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Current Affairs (CONSOLIDATION)

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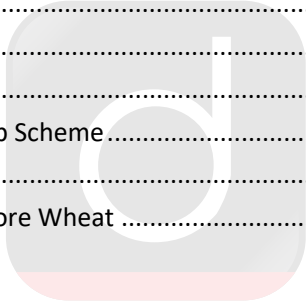
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Polity and Governance

Highlights

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- Enforcing Fundamental Duties
- Gobar-Dhan Plant: 2nd Phase of SBM-U

Operation Ganga

Why in News?

The **Government of India** has launched a 'multi-pronged' initiative named '**Operation Ganga**'.

- A dedicated Twitter handle '**OpGanga Helpline**' to assist Indian evacuation from Ukraine has also been announced.
- The **tensions between Russia and Ukraine** are currently heightened, with war erupting in Ukraine after the Russian military launched a series of attacks recently.



What is Operation Ganga?

- It is an evacuation mission to **bring back all the Indian nationals who are currently stranded in Ukraine**.
 - There were **around 20,000 Indians** including students stuck in Ukraine.
 - Till now, three Air India flights have been able to bring back more than 900 Indians from Ukraine to India.
- The Indian evacuation flights are **operating from neighbouring countries** like **Romania and Hungary**.
- The government is **also facilitating evacuation of stranded Indians from its borders** crossing **Romania, Hungary, Poland and Slovakia**.

What are the Evacuation Operations carried out by India?

Operation Ganga (2022):

- It is an evacuation mission to bring back all the Indian nationals who are currently stranded in Ukraine.
- The tensions between Russia and Ukraine are currently heightened, with war erupting in Ukraine after the Russian military launched a series of attacks recently.

Note:



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Vande Bharat (2020):	<ul style="list-style-type: none"> ➤ When the Covid-19 pandemic hit the world, the Centre launched the Vande Bharat Mission to bring back Indian citizens stranded in foreign countries. ➤ In the multiple phases of the operation, about 60 lakh Indians were brought back as on 30th April, 2021. 	Operation Safe Homecoming (2011):	<ul style="list-style-type: none"> ➤ India launched 'Operation Homecoming' to bring back Indian citizens stranded in conflict-torn Libya. <ul style="list-style-type: none"> ○ Under the operation, India evacuated 15,400 Indian nationals. ➤ The air-sea operation was conducted by the Indian Navy and Air India.
Operation Samudra Setu (2020):	<ul style="list-style-type: none"> ➤ It was a naval operation as part of the national effort to bring home Indian citizens from overseas during the Covid-19 pandemic. ➤ It successfully brought back 3,992 Indian citizens to their homeland by sea. ➤ Indian Naval ships Jalashwa (Landing Platform Dock), and Airavat, Shardul and Magar (Landing Ship Tanks) participated in this operation which lasted over 55 days and involved traversing more than 23,000 km by sea. 	Operation Sukoon (2006):	<ul style="list-style-type: none"> ➤ As Israel and Lebanon broke into military conflict in July 2006, India rescued its stranded citizens by launching this operation, which is now famously known as the 'Beirut Sealift'. ➤ It was the largest naval rescue mission since the 'Dunkirk' evacuation. ➤ The task force evacuated about 2,280 people including some Nepalese and Sri Lankan nationals between 19th July and 1st August 2006.
Evacuation from Brussels (2016):	<ul style="list-style-type: none"> ➤ In March 2016, Belgium was hit by terrorist strikes at Brussels Airport in Zaventem, and one at Maalbeek Metro station in central Brussels. ➤ A total of 242 Indians, including 28 crew members, returned to India in a Jet Airways flight. 	1990 Kuwait Airlift (1990):	<ul style="list-style-type: none"> ➤ In 1990, when 1,00,000 Iraqi soldiers armed with 700 tanks marched into Kuwait, the royals and VIPs had fled to Saudi Arabia. ➤ The general public was left behind to fend for themselves. ➤ Over 1,70,000 of those stranded in Kuwait were Indians. ➤ India kicked off the evacuation process in which over 1,70,000 Indians were airlifted and repatriated to India.
Operation Raahat (2015):	<ul style="list-style-type: none"> ➤ In 2015, a conflict raged between the Yemeni government and Houthi rebels. ➤ Thousands of Indians were stranded and Yemen was not accessible by air due to a no-fly zone announced by Saudi Arabia. ➤ Under Operation Raahat, India evacuated nearly 5,600 people from Yemen. 	<h2>Share of Children in Budget 2022-23</h2> <h3>Why in News?</h3> <p>According to an analysis by a NGO, Children in the country received the lowest share of allocation in the Budget in 11 years.</p> <ul style="list-style-type: none"> ➤ Budgeting for children by the Union Government had started as early as 2008 with the publication of the first-ever Child Budget Statement. Subsequently, several states have also initiated the practice. 	
Operation Maitri (2015):	<ul style="list-style-type: none"> ➤ It is the joint relief and rescue operation by the Indian government and the Indian Armed forces in the aftershock of the 2015 Nepal earthquake. ➤ The joint Army-Air Force operation brought over 5,000 Indians back from Nepal by Air Force and civilian planes. The Indian army successfully evacuated 170 foreign nationals from the US, the UK, Russia and Germany. 		

Note:

What is in the Budget for the Children?

➤ About:

- The total allocation for children in Union Budget 2023 is Rs. 92,736.5 crore, against an allocation of Rs. 85,712.56 crore in the last Budget.
 - Though this is an increase of 8.19% in absolute terms, it's not proportionate to the increase in the total expenditure in the Union Budget.
 - The share of the Budget for children is a **meagre 2.35% of the Union Budget** for the next fiscal (2022-23), which is a reduction of 0.11%, which is the lowest share children have received in the last 11 years.

➤ Sector-wise Analysis:

○ For Child health:

- The **allocation** for child health **has decreased by 6.08%**.
- One of the most important child health schemes, the **NRHM-RCH Flexi Pool**, has observed a reduced allocation of 8.22%.
 - This flexipool addresses the needs of health systems strengthening and Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) of the States.

➤ For Child Development Programme:

- They have seen a **drop of 10.97% in allocation** for the next fiscal at Rs. 17,826.03 crore. These include supplementary nutrition and anganwadi (day care) services.
 - Schemes for children such as **Poshan 2.0**, which provide integrated benefits to women and children, **did not get any additional funds this year**.
 - In 2022-23, an estimated budget of Rs 10,234 crore has been sanctioned to the **Pradhan Mantri Poshan Shakti Nirman (PM POSHAN) programme**. Last year, the revised estimate was Rs 10,234 crore.
 - This scheme was **earlier known as the 'National Program of Midday Meal in Schools'** and provided hot cooked meals to school children between the ages of 6 and 14 years.

➤ For Child Education:

- The share of child education has witnessed **only a marginal increase of 0.3% points from 1.74% in the current fiscal to 1.73% for the next fiscal**.

- A **'One class, one TV channel'** programme announced in the budget is a difficult mode of learning for children.
 - The **'One class, one TV channel'** programme of **PM eVIDYA** will be expanded from 12 to 200 TV channels.

➤ For Protection and Welfare of Children:

- Schemes for the protection and welfare of children clubbed under the **Mission Vatsalaya** of the Ministry of Women and Children received Rs. 1,472.17 crore.
 - This is 65% more than this fiscal, but below the allocation of Rs. 15,000 crore in 2019-2020, before the scheme was restructured.

What are the issues with the Budgeting for Children?

➤ Mere Annual Accounting Exercise:

- Budgeting for children by the Union Government has **remained limited to being a mere annual accounting exercise** culminating in the publication of the **Child Budget Statement (CBS)** by simply collating relevant budget heads across departments.
 - This alone does little to address the core objective of remaining responsive to the special needs of children.

➤ Lack of Responsibility from State Governments:

- State Governments, being **mainly responsible for implementing many of the critical schemes for children**, play an important role in taking this exercise forward.
 - But even for them, it has **mostly been perceived as an accounting responsibility** rather than as a tool to plan and execute interventions for children more effectively.

➤ Lack of Standardisation:

- Moreover, there is a **lack of standardisation of norms** among government entities for reporting in their respective **Child Budget Statement (CBS)**.

What about the State of Children in India?

- **NHFS-5 Findings:** The recent **NHFS 5 survey** has revealed a mixed picture on child health and nutrition.
 - On one hand there are definite positives like **reduction in child mortality rates**, improvements in the levels of nutrition indicators like stunting and wasting etc.

Note:



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- On the other hand, incidents of **anemia** among children have gone up **from 58.6% in NFHS 4 to an alarming level of 67.1%** in this round, leading experts to point out that more efforts are needed for meeting the **2030 SDG targets**.
- **ASER Surveys Findings:**
 - The consecutive **ASER surveys** have pointed out that **there has been no improvement in the proportion of children** currently not enrolled in school between 2020 and 2021 and there **exists a lot of variability among the states in this regard**.
- **Impact of Covid-19:**
 - **Covid-19 has impacted children in diverse ways** – be it physical, emotional, cognitive, or social repercussions, including transition or migration, familial crises, isolation from friends, discontinuity of learning, environment, quarantine, hospitalisation of self or family members, and **entry into adult roles of work or marriage**.
 - Consequently, the **lives of India's children were severely restricted** in terms of their access to education, nutrition and development, and child protection.

Rashtriya Uchchatar Shiksha Abhiyan

Why in News?

The Government has approved the scheme of **Rashtriya Uchchatar Shiksha Abhiyan (RUSA)** for continuation till 31st March, 2026 or till further review, whichever is earlier.

- The proposal entails an expenditure of Rs. 12929.16 crore out of which Central Share is Rs. 8120.97 crores and the State Share is of Rs. 4808.19 crores. It has been envisaged to support around 1600 projects under the new phase of the scheme.

