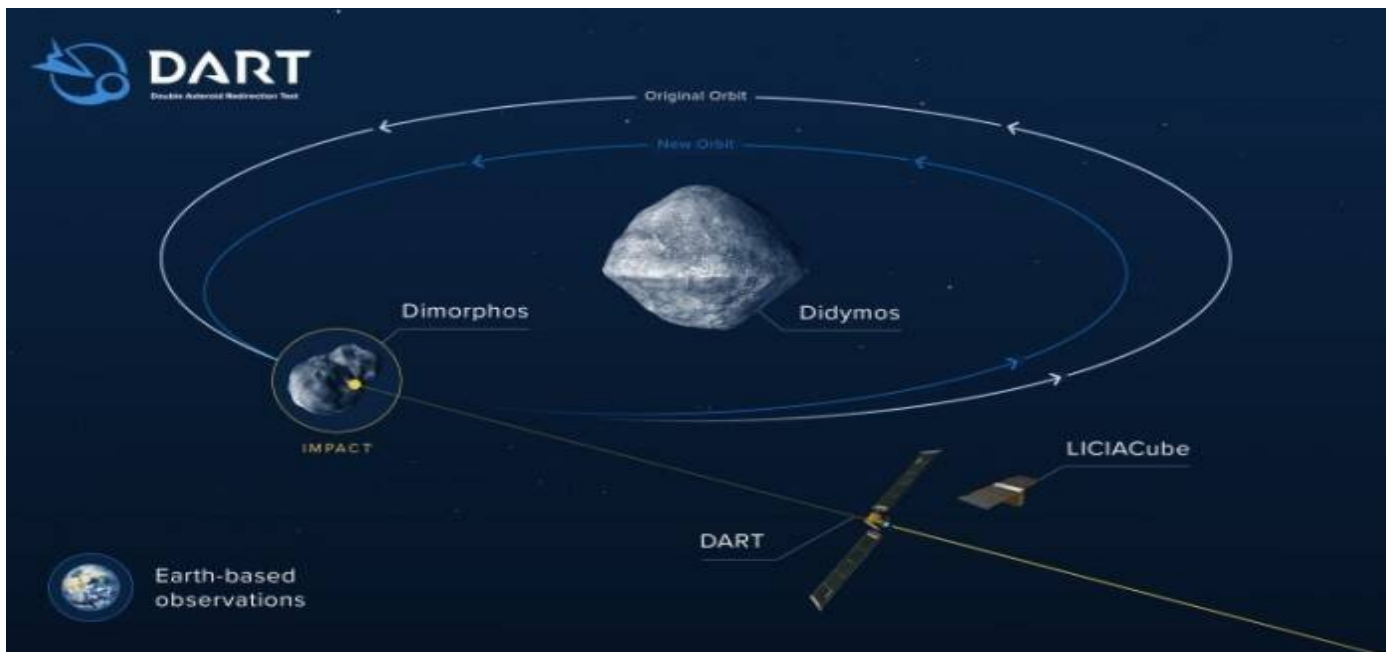
10.7 DART mission

In news- NASA recently launched its first planetary defense test mission named the Double Asteroid Redirection Test (DART).

About Double Asteroid Redirection Test (DART) mission

- DART is a planetary defense-driven test of technologies for preventing an impact of Earth by a hazardous asteroid.
- It will be the first demonstration of the kinetic impactor technique to change the motion of an asteroid in space.
- This mission is directed by NASA to the Johns Hopkins Applied Physics Laboratory (APL) with support from several NASA centers.
- The target of the spacecraft is a small moonlet called Dimorphos (Greek for "two forms").
- It is about 160-metre in diameter and the spacecraft is expected to collide when it is 11 million kilometres away from Earth.
- Dimorphos orbits a larger asteroid named Didymos (Greek for "twin") which has a diameter of 780 metres.

- The mission is to test the new technology to be prepared in case an asteroid heads towards Earth in the future.
- The spacecraft will navigate to the moonlet and intentionally collide with it at a speed of about 6.6 kilometres per second or 24,000 kilometres per hour.
- The collision is expected to take place between September 26 and October 1, 2022.



- It is believed that Didymos is a perfect system for the test mission because it is an eclipsing binary which means it has a moonlet that regularly orbits the asteroid and we can see it when it passes in front of the main asteroid.
- The timing for the DART impact is when the Didymos system is closest to the Earth.

About the spacecraft-

- **It is a low-cost spacecraft**, weighing around 610 kg at launch and 550 kg during impact.
- The main structure is a box (1.2 × 1.3 × 1.3 metres).
- **It has two solar arrays and uses hydrazine propellant for maneuvering the spacecraft.**
- It also **carries about 10 kg of xenon** which will be used to demonstrate the agency's new thrusters called NASA Evolutionary Xenon Thruster–Commercial (NEXT-C) in space.
- NEXT has very high fuel efficiency and flexible operations making it ideal for many classes of science missions.
- The spacecraft carries a **high-resolution imager called Didymos Reconnaissance and Asteroid Camera for Optical Navigation (DRACO)**.
- Images from DRACO will be sent to Earth in real-time and will help study the impact site and surface of Dimorphos.
- **DART will also carry a small satellite or CubeSat named LICIACube** (Light Italian CubeSat for Imaging of Asteroids).
- It will be deployed ten days before the impact on Dimorphos.
- **LICIACube is expected to capture images of the impact and the impact crater formed as a result of the collision.**
- Once launched, DART will deploy Roll Out Solar Arrays (ROSA) to provide the solar power needed for DART's electric propulsion system.

10.8 India International Science Festival, 2021

In news- Recently, the Union Ministry of Earth Sciences (MoES), launched the 7th edition of the India International Science Festival (IISF).

About the India International Science Festival (IISF)

- IISF is an annual event which brings together students, the public, researchers, innovators and artists from around the globe to experience the joy of doing science for the wellbeing of people and humanity.
- It is a science movement with a swadeshi spirit led by eminent scientists of the country.
- The **main purpose of IISF is the celebration of science by all.**
- IISF 2021 will be held at **Panaji, Goa from December 10 to 13, 2021.**
- **The Ministry of Earth Sciences, Ministry of S&T** and Vijnana Bharati along with the Government of Goa are the **organisers of IISF 2021.**
- **National Centre for Polar and Ocean Research (NCPOR)** of Ministry of Earth Sciences, an institution situated in Goa, is the **nodal agency** to organise the IISF 2021.
- **The theme of IISF 2021** is 'Celebrating Creativity in Science, Technology and Innovation for Prosperous India'.
- **It will have twelve programmes categorised under the following five pillars/sections:**
 1. **Freedom Struggle:** Events to remember the role of scientific community in Indian freedom movements
 2. **Ideas@75:** To discuss new science and technology (S&T) ideas for new India such as smart hospitals (city, town & village)etc.
 3. **Achievements@75:** To showcase the S&T achievements of our country in the past 75 years.
 4. **Actions@75:** To chart an S&T action plan for new India
 5. **Resolves@75:** It aimed to come up with resolutions related to S&T towards achieving Atma Nirbhar Bharat.

National Centre for Polar and Ocean Research (NCPOR)

- It was established as an autonomous Research and Development Institution of the Ministry of Earth Sciences.
- NCPOR was formerly known as the National Centre for Antarctic and Ocean Research (NCAOR) & is situated in Vasco da Gama, Goa
- It is known for its participation in global experiments, hosting of international conferences and in the leadership of international committees concerned with Antarctic science.

10.9 Norovirus

In news- Recently, several cases of Norovirus have been reported in the state of Kerala.

About Norovirus-

- It is the most common cause of gastroenteritis.
- It is a **bug similar to the diarrhoea-inducing rotavirus** and it infects people across age groups.
- Disease outbreaks typically occur aboard cruise ships, in nursing homes, dormitories, and other closed spaces.

- First outbreak was reported in Norwalk, Ohio in 1968.
- **The initial symptoms of Norovirus are vomiting and/or diarrhoea**, which show up one or two days after exposure to the virus.
- Patients also feel nauseous, and suffer from abdominal pain, fever, headaches and body aches.
- In extreme cases, loss of fluids could lead to dehydration.
- **This disease is self-limiting, the infection**, even though it takes a lot out of the patient, normally lasts only two or three days.
- It is highly **contagious**, and **can be transmitted through contaminated food, water, and surfaces**.
- The **primary route is oral-faecal**.
- One may get infected multiple times as the virus has different strains.
- **It is resistant to many disinfectants and heat up to 60°C**.
- Therefore, merely steaming food or chlorinating water does not kill the virus.
- The virus **can also survive many common hand sanitisers**.
- As per WHO estimations, **it is the most common pathogen implicated in outbreaks of gastrointestinal disease** (inflammation of the stomach and intestines).
- About one out of every five cases of acute gastroenteritis worldwide is caused by Norovirus.
- Diagnosis is done by **real-time reverse transcription polymerase chain reaction**.
- **No vaccines** are available for the disease.

10.10 Indian Antarctic program

In news- India has successfully launched the 41st Scientific Expedition to Antarctica with the arrival of the first batch of its contingent at the continent.

Key updates-

- The first batch of 23 scientists and support staff reached the Indian Antarctic station Maitri last week.
- Four more batches shall be **landing in Antarctica by air using DROMLAN facility and onboard chartered ice-class vessel MV VasiliyGolovnin by mid-January 2022**.
- The 41st expedition has two major programs.
- **The first program encompasses geological exploration of the Amery ice shelf** at Bharati station, which will help explore the link between India and Antarctica in the past.
- **The second program involves reconnaissance surveys** and preparatory work for drilling of 500 meters of ice core near Maitri. It will help in improving the understanding of Antarctic climate, westerly winds, sea-ice and greenhouse gases from a single climate archive for the past 10,000 years.
- The ice core drilling will be done in collaboration with the British Antarctic Survey and the Norwegian Polar Institute.
- In addition to accomplishing scientific programs, it will replenish the annual supplies of food, fuel, provisions, and spares for operations and maintenance of life support systems at Maitri and Bharati.
- The 41st expedition is being led by Dr. Shailendra Saini, Scientist National Centre for Polar & Ocean Research (Voyage Leader), Shri. HuidromNageshwar Singh, Metrologist, India Meteorological Department (Leader, Maitri Station) and Shri. AnoopKalayilSoman, scientist Indian Institute of Geomagnetism (Leader, Bharati Station).

About Indian Antarctic program-

- **It began in 1981** and has completed 40 scientific expeditions.

- It built three permanent research base stations in Antarctica, named **Dakshin Gangotri (1983), Maitri (1988) and Bharati (2012)**.
- Under the program, atmospheric, biological, earth, chemical, and medical sciences are studied by India.
- As of today, **Maitri and Bharati are fully operational**.
- **The National Centre for Polar and Ocean Research (NCPOR)**, Goa—an autonomous institute under the Ministry of Earth Sciences, **manages the entire Indian Antarctic program**.
- The origin of the Indian missions to the Antarctic are traced to the joint ISRO – Hydrometeorological Centre of Russia agreements, which led to Indians, such as Dr. Paramjit Singh Sehra, joining the 17th Soviet Antarctic expedition of 1971–1973.
- **India officially acceded to the Antarctic Treaty System on 1 August 1983**.
- **The primary purpose of the Antarctic Treaty** is to ensure in the interests of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord.

10.11 Autism Spectrum Disorder

In news- Recently, a team of Indian researchers have developed a compound called “6BIO” that can provide a better method to treat Autism Spectrum Disorder (ASD).

Key findings-

- This is the first compound that has been proved in pre-clinical evaluation to have the potential for improving daily activities like learning and recollecting new tasks in patients with ASD/ Intellectual disability (ID).
- The present work was led by Vijaya Verma and other authors from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), an autonomous research institute of the Department of Science & Technology (DST), Govt. of India.
- In their work, researchers have demonstrated the potential of 6BIO, to treat ASD/Intellectual disability (ID) in a preclinical mouse model called Syngap1+/-.
- 6BIO restored the neural functions not only when administered during development (equivalent of baby (1-2 years) and childhood stages (3-6 years)) but also after mid-childhood (7-11 years) when most of the brain regions are considered to have formed properly.
- Previous studies have attributed disruption in optimal brain development, mainly neuronal connections, during the early stage of development (i.e., babies/childhood) as one of the causes of ASD/ID.
- Data from the current study indicate that 6BIO can help children with ASD learn and recall, be social, and alleviate other symptoms such as seizures or sleep issues.

About Autism Spectrum Disorder (ASD)-

- ASD is a **developmental disability that is characterized by challenges with social interactions, social skills, /restricted/repetitive behaviors, speech and nonverbal communication**.
- Autism is known as a “spectrum” disorder because there is wide variation in the type and severity of symptoms people experience.
- **It occurs in all ethnic, racial, and economic groups**.
- Although ASD can be a lifelong disorder, **treatments and services can improve a person’s symptoms and ability to function**.
- There is no **appropriate pharmacological or genetic method to treat ASD/ID**.

- Current therapeutics to treat ASD aim to alleviate symptoms such as epileptic seizures or sleep issues but not to treat the multiple problems of ASD/ID.
- A major challenge in finding better therapeutics to treat ASD is the potency of the drug to help the patients to perform their daily activities with efficiency close to that of a healthy person.
- Achieving this is particularly difficult after a certain age, especially from the mid-childhood stages.

10.12 World's most sophisticated MRI facility inaugurated in Haryana

In news- Recently, the Union Minister of State (Independent Charge) Science & Technology launched **first of its kind, latest, world's most sophisticated MRI facility at the National Brain Research Centre (NBRC)**, Manesar Haryana.

About new MRI facility-

- With this facility, India embarks on new frontiers of human Neuroscience with a unique and powerful 3T MRI platform of outstanding performance.
- MRI Scanner Prisma from Siemens, Germany is being used by several international initiatives, like Brain initiative of USA, the European human brain project.
- This new facility can run intense scanning modalities very fast, which reduces the scanning time for patients by almost a quarter from earlier generation machines.
- This is being used to develop human cohort data for patients suffering from common brain and mental health disorders including Parkinson's Disease, Alzheimer's Disease, anxiety, depression, PTSD, bipolar, anxiety, depression etc.
- It can detect and quantify highly sensitive receptors and antioxidants from the brain which has a direct link with onset of various brain disorders like Alzheimer's, Parkinson's and psychiatric disorders.
- The machine is equipped to detect brain sodium levels, which has direct relevance for assessment of brain tumors non-invasively.
- Also, heavy metal deposition in the brain due to pollution or many other factors can be quantified as necessary for various psychiatric and neurodegenerative disorders.

What is Magnetic Resonance Imaging(MRI)?

- **MRI is a medical imaging technique used in radiology to form pictures of the anatomy** and the physiological processes of the body.
- **MRI scanners use strong magnetic fields, magnetic field gradients, and radio waves to generate images** of the organs in the body.
- MRI is the most frequently used imaging test of the brain and spinal cord.
- It's often performed to help diagnose: Aneurysms of cerebral vessels, disorders of the eye and inner ear.

The National Brain Research Centre (NBRC)-

- NBRC is an **autonomous institute funded by the Department of Biotechnology**, Government of India.
- Govt. of India has recognised **NBRC as an Institution of Excellence**.
- It was established in the year 1999 as an autonomous institution under the Societies Registration Act of 1860.
- The NBRC, engaged in brain research, **has deemed University status**.
- NBRC is devoted to studying brain functions in health and diseases using innovative multidisciplinary approaches in basic and translational research.

- **Research at NBRC is classified into five divisions**, namely Cellular and Molecular, Systems, Cognitive, Computational, and Translational.

10.13 Zircon hypersonic cruise missile

In news- Recently, Russia has successfully test fired a Zircon missile from a nuclear submarine.

About Zircon missile-

- It is a scramjet powered maneuvering anti-ship hypersonic cruise missile.
- It can travel more than five times the speed of sound and manoeuvre in mid-flight, making them much harder to track and intercept than traditional projectiles.
- It could hit targets at sea and on land with a range of 1,000 kilometres (620 miles).
- The Zircon looks set to join Avangard hypersonic glide vehicles that were put into service in 2019 and the air-launched Kinzhal (Dagger) missiles in Russia's arsenal.
- Russia had placed into service its first Avangard hypersonic missile in December 2019, making it the first country to claim an operable hypersonic weapon.

Hypersonic technology in India-

- India has also developed Hypersonic Technology as the DRDO successfully launched the Hypersonic Technology Demonstrator Vehicle (HSTDV) in its maiden test.
- The HSTDV was an unmanned scramjet demonstration aircraft for hypersonic speed flight.
- It could cruise at a speed of Mach 6 and move up to an altitude of 32.5 km in 20 seconds.
- According to DRDO, besides its utility for long-range cruise missiles of the future, the dual-use technology will have multiple civilian applications also.
- It can be used for launching satellites at a low cost too.

What are hypersonic missiles?

- A hypersonic missile is a **vehicle that achieves a speed five times faster than the speed of sound, crossing Mach 5.**
- These missiles **travel at a speed of around 6,115 km per hour, with a combination of technology and manoeuvrability of ballistic missiles and cruise missiles.**
- These systems are one of the more recent warfare technologies being **developed by China, North Korea, Russia and the United States.**
- They are more agile than the typical intercontinental ballistic missiles or ICBM.
- They **can travel much faster than current nuclear-capable ballistic and cruise missiles** at low altitudes, can switch direction in flight and do not follow a predictable arc like conventional missiles, making them much harder to track and intercept.

10.14 Food Corporation of India's first state of art laboratory

In news- The Minister of state for Consumer Affairs, Food & Public Distribution inaugurated **the 'Quality Control Laboratory' at Institute of Food Security (IFS), FCI, Gurugram (Haryana)** recently.

About the laboratory-

- **Food Corporation of India (FCI)** under Department of Food and Public Distribution (DFPD) **has developed** its first state-of-art laboratory for in house testing of food grain samples.
- The laboratory has been **set up under the guidance of the Central Food Technological Research Institute, Mysuru** in Karnataka.
- With this laboratory, **food grains to be issued from FCI depots under various welfare schemes of the Government of India will be checked in-house for pesticide residues, Mycotoxin, Uric acid** and fortification level of vitamins to ensure the food grain safety and nutritional security of the consumers.