What is RUSA?

- It is the **centrally sponsored scheme** launched in **October 2013** that aims at providing **strategic funding to higher education institutions** throughout the country.
- The **central funding** (in the ratio of 60:40 for general category States, 90:10 for special category states and 100% for union territories) is norm based and outcome dependent.

- The **funding flows from the Ministry of Education** through the state governments/union territories to **the State Higher Education Councils** before reaching the identified institutions.
- The funding to states **would be made on the basis of critical appraisal of State Higher Education Plans**, which would describe each state's strategy to address issues of equity, access and excellence in higher education.

What is envisaged in the News Phase?

- New phase of RUSA targets to reach out the unserved, underserved areas; remote/rural areas; difficult geographies; **LWE (Left-Wing Extremism)** areas; NER (North Eastern Region); **Aspirational Districts**, tier-2 cities, areas with low **GER (Gross enrolment ratio)** etc., and to benefit the most disadvantaged areas and SEDGs (Socio-Economically Disadvantaged Groups).
- The new phase of the scheme has been designed to **implement some of the recommendations and aims of the New Education Policy**, which suggests some key changes to the current higher education system to revamp and re-energize it and thereby deliver quality higher education, with equity and inclusion.
- State Governments will be supported for **Gender inclusion, Equity Initiatives, ICT, Enhancing employability through vocationalisation & skill upgradation**.
- States will also be supported for creation of **new Model Degree Colleges**.
- State Universities will be supported for **Multi-Disciplinary Education and Research**.
- Grants will be provided for strengthening both accredited and non-accredited Universities and Colleges for undertaking various activities including teaching-learning in Indian languages.

What are the Objectives?

- Improve the overall quality of state institutions by conforming to the prescribed norms and standards.
- Adoption of accreditation (certification of competency) as a mandatory quality assurance framework.
- Promoting autonomy in state universities and improving governance in institutions.
- Ensure reforms in the affiliation, academic and examination system.

Note:

- Ensure adequate availability of quality faculty in all higher educational institutions and ensure capacity building at all levels of employment.
- Create an enabling atmosphere for research in the higher education system.
- Correct regional imbalances in access to higher education by setting up institutions in unserved and underserved areas.
- Improve equity in higher education by providing adequate opportunities to the disadvantaged.

Reserved Forest

Why in News?

Recently, the Delhi government has **notified forest land in two villages in South Delhi** as 'reserved forest', which will give them legal status.

- It was notified under **Section 20** (declaration of reserved forest) of **Indian Forest Act, 1927**.

What are the Different Types of Forests?

- **Reserved Forests:** Reserve forests are the **most restricted forests** and are **constituted by the State Government** on any forest land or wasteland which is the property of the Government.
 - In reserved forests, **local people are prohibited**, unless specifically allowed by a Forest Officer in the course of the settlement.
- **Protected Forests:** The **State Government is empowered to constitute any land other than reserved forests as protected forests** over which the Government has proprietary rights and the power to issue rules regarding the use of such forests.
 - This **power has been used to establish State control** over trees, whose timber, fruit or other non-wood products have revenue-raising potential.
- **Village forest:** Village forests are the **one in which the State Government may assign to 'any village community the rights of Government** to or over any land which has been constituted a **reserved forest**'.

How are Forests Categorised Based on Rainfall in India?

- **Tropical Evergreen and Semi Evergreen Forests:**
 - These forests are found in the **western slope of the Western Ghats**, hills of the northeastern region and the Andaman and Nicobar Islands.

- They are **found in warm and humid areas** with an **annual precipitation of over 200 cm** and mean **annual temperature above 22°C**.
- Tropical evergreen forests are **well stratified, with layers closer to the ground and are covered with shrubs and creepers**, with short structured trees followed by a tall variety of trees.
- In these forests, **trees reach great heights** up to 60 m or above. There is **no definite time for trees to shed their leaves**, flowering and fruition. As such these forests **appear green all the year round**.
- The **semi evergreen forests are found in the less rainy parts** of these regions. Such forests have a mixture of evergreen and moist deciduous trees. The undergrowing climbers provide an evergreen character to these forests.

➤ **Tropical Deciduous Forests:**

- These are the **most widespread forests in India**. They are also called the **monsoon forests**. They spread over regions which **receive rainfall between 70-200 cm**. On the basis of the availability of water, these forests are further divided into **moist and dry deciduous**.

➤ **Montane Forests:**

- In mountainous areas, the decrease in temperature with increasing altitude leads to a corresponding change in natural vegetation.
- Mountain forests can be classified into two types, **the northern mountain forests and the southern mountain forests**.

➤ **Tropical Thorn forests:**

- Tropical thorn forests occur in the **areas which receive rainfall less than 50 cm**. These consist of a variety of grasses and shrubs. It includes **semi-arid areas** of south west Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh and Uttar Pradesh.
- In these forests, **plants remain leafless for most part of the year** and give an expression of scrub vegetation.

➤ **Swamp Forests:**

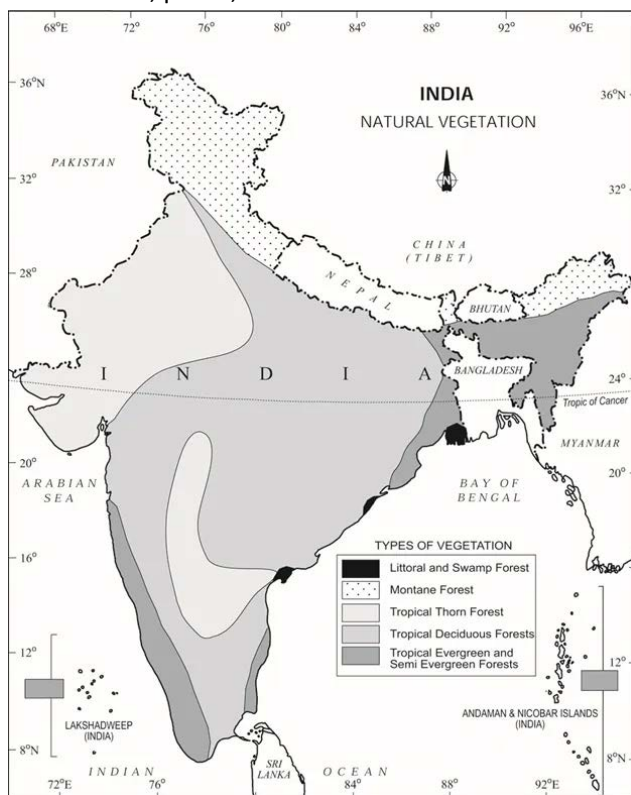
- They are found along the **Andaman and Nicobar Islands** and the delta area of the **Ganga and the Brahmaputra**.
 - Other areas of significance are the Mahanadi, the Godavari and the Krishna deltas.
- Some of these **forests are dense and impenetrable**. Only a limited number of plants are found in these evergreen forests.

Note:



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- They have **roots that consist of soft tissue** so that the plant can breathe in the water.
- It consists mainly of whistling pines, mangrove dates, palms, and bulletwood.



What is the Status of Forest Cover in India?

- According to the **India State of Forest Report-2021**, the forest and tree cover in the country continues to increase with an additional cover of 1,540 square kilometres over the past two years.
- **Madhya Pradesh has the largest forest cover in the country** followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
- **In terms of forest cover as percentage of total geographical area**, the top five States are Mizoram, Arunachal Pradesh, Meghalaya, Manipur and Nagaland.
- The states that have shown the **highest increase in forest cover** are Telangana (3.07%), Andhra Pradesh (2.22%) and Odisha (1.04%).
- Five states in the Northeast – Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland have all **shown loss in forest cover**.

Darkathon-2022

Why in News?

The **Narcotics Control Bureau (NCB)** launched a 'Darkathon' for cyber experts to **find effective solutions to unravel the anonymity of markets** in the dark web.

- The role of NCB as the nodal agency on the matter of drug law enforcement in India has gained prominence in recent times.

What is Darkathon-2022 ?

- The competitors will have to **provide a "solution" based on crawling of darkweb to identify and catalog darknet markets selling drugs** with a mechanism to automatically add new markets and drop inactive ones, identify drug traffickers based in India and the drugs on sale and digital footprinting of active drug traffickers.
- The **number of drug seizures from parcel or courier consignments increased by almost 250% in India after the outbreak of the pandemic** and a good number of them are linked to drug trafficking through darknet markets.

What is Darknet and Concerns?

- **About: Internet consists of three layers:**
 - The **first layer is public**, consisting of sites that one uses frequently such as Facebook, Twitter, Amazon and LinkedIn. This layer makes up only 4% of the entire internet.
 - The **second layer, the deep web**, is a network where data is stored in inaccessible databases (i.e. cannot be accessed through traditional search engines like Google). It is used to provide access to a specific group of people.
 - The data is generally sensitive and private (government private data, bank data, cloud data etc), so kept out of reach.
 - The **third layer is the darknet** which is also known as a part of the 'Deep Web'. It is a network built over the internet which is encrypted.
 - It is basically a layer of the Internet accessible only by using special software like TOR (The Onion Router), or I2P, which stands for Invisible Internet Project.
 - Anything present on the dark web will not be pulled up in internet searches, thereby offering a high degree of anonymity.

Note:

➤ Concerns over Darknet:

- In February 2016, in a study titled 'Cryptopolitik and the Darknet', researchers analysed content over the TOR network.
 - Of the 2,723 websites they could classify by content, 1,547 – 57 % – hosted illicit material ranging from drugs (423 sites), illegitimate pornography (122) and hacking (96), among others.
- There were also reports of log-in details of streaming sites like Netflix being sold on the dark web marketplaces for cheap rates.
- The network is also used by several activists especially those living under oppressive regimes to communicate without any government censorship.
- The TOR network was used by activists during the **Arab Spring**.