Institute of Food Security-

- It is an autonomous body and civil service training institute formed by the FCI under the Ministry of Consumer Affairs, Food and Public Distribution.
- It was started in 1971 under the name, the Central Training Institute (CTI), as the controlling training centre of FCI.
- The Institute acts as a hub of information, training and research activities related to food security in India.
- It is situated in the FCI premises at Gurugram in Haryana state.

Central Food Technological Research Institute (CFTRI), Mysuru-

- It is one of the constituent laboratories under the aegis of the Council of Scientific and Industrial Research (CSIR).
- It was **established on 21 October 1950 in Mysore, Karnataka.**
- **CFTRI also has its resource centers** in Hyderabad, Lucknow and Mumbai, rendering technical assistance to numerous entrepreneurs.
- **The institute develops technologies to increase** efficiency and reduce post-harvest losses, add convenience, increase export, find new sources of food products, integrate human resources in food industries, reduce costs, and modernize.

10.15 India's first Virtual Science Lab for children

In news- Recently, the Union Minister of State (Independent Charge) Science & Technology launched India's first Virtual Science Lab for children **under CSIR Jigyasa programme.**

About the virtual lab-

- CSIR Jigyasa's Virtual lab will be an inspirational science lab where **students will read, have fun and carry out those experiments and materials** which are presented by the CSIR scientists and other stakeholders.
- The new facility will benefit **students from Kendriya Vidyalayas, Navodaya Vidyalayas and Government Schools.**
- CSIR has **partnered with IIT Bombay to develop this Virtual Lab platform.**
- **The target audience** for the Virtual Lab platform is students of the standard **VI to XII (11-18 years)** who would like to explore science using different activities, experienced researchers and faculties on the subjects of Science, Mathematics, Biology and IT.
- **Its main aim is to provide quality research exposure and innovative pedagogy for school students to drive their scientific curiosity** based on an online interactive medium with simulated experiments, pedagogy based content, videos, chat forums, animations, gaming, quiz, facility sharing, webinars etc.

- It would provide a virtual tour of CSIR laboratories and expose students to research infrastructure.
- The platform will also have the option to interact with scientists and seek their inputs or clear student's doubts and help in knowledge Upgradation for Teachers and Students.
- In order to involve other labs MoU has been signed with JawaharNavodayaVidyalayas and also with Atal Tinkering Labs of NITI AAYOG.
- Other major stakeholders for the programme are the academic based community consisting of MHRD, CSIR scientist's faculties, Ph.D. research students, school and junior college students, Sansthas, NGOs, Independent outreach faculties.

Jigyasa programme of Council of Scientific and Industrial Research (CSIR)-

- It is one of the major initiatives taken up by CSIR at national level for further **widening and deepening its Scientific Social Responsibility (SSR)**.
- It was **launched in 2017**.
- It **focuses on connecting school students and scientists** so as to extend student's classroom learning with well planned research laboratory based learning.
- It is **implemented by the CSIR in collaboration with Kendriya Vidyalaya Sangathan (KVS)**.
- Student Residential Programmes, scientists as teachers and teachers as scientists, lab specific activities/Onsite Experiments, visits of scientists to Schools/Outreach Programmes, science and maths Clubs, projects of National Children's Science Congress and tinkering laboratories are some of the activities included under the programme.

10.16 Cabotegravir and Rilpivirine

In news- Recently, the **UK's National Institute for Health and Care Excellence (NICE)** has recommended the country's first long-acting injectable treatment for HIV-1 infection in adults.

About Cabotegravir and Rilpivirine-

- Cabotegravir (also called Vocabria and made by Viiv Healthcare) with rilpivirine (also called Rekambys and made by Janssen), is recommended as an option for adults with HIV-1 infection.
- Currently treatment for HIV involves lifelong antiretroviral tablets that need to be taken every day, which keep viral loads to levels at which the infection cannot be detected and transmitted between individuals.
- Clinical trial results show that cabotegravir with rilpivirine is as effective as oral antiretrovirals at keeping the viral load low.
- Rilpivirine is from a class of drugs known as non-nucleoside reverse transcriptase inhibitors (NNRTIs).
- Cabotegravir is from a class of drugs known as integrase inhibitors.
- NICE has recommended the combination as an option for adults with HIV-1 infection in those cases when antiretroviral medicines have kept viral loads to low levels and there is no evidence of viral resistance.
- Both cabotegravir and rilpivirine are administered as 2 separate injections every 2 months, after an initial oral (tablet) lead-in period.

HIV/AIDS-

- The human immunodeficiency virus (HIV) targets the immune system and weakens people's defense against many infections and some types of cancer that people with healthy immune systems can fight off.

- As the virus destroys and impairs the function of immune cells, infected individuals gradually become immunodeficient.
- The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS), which can take many years to develop if not treated, depending on the individual.
- AIDS is defined by the development of certain cancers, infections or other severe long-term clinical manifestations.
- HIV is spread primarily by unprotected sex, contaminated blood transfusions, hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding.
- HIV disease can be managed by treatment regimens composed of a combination of three or more antiretroviral (ARV) drugs.
- Current antiretroviral therapy (ART) does not cure HIV infection but highly suppresses viral replication within a person's body and allows an individual's immune system recovery to strengthen and regain the capacity to fight off opportunistic infections and some cancers.

10.17 Advanced Electronic Warfare (EW) Suite 'Shakti'

In news- The Indian Prime Minister has handed over an advanced electronic warfare system 'Shakti' to the Indian Navy in the Jhansi city of Uttar Pradesh under the ongoing three-day 'Raksha Samarpan'.

About the Suite Shakti-

- It was designed and developed by Defence Electronics Research Laboratory (DLRL) Hyderabad, a laboratory of DRDO.
- It is meant for the Capital Warships of the Indian Navy for the interception, detection, classification, identification and jamming of conventional and modern Radars.
- It provides an electronic layer of defence against modern radars and anti-ship missiles to ensure electronic dominance and survivability in the maritime battlefield.
- This system will replace the earlier generation EW Systems of the Indian Navy.
- The system has been integrated with the wideband Electronic Support Measures (ESM) and Electronic Counter Measure (ECM) for the defence of Indian Navy Ships against missile attacks.
- The ESM of the system helps in finding accurate direction and interception of modern radars.
- First Shakti system has been installed on-board INS Visakhapatnam and is being installed on-board Indigenous Aircraft Carrier, INS Vikrant.
- Twelve Shakti Systems are under production at Bharat Electronics Ltd (BEL) supported by more than fifty MSMEs at a total cost of Rs 1805 Crores.
- These systems are scheduled to be installed on-board capital warships under production, including P-15B, P-17A and Talwar class follow-on ships.

10.18 Ocean Services, Modelling, Application, Resources and Technology (O-SMART)

In news- Recently, the Union Cabinet has given its approval for continuation of the umbrella scheme O-SMART of the Ministry of Earth Sciences, for implementation during the period from 2021-26.

About O-SMART scheme-

- The O-SMART scheme encompassing oceanographic research activities is being **implemented with the objectives for providing forecast and services based on the continuous observation of our oceans,**

development of technologies and exploratory surveys for sustainable harnessing of our oceanic resources (both living and nonliving) and promotion of front-ranking research in ocean sciences.

- **The scheme encompasses seven sub-schemes namely:**
 - a. Ocean Technology.
 - b. Ocean Modelling and Advisory Services (OMAS).
 - c. Ocean Observation Network (OON).
 - d. Ocean Non-Living Resources.
 - e. Marine Living Resources and Ecology (MLRE).
 - f. Coastal Research and Operation and Maintenance of Research Vessels.
- **These sub-schemes are being implemented by** autonomous/attached institutes of the Ministry, viz.
 - g. National Institute of Ocean Technology (NIOT), Chennai.
 - h. Indian National Center for Ocean Information Services (INCOIS), Hyderabad.
 - i. National Centre for Polar and Ocean Research (NCPOR), Goa.
 - j. Center for Marine Living Resources and Ecology (CMLRE), Kochi; and
 - k. National Centre for Coastal Research (NCCR), Chennai as well as involving other national institutes.
- **The present decade has been declared as the Decade of Ocean Science for Sustainable Development** by the United Nations (UN) and continuation of the scheme would strengthen our stand in the global oceanographic research and technology development.
- The research and technology development pertaining to oceans in India was initiated by the Department of Ocean Development (DoD), which was set up in 1981 which later merged to the Ministry of Earth Sciences (MoES) and continuing since then.

Objectives of the scheme-

- To generate and regularly update information on Marine Living Resources and their relationship with the physical environment in the Indian Exclusive Economic Zone (EEZ),
- To periodically monitor levels of sea water pollutants for health assessment of coastal waters of India, to develop shoreline change maps for assessment of coastal erosion due to natural and anthropogenic activities,
- To develop a wide range of state-of-the art ocean observation systems for acquisition of real-time data from the seas around India,
- To generate and disseminate a suite of user-oriented ocean information, advisories, warnings, data and data products for the benefit of society,
- To develop high resolution models for ocean forecast and reanalysis system,
- To develop algorithms for validation of satellite data for coastal research and to monitor changes in the coastal research,
- To develop technologies to tap the marine bio resources, to generate freshwater and energy from ocean, underwater vehicles and technologies,
- Establishment of Ballast water treatment facility,
- To support operation and maintenance of 5 Research vessels for ocean survey/monitoring/technology demonstration programmes,
- To carry out exploration of Polymetallic Nodules (MPN) from water depth of 5500 m in site of 75000 sq.km allotted to India by United Nations in Central Indian Ocean Basin, to carry out investigations of gas hydrates,
- Submission of India's claim over continental shelf extending beyond the Exclusive Economic Zone supported by scientific data, and Topographic survey of EEZ of India.

10.19 World Antimicrobial Awareness Week, 2021

In news-World Antimicrobial Awareness Week (WAAW) is celebrated from 18-24 November every year.

About World Antimicrobial Awareness Week (WAAW)-

- It aims to increase awareness of global antimicrobial resistance and to encourage best practices among the general public, health workers and policy makers to avoid the further emergence and spread of drug-resistant infections.
- **The theme for 2021** is “Spread Awareness, Stop Resistance”.
- The primary **tagline for WAAW** is ‘Antimicrobials: Handle with Care.’
- During WAAW, ‘**Go Blue**’ campaign intends to raise awareness on AMR.
- By ‘going blue’, individuals, workplaces, landmarks, and communities will help to spread awareness about antimicrobial resistance.
- **For the first time**, the concept of WAAW **was proposed in 2007 in Europe**.
- Following this resolution, the European Centre for Disease Prevention and Control (ECDC) convened meetings to explore the issue and develop a plan.
- The **European Antibiotics Awareness Day** was the name given to this project (EAAD).
- To address AMR, the World Health Organization spearheaded the development of a Global Action Plan on AMR (GAP-AMR) which was approved in 2015.
- **The goal of GAP-AMR** is to ensure, for as long as possible, continuity of successful treatment and prevention of infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way, and accessible to all who need them.
- **On 22 October 2015, WHO launched the Global Antimicrobial Resistance and Use Surveillance System (GLASS)**, the first global collaborative effort to standardize AMR surveillance.
- In April 2017, **India was amongst the first nations to have launched the National Action Plan for AMR for 2017 to 2021**.

What are antimicrobials?

Antimicrobials – including antibiotics, antivirals, antifungals and antiparasitics – are medicines used to prevent and treat infections in humans, animals and plants.

What is antimicrobial resistance (AMR)?

- It is the ability of a parasite to survive and/or multiply despite the administration and absorption of a drug given in doses equal to or higher than those usually recommended but within tolerance of the subject.
- It **occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat** and increasing the risk of disease spread, severe illness and death.
- As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat.
- **WHO has declared that AMR is one of the top 10 global public health threats facing humanity.**

10.20 SWADESH, World’s First Multimodal Brain Imaging Data and Analytics

In news- The Department of Biotechnology (DBT)-National Brain Research Centre (DBT-NBRC) have recently developed the project SWADESH.

About SWADESH-

- It is the first large-scale multimodal neuroimaging database designed specifically for the Indian population with big-data architecture and analytics for various disease categories under one platform.

- It would strengthen Alzheimer's disease (AD) research and help the scientific community come up with promising treatments.
- It proposes a big-data architecture that manages and analyzes six modules, namely
 - Neurodegenerative [AD, mild cognitive impairment (MCI), and Parkinson's disease (PD)].
 - Neuropsychiatric (schizophrenia and bipolar disorder).
 - Neurodevelopmental (autism and epilepsy).
 - COVID-19-related disorders, other disorders, and healthy subjects.
- SWADESH is supported by JAVA-based workflow environments and Python.
- Backed by a dedicated storage system, it provides quality control, data analysis reports, and data backups.
- Its development will facilitate the integration of multi-site data and collaborative research worldwide.
- Presently, SWADESH has data of 500 AD and MCI patients and 70 PD patients.
- It also includes data of 600 healthy old individuals and 800 healthy young individuals in the control group.

Clinical research tools-

DBT-NBRC has developed the following clinical research tools through SWADESH:

- GAURI system uses adaptive pattern recognition and learning schemes for predictive single or differential diagnosis, designed with MRI modalities and neuropsychological batteries.
- NINS-STAT is a high-performance state-of-the-art automated statistical test selection and execution software package with high applicability in clinical research.
- KALPANA is an integrative package for visualization, preprocessing, and quantitation of MRS data.
- PRATEEK analyzes multimodal neuroimaging data that minimizes the need for expertise in handling different neuroimaging tools for processing and analyzing multimodal data.
- Stimulus Timing Integrated Module (STIM) includes a versatile paradigm design system, presentation system, and real-time participant response-collection system for functional MRI-related purposes, mapping brain activity non-invasively in normal healthy conditions and clinical evaluation of various brain disorders.
- BHARAT is a big-data analytic model for early diagnostic biomarkers of AD. The design included a Hadoop-based big-data framework integrating MRI, MRS, and neuropsychological test scores.

About National Brain Research Centre (NBRC)-

- It is the **only institute in India dedicated to Neuroscience Research and Education.**
- The Department of Biotechnology (DBT) established NBRC to provide the state of art facilities for a coordinated multi-disciplinary team of scientists to work in the frontier areas of Neurosciences.
- The creation of NBRC was announced on 14th November 1997.
- Now, NBRC is an autonomous institute funded by the DBT and is also a Deemed-to-be University
- NBRC has been recognised as an Institution of Excellence by the Government of India.

10.21 Multisystem Inflammatory Syndrome (MIS-C)

In news- Recently, WHO has issued guidelines on the treatment of children with multisystem inflammatory syndrome associated with COVID-19 (MIS-C).

About MIS-C-

- Multisystem inflammatory syndrome (MIS) can affect children (MIS-C) and adults (MIS-A).

- **MIS-C is a rare but serious condition where children with COVID-19 develop inflammation** affecting different organs of the body, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs.
- **In children who go on to develop MIS-C, some organs and tissues become severely inflamed.**
- The cause of inflammation underlying MIS-C is not well understood.
- **Patients with MIS-C were initially reported to show features similar to Kawasaki disease**, which causes swelling (inflammation) in the walls of medium-sized arteries, particularly the coronary arteries in children.
- **However, children with MIS-C are generally older (mostly school-aged) than patients with Kawasaki disease** (mostly younger than five years of age) and presented with intestinal involvement and heart attack.
- Since there is no diagnostic test, **the conditions are defined by fever and elevated inflammatory markers in children** with current or recent SARS-CoV-2 infection or COVID exposure within four weeks before the onset of symptoms.
- **Clinical presentation for organ dysfunction includes** abdominal pain, vomiting, diarrhoea, skin rash, conjunctivitis, red cracked lips and, in severe cases, hypotension (low blood pressure) and shock.
- WHO first described this condition in May 2020, and provided a preliminary clinical definition.
- **WHO's updated guidelines recommend the use of corticosteroids in hospitalized children** (aged 0-18 years) with this condition, in addition to supportive treatment and care.

Corticosteroids are a class of steroid hormones that are produced in the adrenal cortex of vertebrates, as well as the synthetic analogues of these hormones. **There are two kinds of corticosteroids** : glucocorticoids and mineralocorticoids. They have various metabolic functions and some are used to treat inflammation.

11. SECURITY

11.1 Y 12704 (Visakhapatnam) ship

In news- Y 12704 ship has been delivered to the Indian Navy recently.

About the ship-

- It is the lead ship of Project 15B stealth guided missile destroyers.
- It was designed by the Directorate of Naval Design, Indian Navy's in-house design organisation.
- It was built by M/s Mazagon Dock Shipbuilders Ltd, Mumbai.
- The contract for four ships of Project 15B, as the Visakhapatnam class ships are known, was signed in 2011.
- The four ships are christened after major cities from all four corners of the country viz. Visakhapatnam, Mormugao, Imphal and Surat.
- It is an inheritor to Project 15 and Project 15A, which gave the Navy, respectively, the advanced Delhi and Kolkata class of destroyers.
- The keel of Visakhapatnam was laid in October 2013 and the ship was launched in April 2015.

Key features of the ship-

- The 163 metres long warship has a full load displacement of 7400 tonnes and maximum speed of 30 knots.
- The overall indigenous content of the project is approx. 75%.

- The ship is built with DMR-249A grade steel developed by the Defence Metallurgical Research Laboratory (DMRL) under the DRDO.
- It is **installed with major indigenous weapons which include** Medium Range Surface-to-Air Missiles, BrahMos Surface-to-Surface Missiles, Indigenous Torpedo Tube Launchers, Anti-Submarine Indigenous Rocket Launchers, 76mm Super Rapid Gun Mount.

11.2 PNS Tughril

In news- Recently, China has delivered its largest and most advanced warship to Pakistan.

About PNS Tughril

- It is the first hull of four Type 054 A/P frigates being constructed for the Pakistan Navy.
- The new frigate is named after “Tugrul the First,” one of the founders of the Seljuk Empire, which governed modern-day Iran, Iraq, Syria, and Turkey between the 11th and 14th centuries
- It was built and designed by China State Shipbuilding Corporation (CSSC).
- The Type 054A/P will be Pakistan Navy’s most capable warship to date.
- It is equipped with state-of-the-art combat management and an electronic warfare system along with modern self-defence capabilities.
- This frigate can simultaneously execute a number of naval warfare missions in a highly intense multi-threat environment.
- It also has advanced sensors and weapons.
- It is equipped with the SR2410C long-range and Type 517/SUR17B air-surveillance radars.
- It also carries the HQ-16 medium-range air defence missiles, which has a range of up to 50 km.
- The ship also has a vertical launching system, which means it can be armed with anti-aircraft missiles, ship and land-attack cruise missiles and anti-submarine missiles.
- The Pakistan Navy has contracted the construction of four Type 054A/P frigates from China since 2017.
- Besides the advanced naval ships, China also partners with the Pakistan Air Force to build JF-17 Thunder fighter aircraft.