➤ Darknet and India:

- The Information Technology Act, 2000 deals with cybercrime and comes under the Ministry of Electronics and Information Technology. There are only six sections in the law that deal with cybercrime.
- With the changing times, India needs a code of criminal procedures dealing with cybercrime that would come under the Ministry of Home Affairs, which deals with policing issues.
- Also, there is a need for police, trained in changing cyber trends who are dedicated only to cybercrime and not transferred to other police units.

Banning Chinese Apps

Why in News?

Recently, the **Ministry of Home Affairs** has recommended a **ban on 54 Chinese mobile applications**, including the popular game Garena Free Fire over **concerns related to privacy and national security**.

- In 2020, the government also **banned TikTok** and other popular short video apps from China.
- The decision to ban such apps in India is **not only a geopolitical move** but also a **strategic trade manoeuvre** that can have significant economic impact.
- Earlier, it was found that **India's trade with China in 2021 crossed USD125 billion** with imports from China nearing a record USD100 billion, underlining continued demand for a range of Chinese goods, particularly machinery.



What are the Pros of the Decision?

➤ Help in Serving Nation's Tech Market:

- Banning these Chinese websites and applications to the Indian public effectively allows our home-grown IT talent to focus on the newly arrived Internet user.
 - Big tech firms from Silicon Valley (US) and China in both hardware and software have been in a tussle over the Indian consumer, but India's focus remains on exporting IT services while paying little attention to servicing our own nation's tech market.
- **No Longer Reliance on Passive Diplomacy:** Banning these apps also sends a clear message from India that **it will no longer be a victim of China's Nibble and Negotiate policy** and will review the norms of engagement.
 - **Standoff in Ladakh** Continues.
- **Hurting Chinese Ambition:** The ban may affect one of China's most ambitious goals, namely to become the **digital superpower of the 21st century**.
 - In its attempt to dominate the rest of the world, the **Chinese Internet industry needs India's 500-plus million netizens** to continue to act as a training ground for the **Artificial Intelligence** algorithms they put together.
- **Recognising Importance of Data:** India's app ban, and consideration of related restrictions on telecom hardware and mobile handsets, is based on the recognition that data streams and digital technology are a new currency of global power.

Note:

What are the Cons of the Decision?

- **Data Privacy Issue Not Limited to Chinese Apps:** In recent times apps were banned on reports of stealing and transmitting users data in an unauthorised manner to servers which have locations outside India.
 - However, data privacy and data security concerns are **not limited only to Chinese apps**.
- **India's Economic Dependencies on China:** The ban on Chinese mobile apps is a relatively soft target, as **India remains reliant on Chinese products** in several critical and strategically sensitive sectors.
- **No Replacement Available:** After the removal of more than 118 Chinese apps, Indian techies have started trying to fill the holes with copycat replacement websites and applications. But faithful copies are not enough for us to make full use of China's exit.

Karnataka High Court on Online Gaming

Why in News?

Recently, the Karnataka High Court delivered a judgement striking down major portions of the **Karnataka Police (Amendment) Act, 2021** which banned online gambling and skill-based gaming platforms.

- Currently, online gaming falls in a regulatory grey area and **there is no comprehensive legislation with respect to its legality**.

What was the High Court's Ruling?

- The Karnataka High Court struck down the amendments to the Karnataka Police Act on three major grounds:
 - **Violation of fundamental rights** of trade and commerce (**Article 19**), liberty and privacy (**Article 21**), speech and expression (Article 19).
 - Being manifestly arbitrary and irrational insofar as **it did not distinguish between two different categories of games**, i.e. games of skill and chance.
 - A **"game of skill"** is based mainly on the mental or physical level of expertise of a player, rather than a chance.

- A **"game of chance"** however is determined mainly by a random factor of any type. In games of chance, the usage of skill is present but a higher level of chance determines success.
- **Games based on skills are allowed in most parts of the country**, while **games of chance** are categorised under gambling and are **prohibited in most parts of the country**. As **betting and gambling is a state subject**, different states have their own legislation.
 - **Lack of legislative competence of State legislatures** to enact laws on online skill-based games.
- The court also held that the **State government provided no evidence or data on whether a sweeping ban was justified and neither constituted a committee of experts** to study the issue.
- The court also held that **playing online games could help in building the character of an individual and enjoying online gaming could also fall within the contours of freedom of expression** and right to liberty and privacy guaranteed under the constitution.
- The court also opined that **regulation of online games may be a better and proportionate solution rather than an outright ban**, and left it open for the State government to come up with a new legislation dealing with betting and gambling in accordance with the provisions of the constitution.

What was the Karnataka Police (Amendment) Act, 2021?

- The law was introduced by the Karnataka government to **ban online gambling and skill-based gaming platforms**.
- The games banned were games that **involved any wagering or risking of money** on an uncertain event for example online rummy, poker and fantasy sports.

Which are the Other States

Where Such Laws Were Struck Down?

- Apart from Karnataka, a similar law introduced by the **Tamil Nadu government was struck down by the Madras High Court in August 2021**.

Note:



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- In September 2021, the **Kerala High Court** had also **quashed a notification issued by the State government** specifically banning the game of online rummy when played for stakes.

Why are States Trying to Ban Online Gaming?

- Many social activists, government officials and those in law enforcement believe that **online games like rummy and poker are addictive in nature**; and when played with monetary stakes **leads to depression, mounting debts and suicides**.
 - Reportedly, there have been a few instances where **youngsters, faced with mounting debts due to losses** in online games have committed other crimes like theft and murder.
 - Earlier, the **World Health Organisation (WHO)** had announced a plan to include **"gaming disorder" as a mental health condition**.
- Online games are **susceptible to manipulation by the websites operating such games** and that there is a possibility that users are not playing such games against other players, but against automatic machines or 'bots', wherein **there is no fair opportunity for an ordinary user to win the game**.

What are the Negative Consequences of Banning Online Gaming?

- An outright ban may not entirely curtail the playing of such online games, with or without stakes.
 - **Telangana, which was the first State to ban online games for stakes in 2017** has seen a **spurt of illegal or underground online gambling apps**.
 - Most of which **originate from China or other foreign countries**, and accept payments from players through dummy companies or hawala channels.
 - Both the **Enforcement Directorate (ED)** and local cyber crime authorities have tried to crack down on such apps but with limited success.
- Shifting of users to grey or illegal offshore online gaming apps not only results in **loss of tax revenue for the State and job opportunities** for locals, but results in **users being unable to avail remedies for any unfair behaviour** or refusal to pay out winnings.

What are the Central Laws Related to Lottery, Gambling and Betting?

- **The Lotteries Regulation Act, 1998:**
 - Lottery is considered **legal in India**. Lottery should be organised by the state government and the place of Draw should be in that particular state.
- **Indian Penal Code, 1860:**
 - The code has provisions for punishing anyone who to the annoyance of others does any obscene act in a public place or sings, recites or utters any obscene song, ballad or words, in or near any public place.
 - These provisions of the IPC may be attracted if any obscene matter is used for the purpose of advertising betting and gambling activities.
- **Prize Competitions Act, 1955:**
 - It defines Prize in Competitions.
- **Foreign Exchange Management Act, 1999:**
 - Remittance of the income generated from lottery winning, racing/riding is prohibited under this Act.
- **Information Technology Rules, 2011:**
 - Under these rules, any internet service provider, network service provider or any search engine will not host any such content which directly or indirectly supports Gambling.
- **Income Tax Act, 1961:**
 - Current taxation policy in India covers all types of Gambling industry directly and indirectly. Thus, it can be said that all regulated and legalised Gambling is supported in the **Gross Domestic Product (GDP)** of India.

World NGO Day

Why in News?

Every year, **27th February** is observed as the **World NGO day** all over the world.

Note:

- India has over **three million Non-Governmental Organisations (NGO)** that work across a range of arenas and play important roles of facilitator, catalyst or partner in bringing social transformation.

What is the History of World NGO Day?

- The day assumed its official status when **12-member countries of the IX Baltic Sea NGO Forum** on 17th April 2010 formally recognised it.
 - In 2012, the **forum's Final Statement Resolution adopted the day.**
- Although the day was recognised officially in 2010, it was only in 2014, that for the **first time World NGO Day was observed** by the **United Nations.**
- The main man behind this day was **Marcis Liors Skadmanis**, an UK-based social entrepreneur, who inaugurated the **2014 World NGO Day.**
- The day was **conceived to spread awareness of the tremendous contributions** of NGOs all around the world and honour the relentless efforts of the social workers both in the public and private sectors.

What is the Role of NGOs in Indian Democracy?

- **Bridging the Gap:**
 - NGOs endeavour to **plug gaps in the government's programmes** and reach out to sections of people often left untouched by state projects. For example, **providing aid to migrant workers in Covid-19 crisis.**
 - In the present scenario, when **India is still combating Covid-19**, non-profits **have been on the ground, working tirelessly to directly supplement the government's efforts** to bring relief and actively engage in vaccination drives to the most vulnerable communities.
 - These NGOs also look into **accelerating activities** like
 - Issues dealing with **poverty alleviation**, water, environment, women's rights and literacy.
 - They have been **dynamic in almost all sectors:** Health, education, livelihood in rural and urban areas etc.
- **Role of an Enabler:**
 - Community-level outfits and **self-help groups** are critical for bringing any change in the ground.
 - In the past, **such grass roots organisations have been enabled by collaborations with bigger NGOs** and research agencies that have access to foreign funding.

Acting as a Pressure Group:

- There are **political NGOs that mobilise public opinion** against government's policies and actions.
 - To the extent such **NGOs are able to educate the public** and put pressure on public policy, they act as important **pressure groups** in a democracy.