11.3 Exercise Shakti, 2021

In news- The 6th Edition of the biennial training exercise “EX SHAKTI 2021” is being conducted from 15 to 26 November 2021 in Frejus, France.

About the exercise-

- It **focuses on Counter-Terrorism operations** in backdrop of semi-urban terrain under United Nations Mandate with an aim to enhance military cooperation and inter-operability between the two Armies.
- **The Gorkha Rifles Infantry Battalion is representing the Indian Army** in this bilateral exercise.
- **The French side is being represented by troops of 21st Marine Infantry Regiment** of 6th Light Armoured Brigade.
- The **Gorkha Rifles contingent's contributions in 1971 war was recognized by Battle Honour SHINGO River Valley and Theatre Honour of Jammu & Kashmir.**
- **The French Army contingent was raised in 1831** under the name of 2nd Marine Regiment and later renamed as 21st Marine Infantry Regiment in 1901.

- The Regiment specialises in amphibious warfare and has varied operational experiences in Africa, Yugoslavia, Afghanistan & Mali.
- **The last edition of Exercise SHAKTI** was conducted at Foreign Training Node in Mahajan Field Firing Ranges, Rajasthan from **31 Oct to 13 Nov 2019**.
- **India and France carry out three biennial training exercises** — Exercise Garuda with the Indian Air Force, Exercise Varuna with the Indian Navy and Exercise Shakti with Indian Army.

11.4 Operation Molten Metal

In news- Recently, the Directorate of Revenue Intelligence (DRI) arrested four foreign nationals and seized 85.535 kg gold from their possession during an intelligence operation code-named "Molten Metal."

About Operation Molten Metal-

- It was reported that four foreign nationals were found to be using sophisticated metallurgical techniques to convert the smuggled gold in the form of 'EI' laminates into bar/cylindrical form for further distribution.
- The 'EI' laminates of the transformers were found to have been made of gold-coated with nickel, essentially to hide the identity of the gold.
- DRI indicated that the gold smuggled in the form of machinery parts was being melted and moulded into bar/cylinder shapes before being disposed of in the local market.

About Directorate of Revenue Intelligence (DRI)-

- It is India's apex anti-smuggling intelligence, investigations and operations agency.
- It was started in 1957.
- It works under the Central Board of Indirect Taxes & Customs, Ministry of Finance, and Government of India.
- DRI is the major intelligence agency which enforces the prohibition of the smuggling of items including gold, diamonds, electronics, foreign currency, and counterfeit Indian currency.
- It is tasked with detecting and curbing smuggling of contraband, including drug trafficking and illicit international trade in wildlife and environmentally sensitive items, as well as combating commercial frauds related to international trade and evasion of Customs duty.

11.5 Smart policing index, 2021

In news- The Indian Police Foundation (IPF) has released the Smart Policing Index, recently.

About Smart Policing Index-

- The IPF Citizen Satisfaction Survey on SMART Policing, 2021, is a pioneering effort by the Indian Police Foundation (IPF) to gauge public perceptions about the quality of policing in India and the level of public trust in the police.
- IPF used six competency-based dimensions and three values-based dimensions of trust in the survey.
- Competence-Based Indicators include: Perception index of police sensitivity, strict and good behaviour, accessibility, responsiveness, helpful and friendly policing, technology adoption.
- Values Based Indicators include: Perception index of integrity and corruption-free services., Perception index of fair, unbiased and lawful policing, Perception index of police accountability.

- The SMART Scores were set on a scale of 1 to 10 and are indicative of the levels of citizen satisfaction, a score of 10 being the highest level of satisfaction.
- The SMART Policing idea was envisioned, articulated and introduced by Prime Minister Narendra Modi at the Conference of DGPs of State and Central Police Organizations, held at Guwahati, in 2014.
- It envisaged systemic changes to transform the Indian Police to be Strict and Sensitive, Modern and Mobile, Alert and Accountable, Reliable and Responsive, Techno-savvy and Trained (SMART).
- Levels of popular satisfaction with the quality of policing was highest in Andhra Pradesh (8.11), Telangana (8.10), Assam (7.89), Kerala (7.53), Sikkim (7.18), Mizoram (7.14) and Gujarat (7.04) in that order, with an index value of seven or above.
- Uttar Pradesh stands in 28th position in the list with a 5.81 score and Bihar stands in the last position with 5.74.
- A majority of citizens (a weighted average of 66.93%) believe that the police are doing their job well and strongly support the police.

The Indian Police Foundation (IPF)-

- It is a **multi-disciplinary think tank dedicated to work for police reform and the improvement of policing** through research, capacity building and policy advocacy.
- It is driven by a **coalition of progressive police professionals and citizen stakeholders** who believe that positive transformation in the Indian Police is possible, through collective action by the police, citizenry, the State and Central Governments as well as the political leadership.
- It is **governed by an eminent Board, whose members include serving and retired police officers, civil servants and thought leaders** from civil society, academia, media, industry and the legal profession.
- The Indian Police Foundation and Institute was **inaugurated at New Delhi by the Union Home Minister on 21st October, 2015.**

11.6 Operation Sankalp

In news- INS Trikand is currently deployed in the Persian Gulf and Gulf of Oman as part of Operation Sankalp.

About Operation Sankalp-

- It is the Indian Navy's effort to maintain a frontline ship in the region to ensure safe and secure movement of trade, instill confidence in the maritime community and contribute to regional maritime security.
- After the **attacks on merchant ships in the Gulf of Oman in June 2019, Indian Navy had commenced Maritime Security Operations, code named Op SANKALP, in the Gulf Region on 19 June 2019 to ensure safe passage of Indian Flag Vessels transiting through the Strait of Hormuz.**



- As part of this, Indian Navy warships and aircraft were deployed to establish presence, provide a sense of reassurance to the Indian merchantmen, monitor the ongoing situation and respond to any emergent crises.
- **The operation is being progressed in close coordination with all stakeholders including** the Ministry of Defence, Ministry of External Affairs, Ministry of Shipping, Ministry of Petroleum and Natural Gas and DG, Shipping.

INS Trikand-

- **It is a state-of-the-art guided missile stealth frigate.**
- Currently it is part of the Western Fleet that operates under the Flag Officer Commanding-in-Chief, Western Naval Command, based at Mumbai.
- **It is the third and final ship of the second batch of Talwar-class frigates** ordered by the Indian Navy.
- **It was built by the Yantar shipyard in Kaliningrad, Russia.**
- It was commissioned to Indian Navy service on 29 June 2013.

11.7 Gallantry Awards, 2021

In news- Recently, the President of India presented the Gallantry Awards for the year 2020 and 2021.

About Gallantry Awards-

- Gallantry Awards have been instituted by the Government of India to honour the acts of bravery and sacrifice of the officers/personnel of the Armed Forces, other lawfully constituted Forces and civilians.
- Post-independence, **first three gallantry awards namely Param Vir Chakra, Maha Vir Chakra and Vir Chakra were instituted by the Government of India** on 26th January, 1950 which were deemed to have effect from the 15th August, 1947.
- Thereafter, **other three gallantry awards** i.e. Ashoka Chakra Class-I, Ashoka Chakra Class-II and Ashoka Chakra Class-III were **instituted by the Government of India on 4th January, 1952**, which were deemed to have effect from the 15th August, 1947.
- **These awards were renamed as Ashoka Chakra, Kirti Chakra and Shaurya Chakra** respectively in January, 1967.
- These gallantry awards are **announced twice in a year - first on the occasion of the Republic Day and then on the occasion of the Independence Day.**
- **Order of precedence of these awards is** the Param Vir Chakra, the Ashoka Chakra, the Mahavir Chakra, the Kirti Chakra, the Vir Chakra and the Shaurya Chakra.

Types of Gallantry Awards-

Gallantry Awards are classified into two Categories:

1. Gallantry in the Face of Enemy.
2. Gallantry Other than in the Face of Enemy.

First Category of Gallantry Awards Comprises of the following Awards-

- **Param Vir Chakra(Bronze):**

- It shall have embossed on the obverse four replicas of "Indra's Vajra" with the State Emblem embossed in the centre.
 - On its reverse, it shall have embossed "PARAM VIR CHAKRA" both in Hindi and in English with two lotus flowers between the Hindi and the English inscriptions.
- **Mahavir Chakra(standard silver):**
 - It shall have embossed on the obverse a five-pointed heraldic star with the points of the star just touching the rim.
 - The star shall have in the centre a domed gilded State Emblem.
 - On the reverse, it shall have embossed "MAHA VIR CHAKRA" both in Hindi and in English with two lotus flowers between the Hindi and the English inscriptions.
- **Vir Chakra (standard silver):**
 - It shall have embossed on the obverse a five-pointed heraldic star with the points of the star just touching the rim.
 - The star shall have in the centre a Chakra and within the Chakra shall be a domed centre piece bearing the gilded State Emblem.
 - On the reverse, it shall have embossed "VIR CHAKRA" both in Hindi and in English with two lotus flowers between the Hindi and the English inscriptions.