Role in Participative Governance:

- Many civil society initiatives have contributed to some of the path-breaking laws in the country, including the **Environmental Protection Act-1986, Right to Education Act-2009, Forests Rights Act-2006 and Right to Information Act-2005, Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) Juvenile Justice, Integrated Child Protection Scheme (ICPS).**
- NGOs also partnered with the government to successfully implement major campaigns like **Swachh Bharat Abhiyaan and Sarva Siksha Abhiyaan.**

Acting as a Social Mediator:

- **Social inter-mediation** is an intervention of different levels of society by various agents to change social and behavioural attitudes within the prevailing social environment for achieving desired results of change in society.
 - In Indian context wherein people are still steeped in superstition, faith, belief and custom, **NGOs act as catalysts and create awareness among people.**

What are the issues Emanating from NGOs?

Lack of Credibility:

- During the last few years, **numerous organisations have mushroomed** which claim to work for the cause of helping the poor.
 - Under the garb of being an NGO, **these NGOs often mint money from donors** and are also involved in money laundering activities.

Lack of Transparency:

- India's disproportionate number of NGOs and the **sector's lack of transparency and accountability is clearly an issue that needs reforms.**

Note:



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- Further the **allegations of corruption against NGOs are ignored**. In the past many NGOs were blacklisted after being found to have indulged in misappropriation of funds.

What are the main Challenges NGOs Face?

- **Lack of Funds:**
 - Many NGOs find it difficult to **garner sufficient and continuous funding** for their work. Gaining access to appropriate donors is a major component of this challenge.
 - Earlier, the **Union Ministry of Home Affairs (MHA)** cancelled the **Foreign Contribution (Regulation) Act (FCRA), 2010** registration of various **Non-Governmental Organisations (NGOs)**.
 - Suspension of FCRA licence **means that the NGO can no longer receive fresh foreign funds** from donors pending a probe by the Home Ministry. The FCRA is **mandatory for associations and NGOs to receive foreign funds**.
- **Absence of Strategic Planning:**
 - Many NGOs suffer from the **lack of a cohesive, strategic plan** that would facilitate success in their activities and mission, rendering them unable to effectively raise and capitalize on financial support.
- **Poor Governance and Networking:**
 - Many NGOs have a **deficit of understanding** as to why they must have a Board and how to set one up.
 - **Poor or disorganized networking** is another major challenge, as it can cause duplicated efforts, time inefficiencies, conflicting strategies and an inability to learn from experience.
 - Many NGOs **do not maximize the use of current technologies** that could facilitate better communication and networking.
- **Limited Capacity:**
 - NGOs often **lack the technical and organizational capacity** to implement and fulfill their mission, and few are willing or able to invest in training for capacity building.
 - Weak capacity **affects fundraising ability, governance, leadership and technical areas**.

➤ **Development Approaches:**

- Many NGOs favor a **“hardware” approach to development through building infrastructure** and providing services instead of empowering people and institutions locally.

National Strategy for Additive Manufacturing policy

Why in News?

Recently, the **Ministry of Electronics and Information Technology (MeitY)** unveiled the **National Strategy for Additive Manufacturing Policy**.

What are the Highlights of Policy?

- The policy aims to **increase India's share in global additive manufacturing to 5%** within the next three years and **add USD 1 billion to the gross domestic product**.
- Further, it aims to develop **50 India specific technologies for material, machine and software, 100 new startups for additive manufacturing, 500 new products and train at least 1 lakh new skilled workers**.
- The Policy postulates the tenets of **‘Make in India’** and **‘Atmanirbhar Bharat Abhiyan’** that **advocate self-reliance** through the technological transformation of the production paradigm.

What is 3D Printing?

- **About:** 3D printing is **also known as additive manufacturing** which uses materials such as **plastics and metals** to convert products envisaged on **computer-aided design to real three-dimensional items**.
 - 3D printing is the **opposite of subtractive manufacturing** which is cutting out / hollowing out a piece of metal or plastic with, for instance, a milling machine.
- **Intersection of Technologies:** Additive Manufacturing is the **next generation of digital manufacturing** that allows the **intersection of computing electronics, imaging and the emerging areas of Artificial Intelligence, pattern recognition** and will create intellectual property and export opportunities.

Note:



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- **Possible Impact:** Additive Manufacturing (AM) has immense potential to **revolutionize India's manufacturing and industrial production** landscape through **digital processes, communication, imaging, architecture and engineering**.
 - The **next wave of startups** will emerge in this area.
- **Usage:** 3D printing traditionally has been used for **prototyping**. 3D printing has a lot of scope in making artificial limbs, stents, dental crowns, parts of automobiles and consumer goods, among others.

What are Opportunities for India?

- **Eliminating Large Capital Investments:** Machines are cheaper, inventories can be small and space requirements are not large.
 - Thus, jump-starting manufacturing does not face the massive hurdle of large capital requirement and the traditional small and medium enterprises can easily be adapted and retooled towards high technology manufacturing.
- **Leveraging India's IT Power:** The Indian software industry is well-established, and plans to increase connectivity are well underway as part of '**Digital India**'.
 - This would allow for the creation of additive manufacturing facilities in small towns and foster industrial development outside of major cities.
- **Uniform Quality Standards:** Maintaining uniform product quality is far easier because the entire system is built at the same time and assembly is not required.

What are the Associated Challenges?

- **Lack of Standards:** Since 3D printing is a **very niche and new domain**, there are **no global qualifications and certification norms**.
- **Hesitation in Adoption:** Another challenge is to **convince the industry and ministries to push for its adoption** in their respective sectors as any new technology, which is not understood easily, faces a tough time.
- **Risk of Job Losses:** In the initial meetings on the subject, there was a **lot of resistance on whether this technology would eat into the jobs of highly-skilled workers** in the medical equipment or aerospace technology sectors.

- **High Costing:** Although actual printing is cheap, **parts to build a 3D printer are very expensive** as the **equipment and manufacturing costs are very high**. In addition, there is a **concern about warranty** hence, resource companies are **hesitant to put 3D-printed parts into their machines if they are not covered for damage** in case the parts fail.
- **Sector Specific Challenges:** Globally and even in India, the **largest consumer of 3D printing is the automotive industry** and right now it is going through a lot of changes like the introduction of **BS-VI** and **electric vehicles**. **New vehicle design development has slowed** and so has the demand for 3D printing.

Draft India Data Accessibility & Use Policy 2022

Why in News?

Recently, the Ministry of Electronics and Information Technology (MeitY) released a policy proposal titled as, "**Draft India Data Accessibility & Use Policy, 2022**".

- The policy objectives mentioned in this draft are **primarily commercial in nature**. It aims to **radically transform India's ability to harness public sector data**.
- Earlier, a government committee headed by Infosys co-founder Kris Gopalakrishnan has suggested that **non-personal data generated in India be allowed to be harnessed by various domestic companies and entities**.

THE FINE PRINT

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Stakeholders like start-ups, enterprises, individuals and researchers will be able to access enriched data | <ul style="list-style-type: none"> ▪ India Data Council will oversee metadata standards, comprise the India Data Office and data officers of five other government departments |
| <ul style="list-style-type: none"> ▪ Pricing of datasets will be done by the respective government departments in a transparent manner | |
| <ul style="list-style-type: none"> ▪ Draft policy says guidelines will be framed to decide how long datasets can be held by the government | <ul style="list-style-type: none"> ▪ Every Ministry/ Department shall have data management units headed by chief data officers |

Note:



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Why has the Draft Data Accessibility Policy been Proposed?

- **Increased Data:** The generation of citizen data is slated to increase exponentially in the next decade and become a **cornerstone of India's USD 5 trillion-dollar digital economy**.
- **Benefits of Data Exploitation:** The **National Economic Survey, 2019** noted the commercial benefits of Government data exploitation.
 - The **private sector may be granted access to select databases for commercial use**.
- **Absence of Policy:** A background note that accompanies the policy outlines **existing bottlenecks in data sharing and use**.
 - It includes the **absence of a body for policy monitoring** and enforcement of data sharing efforts, absence of technical tools and standards for data sharing, identification of high value datasets and licensing and valuation frameworks.
- **To Unlock High Value Data:** It indicates a way forward to **unlock the high value of data across the economy**, congruent and robust governance strategy, making Government data interoperable and instilling data skills and culture.

What are the Major Proposals of the Draft Data Accessibility Policy?

- **India Data Office:** The document proposes the establishment of an **India Data Office (IDO)** to streamline and unify data access and sharing among government and other stakeholders.
 - It will **define frameworks for high-value data sets, finalise data standards and metadata standards** and review policy implementation, among others.
 - Every ministry or department should have **Data Management Units**, headed by Chief Data Officers, which will work closely with the IDO to ensure the implementation of this policy.
- **Coverage:** All data and information generated, created, collected, or stored by the central government and authorised agencies shall be covered by the policy. The measures can also be adopted by state governments.
- **Restricted Data:** All government data will be open and shareable unless it falls under a **negative list of data sets**.

- Data categorised under the **negative list of datasets that won't be shared; and restricted access and shared only with trusted users**, as defined by the respective ministry or department, under the controlled environment.
- **Data Toolkit:** All ministers or departments will receive a **data-sharing toolkit to help assess and manage risk associated with data sharing and publication**.
 - The framework **will assist data officers in determining whether a data set qualifies for release, restricted sharing, or must be placed on the negative list**, as well as the proper release channel and degree of anonymity required.
- **Aligned to Existing Laws:** Data shall remain the property of the agency/ department/ ministry/ entity which generated/collected it. Access to data under this policy shall not be in violation of any acts and rules of the government of India in force.
 - The legal framework of this policy shall be aligned with various acts and rules covering the data.

What are the Issues with the Draft Data Accessibility Policy?