Second Category of Gallantry Awards Comprises of the following Awards-

Ashok Chakra (gold gild):

- On the obverse of the medal shall be embossed a replica of Ashoka's Chakra in the centre, surrounded by a lotus wreath.
- Along the rim, on the inner side, shall be a pattern of lotus leaves, flowers and buds.
- On its reverse shall be embossed the words "Ashok Chakra" both in Hindi and English the two versions being separated by two lotus flowers.

Kirti Chakra(standard silver):

- On the obverse of the medal shall be embossed a replica of Ashoka's Chakra in the centre, surrounded by a lotus wreath.
- Along the rim, on the inner side, shall be a pattern of lotus leaves, flowers and buds.
- On its reverse shall be embossed the words "KIRTI CHAKRA" both in Hindi and English, the two versions being separated by two lotus flowers.

Shaurya Chakra (bronze):

- On the obverse of the medal shall be embossed a replica of Ashoka's Chakra in the centre, surrounded by a lotus wreath.
- Along the rim, on the inner side, shall be a pattern of lotus leaves, flowers and buds.
- On its reverse shall be embossed the words "SHAURYA CHAKRA" both in Hindi and English, the two versions being separated by two lotus flowers.

11.8 Exercise Dosti

In news- The 15th edition of the **biennial trilateral coast guard exercise 'Dosti' involving India, the Maldives and Sri Lanka** was carried out in the Maldives.

About Exercise Dosti-

- The aim of the exercise is to further fortify the friendship, enhance mutual operational capability, and exercise interoperability and to build cooperation between the coast guards of Maldives, India and Sri Lanka.
- It was initiated in 1991 between the Indian and the Maldives' coast guards.
- Sri Lanka joined the exercise for the first time in 2012.
- Year 2021 marked 30 years since the initiation of the exercise.
- Indian Coast Guard vessels, ICGS Vajra, ICGS Apoorva and, Sri Lanka Coast Guard, SLCGS Suraksha participated in it.
- Exercises carried out over the past 10 years have focused on drills on assisting with maritime accidents, eliminating sea pollution, and coast guard procedures and conduct during situations such as oil spills.

12. PEOPLE IN NEWS

12.1 Devasahayam Pillai

In news- Devasahayam Pillai, a Hindu man who converted to Christianity is set to be first non-ordained conferred sainthood by the Roman Catholic Church in early 2022.

About Devasahayam Pillai-

- He was born on April 23, 1712 in the village of Nattalam, Kanyakumari District in Tamil Nadu.
- He went on to serve in the court of Travancore's Maharaja Marthanda Varma.
- It was here that he met a Dutch naval commander, who taught him about the Catholic faith.
- In 1745, soon after he was baptised, he assumed the name "Lazarus" or "Devasahayam" in Malayalam, translated to "God is my help".
- But he then faced the wrath of the Travancore state, which was against his conversion.
- In 1752, just seven years after he became a Catholic, Devasahayam was shot dead in the Aralvaimozhy forest.
- Since then, he has widely been considered a martyr by the Catholic community in South India.
- His body is now at Saint Francis Xavier Cathedral in the Diocese of Kottar, Tamil Nadu.
- In 2004, the diocese of Kottar in Kanyakumari, along with the Tamil Nadu Bishops' Council (TNBC) and the Conference of Catholic Bishops of India (CCBI) recommended Devasahayam for beatification to the Vatican.
- He was declared blessed by the Kottar diocese in 2012, 300 years after his birth.
- In remarks that day during the midday 'Angelus' prayer in the Vatican, Pope Benedict XVI recalled Devasahayam as 'faithful layman'.
- In February 2020, he was first approved for sainthood for "enduring increasing hardships" after he decided to embrace Christianity.

12.2 Indira Gandhi Peace Prize 2021

In news- Pratham, a civil society organisation has been conferred the Indira Gandhi Prize for Peace, Disarmament and Development for 2021.

About the Indira Gandhi Prize for Peace, Disarmament and Development-

- It was instituted in the memory of the former Prime Minister Indira Gandhi by the Indira Gandhi Memorial Trust (IGMT) in 1986.
- It consists of a monetary award of Rs. 25 lakh along with a citation.
- It is given to individuals or organisations in recognition of creative efforts toward promoting international peace, development and a new international economic order; ensuring that scientific discoveries are used for the larger good of humanity, and enlarging the scope of freedom.
- A written work, in order to be eligible for consideration, should have been published.
- The selection panel consists of prominent national and international personalities including previous recipients.
- The recipients are chosen from a pool of national and international nominees.
- This year, the international jury of the prize, chaired by the former Chief Justice of India, Justice T.S. Thakur, announced the award of the Prize to the Pratham organisation.
- The 2021 Prize is awarded to Pratham for its pioneering work over more than a quarter century in seeking to ensure that every child has access to quality education, for its innovative use of digital technology to deliver education, for its programs to provide skills to young adults and for its timely response in enabling children to learn during the Covid-19 – related school closures.

About NGO Pratham-

- It was **set up in 1995 by Dr Madhav Chavan and Farida Lambay.**
- Pratham **started work in Mumbai slums, setting up community based “Balwadis” or pre-schools** and offering remedial education for students lagging behind their grade level curriculum.
- Its outreach in India has now expanded to an average of one million children directly and to five million through government partnerships annually.
- **Its Annual Status of Education Report (ASER)** serves as a model to assess education outcomes and learning deficiencies across 14 countries in three continents.

12.3 National Milk day, 2021

In news- November 26, 2021, marks the 100th birth anniversary of Dr Verghese Kurien. Every year since 2014, Kurien's birth anniversary has been observed as the National Milk Day.

About National Milk Day-

- The day seeks to promote the benefits related to the milk & milk industry and to create awareness among people about the importance of milk and milk products.
- This year the event was **jointly organised by the The Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry & Dairying with the National Dairy Development Board** and other institutions created by Dr. Kurien.
- During the ceremony, Union Minister for Animal Husbandry and Dairying **conferred National Gopal Ratna Awards to the winners of-**
 - The Best Dairy Farmer rearing indigenous cattle/buffalo breeds.
 - Best Artificial Insemination Technician and
 - Best Dairy Cooperative Society (DCS)/ Milk Producer Company/ Dairy Farmer Producer Organization in the country.

Dr Verghese Kurien- the Milk man of India-

- He was born on 26th November 1921, in Kozhikode, Kerala.
- He is known as the 'Father of White Revolution in India'.
- He pioneered the **Anand model of dairy cooperatives** and replicated it nationwide, based on various "top-down" and "bottom-up" approaches.
- Prior to the current brand name **Amul**, it was called Kaira District Cooperative Milk Producers' Union Limited.
- Under his leadership, the organization acquired equipment to process and store dairy products and proved to be a reliable supplier.
- In 1965, Kurien became the first chairman of the new National Dairy Development Board.
- He instituted **Operation Flood**, also known as the "white revolution," a long-range program with the objective of increasing milk production while both augmenting rural incomes and keeping prices within reach for consumers through the expansion of the cooperative movement.
- In addition, he established (1973) the Gujarat Cooperative Milk Marketing Federation.
- Because of his efforts, India became the largest producer of milk in 1998, surpassing the U.S.

National Awards by President of India-

- Padma Shri (1965)
- Padmabhushan (1966)
- Krishi Ratna (1986)
- Padma Vibhushan (1999)

International Awards-

- Ramon Magsaysay Award for Community Leadership (1963).
- "Watelet Peace Prize" Award of Carnegie Foundation for the year 1986 by His Royal Highness Prince Claus of The Netherlands.
- World Food Prize award for the year 1989.
- "International Person of the Year" by the World Dairy Expo, Wisconsin, USA (1993).
- "Ordre du Mérite Agricole" by the Government of France (in March 1997).
- Regional Award 2000 from the Asian Productivity Organization, Japan.
- The first 'Rochdale Pioneers Prize' by the international Co-operative Alliance (ICA), Seoul, Korea 2001.

13. PLACES IN NEWS

13.1 Srinagar added to UNESCO creative cities list

In news- Recently, Srinagar has been added to UNESCO creative cities network(UCCN).

Key highlights-

- The 49 cities were added to the network of 246 cities in recognition of "their commitment to placing culture and creativity at the heart of their development and to sharing knowledge and good practices.
- **Indian National Commission for Cooperation with UNESCO (INCCU)** had recommended Srinagar and Gwalior for inclusion in the coveted list.