- **Privacy:** India **does not have a data protection law** (Data Protection Bill) that can provide **accountability and remedy for privacy violations** such as coercive and excessive data collection or data breaches.
 - Here, **inter-departmental data sharing poses concerns related to privacy** since the open government data portal which contains data from all departments may result in the creation of 360 degree profiles and enable **state-sponsored mass surveillance**.
 - Even though the policy considers anonymisation as a desired goal there is a **lack of legal accountability and independent regulatory oversight**.
 - There is also a **failure to consider scientific analysis and the availability of automated tools** for the re-identification of anonymous data.
 - The commercial value of the data increases with greater amounts of personal data. The absence of an anchoring legislation further **leads to the policy not being able to fulfil the threshold of legality for state intervention into privacy** which was put in place by the **Supreme Court** of India in its landmark **right to privacy** decision (**K.S. Puttaswamy v. Union of India** 2017).

Note:

- **Transparency:** While adopting the language of open data it **strays from its core principle of providing transparency of the Government towards its citizens.**
 - There is only one mention of transparency and little to no mention of how such data sharing will help ensure demands for accountability and redress.
- **Perverse Revenue Objective:** The second issue is that the policy bypasses parliament as it contemplates large scale data **sharing and enrichment that will be borne from public funds.**
 - Further, the constitution of offices, prescription of standards that may be applicable not only to the Central government, but even **State governments and schemes administered by them require legislative deliberation.**
- **Federalism:** The policy, even though it notes that State governments will be, “free to adopt portions of the policy,” **does not specify how such freedom will be achieved.**
 - It becomes relevant, if specific standards are prescribed by the Central government for data sharing, or as a precondition to financial assistance.
 - There is also the **absence of any comment on whether data gathered from States may be sold by the Central government** and whether the proceeds from it will be shared with the States.
- **Lack of Clarity on Definitions for Key Concepts:** New concepts introduced by the Policy have been **defined in a vague and ambiguous manner** which opens them up to misinterpretation.
 - The Policy creates a separate category of ‘**High-Value Datasets**’ which it deems essential for governance and innovation, access to which will be accelerated.
 - However, **nowhere in the Background Note or the Policy has the category been concisely defined.**

National Supercomputing Mission

Why in News?

Recently, the **Indian Institute of Science (IISc) Bengaluru** installed the supercomputer ‘**Param Pravega**’. It has a **supercomputing capacity of 3.3 petaflops.**

- It has been installed under the government’s **National Supercomputing Mission.**
- The National Supercomputing Mission is intended to **indigenise the development and manufacturing of powerful computers.**

What is a Supercomputer?

- A **supercomputer** is a computer that performs at or near the **currently highest operational rate for computers.**
- Generally, **PETAFLOP** is a measure of a **Supercomputer’s processing speed** and can be expressed as a **thousand trillion floating point operations per second.**
 - **FLOPS (floating point operations per second)** are typically used to measure the performance of a computer’s processor.
 - Using floating-point encoding, extremely long numbers can be handled relatively easily.
- Supercomputers are primarily designed to be used in enterprises and organizations that **require massive computing power.**
 - For example: **weather forecasting, scientific research, intelligence gathering and analysis, data mining, etc.**
- Globally, **China has the maximum number of supercomputers** and maintains the top position in the world, followed by the US, Japan, France, Germany, Netherlands, Ireland and the United Kingdom.
- India’s **first supercomputer was PARAM 8000.**
- **PARAM Shivay, the first supercomputer assembled indigenously**, was installed in IIT (BHU), followed by **PARAM Shakti, PARAM Brahma, PARAM Yukti, PARAM Sanganak** at IIT-Kharagpur, IISER, Pune, JNCASR, Bengaluru and IIT Kanpur respectively.
- In 2020, **PARAM Siddhi**, the High-Performance Computing-Artificial Intelligence (HPC-AI) supercomputer, achieved **global ranking of 62nd in Top 500 most powerful supercomputer systems in the world.**

What is the National Supercomputing Mission?

- In 2015, the **National Supercomputing Mission** was **launched** to enhance the research capacities and capabilities in the country by connecting them to form a Supercomputing grid, with **National Knowledge Network (NKN)** as the backbone.

Note:

- The NKN project is aimed at establishing a strong and robust Indian network which will be capable of providing secure and reliable connectivity.
- It supports the government's vision of '**Digital India**' and '**Make in India**' initiatives.
- The Mission is being jointly steered by the **Department of Science and Technology (DST)** and the **Ministry of Electronics and Information Technology (MeitY)**.
 - It is **implemented by** the Centre for Development of Advanced Computing (C-DAC), Pune, and the IISc, Bengaluru.
- The mission was planned in **three phases**:
 - **Phase I** looking at assembling supercomputers,
 - **Phase II** looking at manufacturing certain components within the country.
 - **Phase III** where a supercomputer is designed by India.
- An **indigenously developed server platform** called '**Rudra**' is being tried out in a pilot system, with an interconnect for **inter node communication** called **Trinetra** also having been developed.

Lavender Cultivation

Why in News?

'Lavender Cultivation' under CSIR-IIIM's **Aroma Mission** will be started in **Ramban district (Jammu Kashmir)** as a part of **Purple Revolution**.

- Aromatic Plants include **lavender, damask rose, mushk bala, etc.**
- **Council of Scientific & Industrial Research (CSIR)** is a contemporary R&D organization under the Ministry of Science and Technology.

What is the Purple Revolution?

- **About:**
 - The Purple or Lavender Revolution was **launched in 2016 by the Union Ministry of Science & Technology** through the **Council of Scientific & Industrial Research's (CSIR) Aroma Mission**.
 - Lavender cultivation is practiced in almost all the 20 districts of Jammu & Kashmir.
 - Under the mission, **first-time farmers were given free lavender saplings**, while those who had cultivated lavender before were **charged Rs. 5-6 per sapling**.

Aim:

- To support domestic aromatic crop based agro economy by moving from imported aromatic oils to homegrown varieties.

Products:

- Main product is Lavender oil which sells for at least Rs. 10,000 per litre.
- Lavender water, which separates from lavender oil, is used to make incense sticks.
- **Hydrosol**, which is formed after distillation from the flowers, is used to make soaps and room fresheners.

Significance:

- It is in sync with the government policy of **doubling farm incomes** by 2022.
- It will **help in providing means of livelihood** to budding farmers and agri-entrepreneurs and give a boost to **Start-Up India campaign** and promote a spirit of entrepreneurship in the region.
 - Over **500 youth had taken benefit from the purple revolution** and augmented their income many-fold.

What is an Aroma Mission?

- **About:** The CSIR Aroma Mission is envisaged to **bring transformative change in the aroma sector** through desired interventions in the areas of agriculture, processing and product development for fuelling the growth of aroma industry and rural employment.
 - The mission will **promote the cultivation of aromatic crops** for essential oils that are in great demand by the aroma industry.
 - It is expected to **enable Indian farmers and the aroma industry to become global leaders in the production** and export of some other essential oils in the pattern of menthol mint.
 - It aims to **provide substantial benefits to the farmers** in achieving higher profits, utilization of waste lands and protection of their crops from wild and grazing animals.
- **Aroma Mission Phase-I and II:**
 - During Phase-I, CSIR helped **cultivate 6000 hectares of land** and covered 46 Aspirational districts across the country. Further, more than 44,000 people were trained.

Note:



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- On 9th February 2021 CSIR launched **Phase-II of Aroma Mission** in which it is proposed to engage over 45,000 skilled human resources and will benefit more than 75,000 farming families across the country.
- **Nodal Agencies:**
 - The nodal laboratory is **CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP)**, Lucknow.
- **Intended Outcomes:**
 - Bring about **5500 ha of additional area under captive cultivation of aromatic cash** crops particularly targeting rain-fed /degraded land across the country.
 - **Provide technical and infrastructural support for distillation** and values-addition to farmers/growers all over the country.
 - **Enabling effective buy-back mechanisms to assure remunerative prices** to the farmers/growers.
 - **Value-addition to essential oils and aroma ingredients** for their integration in global trade and economy.

Kisan Drones

Why in News?

Recently, the Prime Minister has **flagged off 100 Kisan drones** in different cities and towns of India to spray pesticides in farms across India.

- He also flagged off **"Drone Kisan Yatra"** to promote **chemical-free farming in India**.
 - The initiative was first announced in **Budget, 2022** to ensure inclusive drone development.
- Earlier, the government **banned the import of drones** to encourage their manufacturing in India (**Drone Shakti Scheme**).
- In January, 2022 revised guidelines of the **"Sub-Mission on Agricultural Mechanization" (SMAM)** scheme was issued in a move aimed at making **drones** more accessible to the farmers.

What are Kisan Drones?

- The Kisan drone will have an **unmanned tank filled with insecticides and nutrients**.
- The drones are expected to have a **high capacity of 5 to 10kg**.

- The drone will **spray the same amount of pesticide** on about one acre of land in just 15 minutes.
 - It will save time, will **require less effort and spraying will be done uniformly**.
- They will also be **used to carry vegetables, fruits, fish**, etc to the markets from the farms.
 - These items will be **supplied directly to the market with minimal damage**, consuming lesser time, resulting in more profits to farmers and fishermen.

How the use of Kisan Drones is a Significant Step?

- Kisan Drones will be **used to boost the agricultural sector** in the country.
- The use of Kisan Drones will be **promoted for crop assessment, digitization of land records** and spraying of insecticides and nutrients.
- It will usher in a **new edge revolution as high capacity drones** will be used to carry vegetables, fruits, fishes to the market directly from the farms.
- The development of the drone market in India will **generate fresh employment and new opportunities for the youth**.

What are the Associated Challenges?

- Experts in the agricultural sector are **skeptical about the benefits of drones** and how they will increase farmers' income.
 - There is not any sign of the government meeting its earlier promise of **doubling farmers' income by 2022**.
- The spraying of pesticides and fertilizers **may help in production, but it is the industries that will profit the most**.

How Drones Emerged in Recent Times?

- Until recently, there was a conception that drones were meant for **armed forces and fighting enemies**.
 - However, the **Kisan Drone Suvidha** has added a new chapter in the farming sector and it will prove to be a milestone for drone technology.
- **Garud aerospace** has set a goal of developing one lakh drones, which are being used for diverse purposes.
- Under the **"SWAMITVA scheme"**, land records are being documented through drone technology. Also medicines, vaccines are being supplied to various parts of the country and it is also being used for sprinkling pesticides etc on crops.

Note:



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Fintech Open Hackathon

Why in News

NITI Aayog, in association with PhonePe (Digital Payment Service Provider), will be hosting the **first-ever open-to-all Fintech Open Hackathon** that aims to showcase path-breaking solutions for the fintech ecosystem.

What is fintech ?

- Fintech describes an **emerging financial services sector in the 21st century**.
- Originally, the **term applied to technology applied to the back-end of established consumer and trade financial institutions**.
- Since the end of the first decade of the 21st century, the term has expanded to include **any technological innovation in the financial sector**, including innovations in financial literacy and education, retail banking, investment and even crypto-currencies like bitcoin.

What is a Fintech Open Hackathon ?

- The Hackathon will provide an opportunity for innovators, digital creators and developers from all over India **to think, ideate and code**. Winning teams stand to win exciting cash prizes **worth Rs 5 lakhs**.
- Participants at the hackathon need to use any open-data **APIs (Application Programme Interface)** like PhonePe Pulse along with frameworks such as **Account Aggregator** as a foundation **to power the following use cases**:
 - Alternate risk models for Lending, Insurance or Investments with focus on **financial inclusion**.
 - Innovative Products that use the power data signals for various demographics and Geos for broader adoption of financial services.
 - Improved Visualization and Derived intelligence based on the **Digital payments** data.
 - The final app that participants come up with must incorporate one of the above.
- Participants can use data sources like **PhonePe Pulse, the Open Government Data Platform and RBI (Reserve Bank Of India) reports on payments to build** on their submission.

- In addition, they can access any other **open data platforms that they are aware of along with the Setu AA Sandbox or the Setu Payments Sandbox to develop their hacks**.
- By the end of the event, participants will be required to present a working prototype of their hack to the judges, post which each hack will be judged based on certain parameters.

New India Literacy Programme

Why in News?

Recently, a new scheme **“New India Literacy Programme”** for the period FYs 2022-2027 to cover all the aspects of Adult Education to align with **National Education Policy 2020** has been approved.

- It is also in line with **Budget 2021-22**, which announced that increased access to resources, online modules covering the entire gamut of adult education will be introduced.
- The estimated total outlay of the scheme is Rs.1037.90 crore which includes Central share of Rs. 700 crore and State share of Rs. 337.90 crore respectively for the FYs 2022 -27.
- Term **“Adult Education”** will be replaced by **“Education For All”**.

What is the objective of the New India Literacy Programme?

- To **impart not only foundational literacy and numeracy** but also to cover other components which are necessary for a citizen of the 21st century.
- Other components include:
 - **Critical life skills** (including financial literacy, **digital literacy**, commercial skills, health care and awareness, child care and education, and family welfare).
 - **Vocational skills development** (with a view towards obtaining local employment)
 - **Basic education** (including preparatory, middle, and secondary stage equivalency);
 - **Continuing education** (including engaging holistic adult education courses in arts, sciences, technology, culture, sports, and recreation, as well as other topics of interest or use to local learners, such as more advanced material on critical life skills).

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How will the Scheme be Implemented?

- The scheme will be implemented **through volunteerism through online mode.**
 - The training, orientation, workshops of volunteers, may be organized through face-to-face mode. All material and resources shall be provided digitally.
- **School will be Unit** for implementation of the scheme.
 - Schools to be used for conducting surveys of beneficiaries and Voluntary Teachers.

Who will be Covered under the Scheme?

- **Non-literates** of the age of 15 years and above in all states/UTs in the country.
- The target is **5 (five) crore learners @ 1.00 crore per year** by using “**Online Teaching, Learning and Assessment System (OTLAS)**” in collaboration with National Informatics Centre, **NCERT** and NIOS.

Why is such a Scheme Needed?

- As per **Census 2011**, the absolute number of non-literates of the country in 15 years and above age group is 25.76 crore (Male 9.08 crore, Female 16.68 crore).
- Also, in consideration of the progress of persons certified as literates being to the tune of 7.64 crore under the **Saakshar Bharat programme** implemented during 2009-10 to 2017-18, it is estimated that currently around **18.12 crore adults are still non-literate in India.**

What are the other Initiatives taken in this Direction?

- **National Skill Development Corporation (NSDC):** It aims to **promote skill development** by catalyzing the creation of large, quality and for-profit vocational institutions. It acts as a catalyst in skill development by providing funding to enterprises, companies, and organizations that provide skill training.
- **Digital India Programme:** It pulls together many existing schemes by restructuring and re-focusing them and then implementing them in a synchronized manner.
- **Pradhan Mantri Gramin Digital Saksharta Abhiyan:** It is one of the largest initiatives of the country with the target of making citizens digitally literate.
- **National Digital Literacy Mission:** It aims to empower at least one person per household with crucial digital literacy skills by 2020.

- **Samagra Shiksha:** It is an integrated scheme for school education extending from pre-school to class XII to ensure inclusive and equitable quality education at all levels of school education.

Minority Educational Institutions and Right to Education

Why in News?

Recently, the Supreme Court has refused to entertain a petition questioning the exclusion of madrasas and Vedic schools (**Minority Educational Institutions (MEI)**) from the ambit of the **Right of Children to Free and Compulsory Education (RTE) Act 2009.**

- The exclusion of these institutions was specifically inserted into the 2009 Act by an amendment of August 2012.
- Earlier, **a report by the NCPCR** showed the disproportionate number of minority institutions or dominance of non-minority category in Minority institutions.

What are Legal Provisions regarding MEI and RTE?

- **Right to Education under Article 21A:** It describes modalities of the importance of free and compulsory education for **children aged between 6-14 years** in India under Article 21 (A) of the Constitution of India (86th Amendment).
 - The Act mandates **25% reservation for disadvantaged sections** of the society where disadvantaged groups include:
 - SCs and STs
 - Socially Backward Class
 - Differently abled
- **Article 29 and 30 of Indian Constitution** contain provisions securing rights of **minorities** and minority-run institutions.
 - Minority institutions have the fundamental right under Article 30 of the Constitution **to establish and administer their educational institutions according to their choice.**

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- In this context, **RTE was amended to add in Sections 1(4) and 1(5) of the Act.**
 - **Section 1(5)** of the RTE Act states, “Nothing contained in this Act shall apply to madrasas, Vedic pathshalas and educational institutions primarily imparting religious instruction.
 - **Section 1(4)** of the RTE states that “Subject to the provisions of Articles 29 and 30 of the Constitution, the provisions of this Act shall apply to conferment of rights on children to free and compulsory education.

What are the Arguments of Petitioners?

- **Avoiding Religious Connotation in Formative Years:** Sections 1(4) and 1(5) fail to consider that children aged between 6 and 14 years are in their formative years and such education brings about a religious connotation in the mind of children.
- **Level Playing Field:** Introduction of common syllabus and common curriculum would enable every child to be placed on a level playing field for the challenges of the future.
 - Right of a child should not be restricted only to free education, but must be extended to have equal quality education without discrimination on the ground of child’s social economic and cultural background.
- **Adhering to Constitutional Values:** It would meaningfully contribute in achieving the great golden goals as set out in the preamble, particularly fraternity, unity and national integration.
- Therefore, the court may declare Sections 1(4) and 1(5) of the 2009 Act arbitrary and irrational.

First Information Report (FIR)

Why in News?

An **First Information Report (FIR)** is a very important document as it sets the **process of criminal justice in motion**. It is only after the FIR is registered in the police station that the police take up **investigation of the case**.

What is a FIR?

- First Information Report (FIR) is a **written document** prepared by the police when they receive information about the commission of a **cognizable offence**.

- It is a report of information that reaches the police first in point of time and that is why it is called the **First Information Report**.
- It is generally a complaint lodged with the police by the **victim of a cognizable offence or by someone on his/her behalf**. Anyone can report the commission of a cognizable offence either orally or in writing.
 - The term FIR is **not defined** in the **Indian Penal Code (IPC), Code of Criminal Procedure (CrPC), 1973**, or in any other law.
 - However, in police regulations or rules, information recorded under Section **154 of CrPC** is known as First Information Report (FIR).
- There are **three important elements** of an FIR:
 - The information must relate to the **commission of a cognizable offence**,
 - It should be given in **writing or orally** to the head of the police station,
 - It must be written down and **signed by the informant**, and its key points **should be recorded in a daily diary**.

What happens after an FIR is filed?

- The police will investigate the case and will **collect evidence in the form of statements** of witnesses or other scientific materials.
 - They can arrest the alleged persons as per law.
- If there is sufficient evidence to corroborate the allegations of the complainant, then a **charge sheet will be filed**. Or else, a **Final Report** mentioning that no evidence was found will be filed in court.
- If it is found that no offence has been committed, a **cancellation report** will be filed.
- If no trace of the accused persons is found, an **‘untraced’ report** will be filed.
- However, if the court does not agree with the investigation report, it can order further investigation.

What if the police refuse to register an FIR?