About UNESCO creative cities network(UCCN)-

- UCCN was created in 2004 to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development.
- **This network works together towards a common objective:** placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively at the international level.
- The network now numbers 295 cities reaching 90 countries.
- **By joining the Network, cities commit to sharing their best practices** and developing partnerships involving the public and private sectors as well as civil society in order to:
 - Strengthen the creation, production, distribution and dissemination of cultural activities, goods and services.
 - Develop hubs of creativity and innovation and broaden opportunities for creators and professionals in the cultural sector.
 - Improve access to and participation in cultural life, in particular for marginalized or vulnerable groups and individuals.
 - Fully integrate culture and creativity into sustainable development plans.
- **The Network covers seven creative fields:** Crafts and Folk Arts, Media Arts, Film, Design, Gastronomy, Literature and Music.
- **The Creative Cities Network is a privileged partner of UNESCO.**

Other Indian cities on UNESCO Creative Cities Network (UCCN)-

- In 2019 UNESCO designated Mumbai as a member in the field of FILM and Hyderabad in the field of GASTRONOMY.
- Jaipur-Crafts and Folk Arts(2015).
- Varanasi-Creative city of Music (2015).
- Chennai-Creative city of Music(2017).

About Srinagar-

- It is the **summer capital of Jammu and Kashmir**.
- It lies in the Kashmir Valley on the banks of the **Jhelum River** (which is called Vyath in Kashmir), a tributary of the Indus.
- The river passes through the city and meanders through the valley, moving onward and deepening in the Wular Lake.
- The city is known for its natural environment, gardens, waterfronts and houseboats.
- It is also known for traditional Kashmiri handicrafts like Kashmir shawls and also dried fruits.
- The earliest records, such as Kalhana's Rajatarangini, mentions the Sanskrit name shri-nagara which have been interpreted distinctively by scholars.

13.2 CRPF chaupal

In news- In order to reduce the stress among the personnel, CRPF has launched an initiative called Chaupal recently.

About Chaupal-

- It seeks to promote a culture of talking and greater interaction at its camps.

- Once or twice a week, 18-20 personnel will sit in chairs in a circle outdoors, perhaps under a tree.
- The chaupal, which shall be planned beforehand, will be attended by personnel of all ranks, all of whom will be in civilian clothes.
- Company, platoon, or section commanders must necessarily be part of the chaupal “group sharing exercise”.
- It will be of 1-2 hours’ duration, during which participants will not have access to their phones.
- There will be no discussion of official or operational issues.
- Discussions will be entirely informal so that an atmosphere may be created in which every participant is able to talk about any domestic or personal issue without any hesitation.
- It must be ensured that no one laughs at or makes fun of anyone else; rather every person is encouraged to speak freely.

About Central Reserve Police Force (CRPF)-

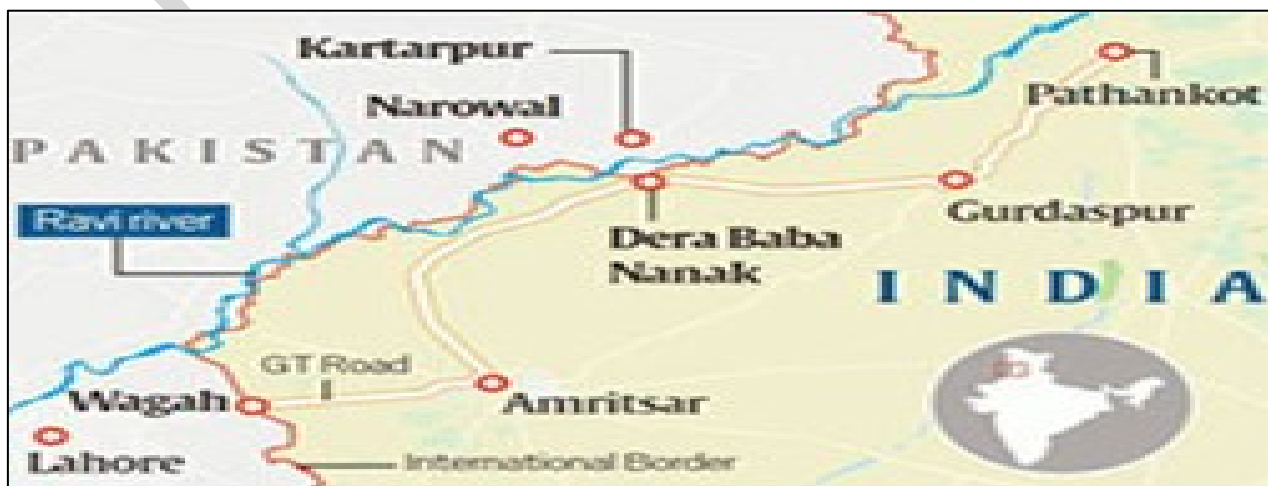
- The Central Reserve Police Force (CRPF) is India's largest Central Armed Police Force.
- It functions under the authority of the Ministry of Home Affairs (MHA) of the Government of India.
- Its primary role lies in assisting the State/Union Territories in police operations to maintain law and order and counter insurgency.
- It came into existence as Crown Representative’s Police on 27th July 1939.
- It became the CRPF on enactment of the CRPF Act on 28th December 1949.
- Its mission is to enable the government to maintain Rule of Law, Public Order and Internal Security effectively and efficiently, to Preserve National Integrity and Promote Social Harmony and Development by upholding supremacy of the Constitution.

13.3 Kartarpur corridor

In news- Ahead of Parkash Purb of Shri Guru Nanak Dev Ji, the Government of India has decided to reopen the Kartarpur Sahib corridor.

About Kartarpur(peace) corridor-

- The 4-km-long corridor links Gurdwara Darbar Sahib in Pakistan, the final resting place of Sikhism founder Guru Nanak Dev, to Dera Baba Nanak shrine in Punjab's Gurdaspur district.
- It is the place where the founder of Sikhism Guru Nanak is believed to have spent the last 18 years of his life.



- It allows Sikh pilgrims to travel visa-free to the Kartarpur gurdwara via the Attari-Wagah border.
- It was inaugurated on November 9, 2019 to mark the 550th “Parkash Guruparab (birth anniversary)” of Guru Nanak.
- India had signed an agreement with Pakistan on October 24, 2019 on the modalities for operationalization of the Kartarpur Corridor at Zero Point, International Boundary, Dera Baba Nanak.
- The proposal for the special corridor was first pitched back in 1999 by former prime minister Atal Bihari Vajpayee and his then Pakistani counterpart Nawaz Sharif.

Gurdwara Darbar Sahib Kartarpur/ Kartapur Sahib-

- It is a gurdwara in Kartarpur, **located in Shakargarh, Narowal District, in the Punjab province of Pakistan.**
- **Guru Nanak ji founded Kartarpur in 1504 CE on the right bank of the Ravi River** and established the first Sikh commune there.
- Following his death in 1539, Hindus and Muslims both claimed him as their own and raised mausoleums in his memory with a common wall between them.
- The changing course of the Ravi River eventually washed away the mausoleums.
- A new habitation was formed, representing the present-day Dera Baba Nanak on the left bank of the Ravi river.
- **Guru Nanak, settled and assembled the Sikh community here after his missionary travels** and lived for 18 years until his death in 1539.
- **Here, he gave the three principles** of Kirat Karo, Naam Japo, Wand Chako, which means work hard for a livelihood, keep remembering the God and share your bounties with the world.
- **It is one of the holiest sites in Sikhism, alongside the Golden Temple in Amritsar and Gurdwara Janam Asthan in Nankana Sahib.**

13.4 Pochampally selected as UNWTO Best Tourism village from India

In news- Pochampally village in Telangana has been selected as one of the ‘Best Tourism Villages’ by the United Nations World Tourism Organisation (UNWTO).

About UNWTO Best Tourism village-

- The prestigious award will be given on the occasion of the 24th session of the UNWTO General Assembly on 2nd December 2021 in Madrid, Spain.
- **The Best Tourism Villages by UNWTO Pilot initiative aims to award those villages which are outstanding examples of rural destinations** and showcase good practices in line with its specified nine evaluation areas.
- It also **aims to support villages to enhance their rural tourism potential** through training and access to opportunities for improvement.
- **Best tourism village is a global initiative to highlight those villages** where tourism preserves cultures and traditions, celebrates diversity, provides opportunities and safeguards biodiversity.
- **The Ministry of Tourism recommended three villages** for the UNWTO Best Tourism Village entry from India — Kongthong in Meghalaya, Ladhpura Khas, Madhya Pradesh and Pochampally in Telangana.