- Under **Section 154(3) CrPC**, if any person is aggrieved by the refusal on the part of the officer in charge of a police station to register an FIR, she can send the complaint to the **Superintendent of Police/DCP concerned**.

Note:



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- Who, if satisfied that such information discloses the commission of a cognizable offence, will either investigate the case, or direct an investigation by a subordinate police officer.
- If no FIR is registered, the aggrieved persons can file a complaint under Section 156(3) CrPC **before a concerned court** which, if satisfied that a cognizable offence is made out from the complaint, will direct the police to register an FIR and conduct an investigation.

What is a Zero FIR?

- When a police station receives a complaint regarding an alleged offence that has been committed in the **jurisdiction of another police station**, it registers an FIR, and then **transfers it to the concerned police station** for further investigation.
 - This is called a **Zero FIR**.
- **No regular FIR number is given.** After receiving the Zero FIR, the concerned police station registers a fresh FIR and starts the investigation.

What is Cognizable Offence & Non-cognizable Offence?

- **Cognizable Offence:** A cognizable offence is one in which the police may arrest a person without warrant.
 - They are authorised to start investigation into a cognizable case on their own and do not require any orders from the court to do so.
- **Non-cognizable Offence:** A non-cognizable offence is an offence in which a police officer has no authority to arrest without warrant.
 - The police cannot investigate such an offence without the court's permission.
 - In case of non-cognizable offences, an FIR under **Section 155 CrPC** is registered.
 - The complainant will be asked to approach a court for an order. The court may then direct the police to conduct an investigation on the complaint.

What is the difference between a complaint and an FIR?

- The CrPC defines a "complaint" as "any allegation made orally or in writing to a Magistrate, with a view to his taking action under this Code, that some person, whether known or unknown, has committed an offence, but **does not include a police report.**"

- However, an FIR is the document that has been **prepared by the police after verifying the facts of the complaint.** The FIR may contain details of the crime and the alleged criminal.
- If, on the basis of a complaint, it appears that a cognizable offence has been committed, then an FIR under **Section 154 CrPC will be registered**, and police will open an investigation. If no offence is found, the police will close the inquiry.

Legislation for Refugees

Why in News?

The **National Human Rights Commission (NHRC)** recently held a discussion on "protection of the basic human rights of refugees and asylum seekers in India".

- Many participants raised the issue of **India not having a specific law for refugees and asylum-seekers.**
- The discussion noted that, though **India has not signed the United Nations Refugee Convention, 1951**, the refugees and asylum seekers are entitled to the rights in **Articles 14 (Right to Equality), 20 (Protection with Respect to Conviction of Offences) and 21 (Right to Life) of the Constitution.**

What is India's Refugee Policy?

- India lacks **specific legislation** to address the problem of refugees, in spite of their increasing inflow.
- India is **not a party to the 1951 Refugee Convention and its 1967 Protocol**, the key legal documents pertaining to refugee protection.
- Moreover, the **Foreigners Act, 1946**, fails to address the peculiar problems faced by refugees as a class.
 - It also gives unbridled power to the **Central government to deport any foreign citizen.**
- In spite of not being a party to the 1951 Refugee Convention and its 1967 Protocol, India has had a stellar record on the issue of refugee protection.
 - India has a moral tradition for **assimilating foreign people and culture.**
- Further, the constitution of India also respects the life, liberty, and dignity of human beings.
 - The Supreme Court in the **National Human Rights Commission vs. State of Arunachal Pradesh (1996)** held that "while all rights are available to citizens, persons including foreign citizens are entitled to the right to equality and the right to life, among others."

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- Further, **Article 21 of the Constitution** encompasses the **right of non-refoulement**.
 - Non-refoulement is the principle under international law which states that a **person fleeing persecution from his own country should not be forced to return** to his own country.

Why Hasn't India Framed a Law on Refugees Yet?

- **Refugees vs Immigrants:** In the recent past, many people from neighboring countries tend to illegally immigrate to India, not because of state persecution but in search of better economic opportunities in India.
 - While the reality is that much of the debate in the country is **about illegal immigrants, not refugees**, the two categories tend to get bunched together.
- **Misuse of Law:** Such a law could be misused by **anti-nationals, terrorists and criminal elements** and it would cause a financial burden on the country.
- **Open Scope of Maneuver:** Absence of legislation has allowed India to keep its options open on the question of refugees. The government can declare any set of refugees as illegal immigrants.
 - This was the case that has happened with **Rohingya** (They are stateless, Indo-Aryan ethnic group who reside in **Rakhine State, Myanmar**), despite the **UNHCR verification**, the government decided to deal with them as trespassers under the **Foreigners Act or the Indian Passport Act**.

Why is there a Need for a law on Refugees?

- **Long-term Practical Solution:** India frequently experiences a large influx of refugees. Therefore, a long-term practical solution requires that India make a shift from its **charitable approach to a rights-based approach** by enacting a national refugee law.
- **Adhering to Human Rights:** A national refugee law will **streamline refugee- status** determination procedures for all kinds of refugees and will guarantee them the rights they have under international law.
- **Addressing Security Concerns:** It could sufficiently address **India's security concerns**, while at the same time **ensuring that there is no unlawful detention** or deportation carried out in the garb of national-security concerns.
- **Inconsistency in the Treatment of Refugees:** The bulk of the refugee population in India originates from Sri Lanka, Tibet, Myanmar and Afghanistan.

- However, only Tibetan and Sri Lankan refugees are recognized as such by the government. They are provided protection and assistance directly through specific policies and rules formulated by the government.

Refugee	<ul style="list-style-type: none"> ➤ A refugee is a person who has fled their own country because they are at risk of serious human rights violations and persecution there. ➤ The risks to their safety and life were so great that they felt they had no choice but to leave and seek safety outside their country. ➤ This is because their own government cannot or will not protect them from those dangers. ➤ Refugees have a right to international protection.
Asylum-seeker	<ul style="list-style-type: none"> ➤ An asylum-seeker is a person who has left their country and is seeking protection from persecution and serious human rights violations in another country. <ul style="list-style-type: none"> ○ However, he/she hasn't yet been legally recognized as a refugee and is waiting to receive a decision on their asylum claim. ➤ Seeking asylum is a human right. ➤ This means everyone should be allowed to enter another country to seek asylum.
Migrant	<ul style="list-style-type: none"> ➤ There is no internationally accepted legal definition of a migrant. ➤ Migrants can be understood to be people staying outside their country of origin, who are not asylum-seekers or refugees. ➤ Some migrants leave their country because they want to work, study or join family, for example. ➤ Others feel they must leave because of poverty, political unrest, gang violence, natural disasters or other serious circumstances that exist there.

Note:

Way Forward

- **Revision of Model Laws by Expert Committee:** Model laws on asylum and refugees that were drafted by the **National Human Rights Commission (NHRC)** decades ago but not implemented by the government could be revised by an expert committee.
 - If such laws are enacted, it would give legal sanctity and uniformity, ensuring the protection of human rights.
- **Law can Act as a Deterrent:** If India had domestic legislation regarding refugees, it could have deterred any oppressive government in the neighborhood to persecute their population and make them flee to India.

Improving Pradhan Mantri Fasal Bima Yojana Scheme

Why in News?

Recently, **Maharashtra** has signaled that it may opt out of **Pradhan Mantri Fasal Bima Yojana Scheme**.

- Andhra Pradesh, Jharkhand, Telangana, Bihar, Gujarat, Punjab and West Bengal - all predominantly agriculture states - have already opted out of the scheme.

What are the Major Provisions of Pradhan Mantri Fasal Bima Yojana (PMFBY)?

- Launched in 2016 and is being administered by the **Ministry of Agriculture and Farmers Welfare**.
 - It replaced the National Agricultural Insurance Scheme (NAIS) and Modified National Agricultural Insurance Scheme (MNAIS).
- **Aim:** To provide a comprehensive insurance cover against the failure of the crop thus helping in stabilising the income of the farmers.
- **Scope:** All food & oilseed crops and annual commercial/horticultural crops for which past yield data is available.
- **Premium:** The prescribed premium is 2% to be paid by farmers for all Kharif crops and 1.5% for all rabi crops. In the case of annual commercial and horticultural crops, the premium is 5%.
 - Premium cost over and above the farmer share was equally subsidized by States and GoI.
 - However, GoI shared 90% of the premium subsidy for North Eastern States to promote the uptake in the region.

- **Implementation:** By empanelled general insurance companies. The selection of the Implementing Agency (IA) is done by the concerned State Government through bidding.
- **Revamped PMFBY:** The revamped PMFBY is often called **PMFBY 2.0**, it has the following features:
 - **Completely Voluntary:** Enrolment 100% voluntary for all farmers from 2020 Kharif.
 - Earlier, it was compulsory for loanee farmers availing Crop Loan/Kisan Credit Card (KCC) account for notified crops.
 - **Limit to Central Subsidy:** The Centre has decided to limit the PMFBY premium rates - against which it would bear 50% of the subsidy - to a maximum of 30% in un-irrigated and 25% in irrigated areas.
 - **More Flexibility to States:** The government has given the flexibility to states/UTs to implement PMFBY and given them the option to select any number of additional risk covers/features.
 - **Investing in ICE Activities:** Insurance companies have to now spend 0.5% of the total premium collected on Information, Education And Communication (IEC) activities.

What are the Issues in PMFBY?

- **Financial Constraints of States:** The financial constraints of the state governments and low claim ratio during normal seasons are the major reasons for non-implementation of the Scheme by these States.
 - States are unable to deal with a situation where insurance companies compensate farmers less than the premium they have collected from them and the Centre.
 - The State governments failed to release funds on time leading to delays in releasing insurance compensation.
 - This defeats the very purpose of the scheme which is to provide timely financial assistance to the farming community.
- **Claim Settlement Issues:** Many farmers are dissatisfied with both the level of compensation and delays in settlement.
 - The role and power of Insurance companies is significant. In many cases, it didn't investigate losses due to a localised calamity and, therefore, did not pay the claims.