About UNWTO-

- **The UNWTO is the United Nations agency responsible for the promotion of responsible, sustainable and universally accessible tourism.**

- It promotes tourism as a driver of economic growth, inclusive development and environmental sustainability.
- It was founded in 1975.
- Its Headquarters: Madrid, Spain

About Pochampally-

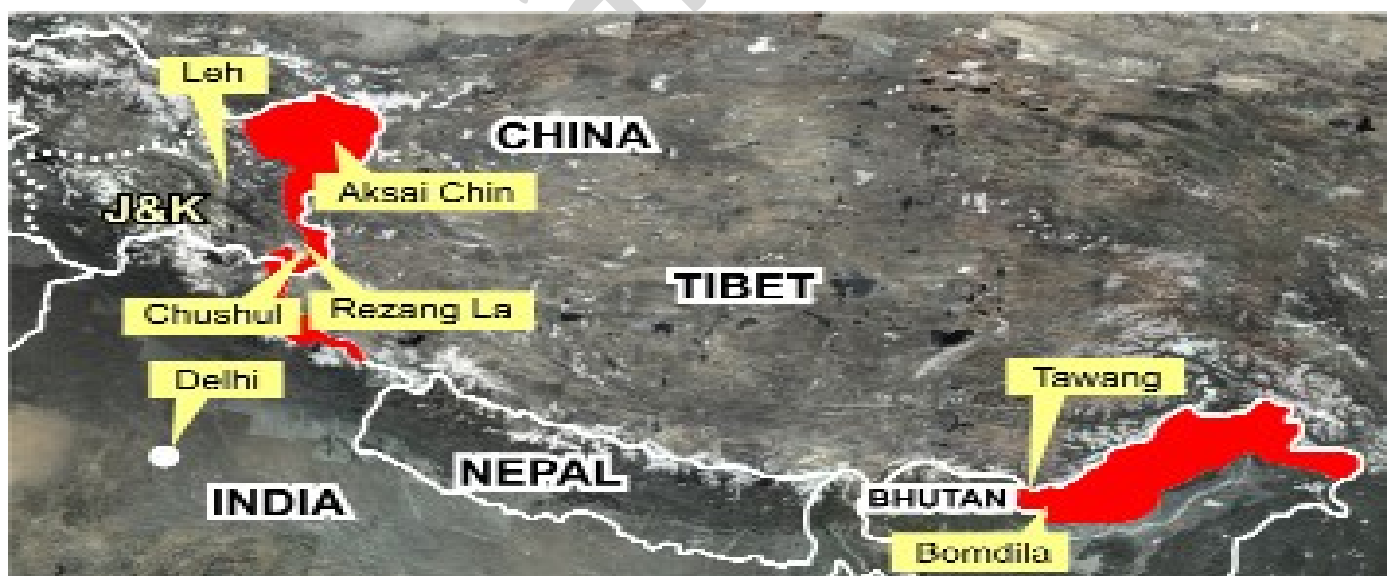
- Pochampally, is a town in Nalgonda district of Telangana and is often referred to as the Silk City of India for the exquisite sarees that are woven through a unique style called Ikat.
- This style, **Pochampally Ikat**, received a **Geographical Indicator (GI Status)** in 2004.
- Ikat is a Malaysian, Indonesian word which means "Tie and Dye".
- Ikat involves the process of wrapping (or tying) and dyeing sections of bundled yarn to a predetermined colour pattern before they are woven.
- It is also known as **Bhoodan Pochampally** to commemorate the Bhoodan movement that was launched by Acharya Vinobha bhawe from this village in 1951.

13.5 Rezang La

In news- Recently, the Defence Minister of India inaugurated a revamped war memorial in eastern Ladakh's Rezang La (Chousal), the site of an epic battle where Indian troops bravely fought the Chinese soldiers in 1962.

About Rezang La-

- It is a mountain pass on the Line of Actual Control (LAC) between Indian-administered Ladakh and the Chinese-administered Spanggur Lake basin that is also claimed by India.
- The pass is located on the eastern watershed ridge of the Chushul Valley.



- During the Indo-Chinese war, 114 Indian soldiers died defending their position at Rezang La on November 18, 1962.
- The 13th battalion of the Kumaon Regiment was entrusted with the defence of Chushul.
- Its C Company, consisting of 117 men, **commanded by a major Shaitan Singh**, was responsible for holding Rezang La.
- This battle prevented the Chinese from moving towards Leh in the 1962 war.

- Major Shaitan Singh later decorated posthumously with the Param Vir Chakra.
- The memorial in Chushul is at an altitude of over 15,000 feet and is very close to the India-China border.
- It honours the troops of Charlie Company of 13 Kumaon Regiment, who had defended Rezang La.

1962 Sino-Indian War-

- This War between China and India occurred in October–November 1962.
- A disputed Himalayan border was the main cause of the war.
- There had been a series of violent border skirmishes between the two countries **after the 1959 Tibetan uprising, when India granted asylum to the Dalai Lama.**
- India initiated a defensive Forward Policy from 1960 to hinder Chinese military patrols and logistics, in which it placed outposts along the border, including several north of the McMahon Line, the eastern portion of the Line of Actual Control proclaimed by Chinese Premier Zhou Enlai in 1959.
- China abandoned all attempts of peaceful resolution on 20 October 1962, invading disputed territory along the 3,225 kilometres (2,004 mi) long Himalayan border in Ladakh and across the McMahon Line.
- Chinese troops pushed back Indian forces in both theatres, capturing Rezang La in Chushul in the western theatre, as well as Tawang in the eastern theatre.
- The war ended when China declared a ceasefire on 20 November 1962, and simultaneously announced its withdrawal to its claimed "Line of Actual Control".

13.6 Langtang Microhydro Electricity Project

In news- Nepal's first hydropower project from a glacial lake has become functional recently.

About the project-

- It was built three years after the 2015 earthquake-avalanche that devastated the valley, with help from the Hong Kong-based Kadoorie Charitable Foundation.
- The \$534,000 scheme has a weir and spillway at the moraine, and the water is taken through a fiberglass-insulated penstock pipe to a powerhouse that generates 100kW of electricity.
- It provides 24 hours of electricity to 120 households and tourist lodges in Kyanjin and Langtang.
- Langtang Lirung Glacier lake at 4,100m is being drained to lower its level, and the water is used to generate electricity.
- The project is a first-of-its-kind in Nepal to power a village, and holds promise for other remote Himalayan valleys where the risk posed by expanding glacial lakes can be mitigated.
- Micro hydro is a type of hydroelectric power that typically produces from 5 kW to 100 kW of electricity using the natural flow of water.

13.7 World's first 'Bitcoin City'

In news- After becoming the **world's first country to adopt bitcoins (September 2021)** as legal tender in the counter, **El Salvador** is planning to build the world's first 'Bitcoin City'.

Key highlights-

- The country would initially issue a \$1 billion bond backed by bitcoin to begin raising funds for the planned city.
- This Bitcoin City would be circular, with an airport, residential and commercial areas, and feature a central plaza designed to look like a bitcoin symbol from the air.
- The city planned in the east of the country would get its energy supply from a volcano and would not levy any taxes except for value added tax (VAT).
- Half of the VAT levied would be used to fund the bonds issued to build the city, and the other half would pay for services such as garbage collection.
- The country will start funding in 2022, and the bonds will be available in 2022.
- The bond would be issued on the "liquid network", a bitcoin sidechain network.

About El Salvador-

- The Republic of El Salvador is a small coastal country in Central America.



- El Salvador's capital and largest city is **San Salvador**.
- El Salvador's population numbers 6.1 million.
- Ethnically, 86.3% of Salvadorans are mixed (mixed Native Salvadoran and European (mostly Spanish origin)).
- El Salvador is also known as the land of volcanoes as well as "**the little thumb of America**"

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13.8 English Channel

In news- Recently, over 20 migrants died crossing the Channel from France to England when their boat sank off the northern port of Calais.

About English Channel-

- The English Channel, also called La Manche (in French) is a narrow arm of the Atlantic Ocean separating the southern coast of England from the northern coast of France.
- It also links to the southern part of the North Sea by the Strait of Dover at its northeastern end.
- With an area of some 29,000 square miles (75,000 square km), it is the smallest of the shallow seas covering the continental shelf of Europe.
- From its mouth in the North Atlantic Ocean an arbitrary limit marked by a line between the Scilly Isles and the Isle of Ushant its width gradually narrows from 180 km to a minimum of 34 km.
- It is the busiest shipping area in the world.
- Nowadays, many travellers cross beneath the English Channel using the Channel Tunnel, which was first proposed in the early 19th century and finally released in 1994, connects the UK and France by rail.
- It is now routine to travel between Paris, Brussels and London on the Eurostar train.
- The **current English name** (in general use since the early 18th century) **probably derives from the designation "canal" in Dutch** sea atlases of the late 16th century.

- Earlier names had included **Oceanus Britannicus** and the **British Sea**, and the French have regularly used **La Manche** since the early 17th century.



13.9 Solomon Islands

In news- Recently, Solomon Islands witnessed violent protests in its capital city Honiara.

About Solomon Islands-

- Solomon Islands is a **country consisting of six major islands** and over 900 smaller islands in Oceania, to the east of Papua New Guinea and northwest of Vanuatu and about 1,500 kilometres northeast of Australia.
- It has a land area of 28,400 square kilometres.
- It has a population of about 700,000 - mostly Melanesian but also Polynesian, Micronesian, Chinese and European.
- **Almost all Solomon Islanders are Christian**; most are Protestant with smaller numbers of Roman Catholics.
- **English is the official language, but Pijin, an English-based Melanesian pidgin**, is the language that is most widely used and understood.
- **Its capital, Honiara is located on the largest island, Guadalcanal.**

- The country takes its name from the Solomon Islands archipelago.
- This place is best known for the bloody fighting that took place there during World War II between the United States and Japan.
- World War II Battle of Guadalcanal named after the country's largest island.
- It is a constitutional monarchy, with the British monarch, represented by a governor-general, serving as the formal head of state.
- Still, the country, a member of the Commonwealth, is independent, and the governor-general is appointed on the advice of the unicameral National Parliament.
- It was then known as the British Solomon Islands Protectorate and became the Solomon Islands before independence in 1978



- A migration of settlers from Malaita, the country's second biggest island and most populous province, to the economic opportunities on Guadalcanal and Honiara stoked ethnic tensions and eventually unrest.
- China has provided another cause for the community to divide, with the government supporting Beijing and the Malaitian leaders supporting Taiwan.