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- **Implementation Issues:** Insurance companies have shown no interest in bidding for clusters that are prone to crop loss.
 - Further, it is in the nature of the insurance business for entities to make money when crop failures are low and vice-versa.
- **Identification Issues:** Currently the PMFBY scheme doesn't distinguish between large and small farmers and thus raises the issue of identification. Small farmers are the most vulnerable class.

Public Order

Why in News?

Recently, the **Karnataka High Court** is hearing a challenge to the constitutionality of the state government's ban on students wearing a **hijab in educational institutions**.

- The case was regarding the arguments on whether the state can justify the ban on the ground that it violates 'public order'.

What is Public Order?

- Public order is normally **equated with public peace and safety**.
- Public order is one of the three grounds on which the **state can restrict freedom of religion**.
 - **Article 25** of the Constitution guarantees to all persons the right to freedom and conscience and the right freely to profess, practise and propagate religion **subject to public order, morality and health**.
- Public order is also one of the grounds to restrict **free speech and other fundamental rights**.
- According to **State List** (List 2) of the **Seventh Schedule of the Constitution**, the power to legislate on aspects of public order rests with the states.

How has Public order been Interpreted by Courts?

- What affects public order is **contextual and is determined by the state**.
- However, the courts have broadly interpreted it to mean something that **affects the community at large and not a few individuals**.
- In **Ram Manohar Lohia vs State of Bihar (1965)**, the **Supreme Court** held that in the case of 'public order', **the community or the public at large have to be affected by a particular action**.

- The **contravention of law** (to do something that is forbidden by the law or rule) always affects order but before it can be said to affect public order, it must affect the community or the public at large.
 - One has to imagine **three concentric circles**, the **largest representing 'law and order'**, the next representing 'public order' and the **smallest representing 'security of State'**.

How Does it relate to the Hijab Ban?

- According to the government order issued on February 5 under the **Karnataka Education Act, 1983**, "**public order**" is one of the reasons for not allowing students to wear a headscarf in educational institutions **along with "unity" and "integrity"**.
 - Previously, several courts have **given orders on prescription of dress code for minorities** in public institutions.
- **Petitioners Arguments:** The petitioners have argued that public order is not every breach of law and order.
 - Public order is an aggravated form of disturbance that is much higher than a law and order issue.
 - The petitioners have asked the state to show how the mere wearing of a hijab by students could constitute a public order issue.
- **Karnataka Government' Stand:** Karnataka's Advocate General has argued that the government order makes no mention of "public order" and that the petitioner's reading of the order could be an error in translation.
 - The order, in Kannada, uses the words "**sarvajanika suvayavasthe**".

Green Hydrogen/Green Ammonia Policy

Why in News?

Recently, the **Ministry of Power** has notified **Green Hydrogen/Green Ammonia Policy** for production of Green Hydrogen or Green Ammonia using renewable sources of energy.

- **National Hydrogen Mission** launched in 2021 aims to aid the government in meeting its climate targets and making India a green hydrogen hub.

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What are the Provisions of the Green Hydrogen/Green Ammonia Policy?

- Under the policy, the government is offering to set up **manufacturing zones for production**, connectivity to the **ISTS (Inter-State Transmission System)** on priority basis, and free transmission for 25 years if the production facility is commissioned before June 2025.
 - This means that a **green hydrogen producer will be able to set up a solar power plant** in Rajasthan to supply renewable energy to a green hydrogen plant in Assam and would not be required to pay any **inter-state transmission charges**.
 - Besides, **producers will be allowed to set up bunkers near ports** for storage of green ammonia for export by shipping.
- **Production target** has also been raised **five times** from 1 million tonnes (m) to 5 mt by 2030.
 - In October, 2021 it was announced that **India is targeting initially around 1 million tonnes** annual green hydrogen production by 2030.
- Manufacturers of Green hydrogen and ammonia are allowed to **purchase renewable power from the power exchange** or set up **Renewable Energy (RE) capacity** themselves or through any other developer, anywhere.
- Further, it **provides facility for producers to bank any surplus renewable energy generated with discoms** (power distribution companies) for upto 30 days and use it as required.
- **Discoms may also procure renewable energy to supply green hydrogen producers but will be required to do so at a concessional rate** which will only include the cost of procurement, wheeling charges and a small margin as determined by the state commission, under the new policy.
 - Such procurement **would also count towards a state's Renewable Purchase Obligation (RPO)** under which it is required to procure a certain proportion of its requirements from renewable energy sources.
- To ensure **ease of doing business** a **single portal for carrying out** all the activities including statutory clearances in a time bound manner will be set up by MNRE (Ministry of New and Renewable Energy).

What is Green Hydrogen?

- **About:**
 - It is produced by **splitting water into hydrogen and oxygen** using an electrolyzer powered by renewable energy sources such as wind and solar.
 - The fuel can be a **game-changer for the energy security of India**, which imports 85% of its oil and 53% of gas requirements.
 - To promote clean fuels, India is considering making it mandatory for fertilizer plants and oil refineries to purchase green hydrogen.
- **Significance:**
 - Green hydrogen energy is vital for India to meet its **Nationally Determined Contribution (INDC)** Targets and ensure regional and national energy security, access and availability.
 - Green Hydrogen can act as an **energy storage option**, which would be essential to meet intermittencies (of renewable energy) in the future.
 - In terms of mobility, for long distance mobilisations for either urban freight movement within cities and states or for passengers, Green Hydrogen can be used in railways, large ships, buses or trucks, etc.
 - Hydrogen has the potential to be the key renewable target **in supporting infrastructure as well**.

What is Green Ammonia?

- **About:**
 - Ammonia is a chemical which is **used mainly in the manufacture of nitrogenous fertilizers**, like urea and ammonium nitrate, but can be put to other uses too, such as to run engines.
 - Green ammonia production is where the process of making **ammonia is 100% renewable and carbon-free**.
 - One way of making green ammonia is by using hydrogen from water electrolysis and nitrogen separated from the air. These are then fed into the **Haber process (also known as Haber-Bosch)**, all powered by sustainable electricity.
 - In the Haber process, **hydrogen and nitrogen are reacted together at high temperatures and pressures** to produce ammonia, NH_3 .

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➤ Significance:

- Green ammonia is intended to be used in the production of **carbon-neutral fertiliser products**, decarbonising the food value chain, and also has potential as a future climate-neutral shipping fuel.
- Green ammonia production **makes use of renewable energy sources** such as hydro-electric, solar power or wind turbines.
- Green ammonia is crucial to **tackle the existential challenges of producing enough food** to feed a growing global population and generating CO₂-free energy.

International Mother Language Day

Why in News

Every year, the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** celebrates 21st February as **International Mother Language Day** to promote mother tongue-based multilingual education.

- The **theme of 2022** is: **"Using technology for multilingual learning: Challenges and opportunities"**, it focuses on the potential role of technology to advance multilingual education and support the development of quality teaching and learning for all.
- The world has **over 7,000 languages** whereas **India alone has about 22 officially recognized languages**, 1635 mother tongues, and 234 identifiable mother tongues.

What is International Mother Language Day ?

- UNESCO declared 21st February as **International Mother Language Day** in 1999 and the World has been **celebrating the same since 2000**.
- The day also commemorates **a long struggle by Bangladesh to protect its mother language Bangla**.
- The resolution to mark 21st February as the International Mother Language Day was suggested by **Rafiqul Islam, a Bangladeshi living in Canada**.
 - He proposed the said date to commemorate the 1952 killings in Dhaka during the **Bangla Language Movement**.
- The aim is to protect the **diverse culture and intellectual heritage of different regions** of the world.

- According to the **United Nations (UN)**, every two weeks, a language disappears and the world loses an entire cultural and intellectual heritage.
- Due to **globalisation**, the rush for learning foreign languages for better job opportunities is a major reason behind the disappearance of mother languages.

What are Global Efforts for Protection of Languages ?

- The UN has designated the period between 2022 and 2032 as the **International Decade of Indigenous Languages**.
 - Earlier, the **United Nations General Assembly** had proclaimed 2019 as the International Year of Indigenous Languages (IYIL).
- The **Yuelu Proclamation**, made by UNESCO at Changsha (China) in 2018, plays a central role in guiding the efforts of countries and regions around the world to protect linguistic resources and diversity.

What are India's Initiatives to Protect Mother Tongues ?

- The recently announced **National Education Policy 2020** has given maximum attention to the development of mother tongues.
- The Commission for Scientific and Technical Terminology (CSTT) is providing **publication grants towards the publications of University Level Books** in regional languages.
 - It was established in 1961 to evolve technical terminology in all Indian Languages.
- The **National Translation Mission (NTM)** is being **implemented** through the Central Institute of Indian Languages (CIIL), Mysore under which the text books of various subjects prescribed in Universities and Colleges are being translated in all languages of the Eighth Schedule.
- **"Protection and Preservation of Endangered Languages"** scheme for conservation of threatened languages.
- The **University Grants Commission (UGC)** also promotes regional languages in higher education courses in the country and supports nine Central Universities under the scheme "Establishment of Centre for Endangered Languages in Central Universities".

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- Other Initiatives by the Government of India include the **Bharatvani project** and the proposed setting up of a Bharatiya Bhasha Vishwavidyalaya (BBV).
- Recently, an initiative **Namath Basai** by Kerala State Government has proved to be very beneficial in educating children from tribal areas by adopting vernacular languages as medium of instruction.
- Google's Project Navlekha uses technology to protect mother language. The project is aimed at increasing the online content in Indian local languages.

What are the Related Constitutional and Legal Provisions ?

- **Article 29 of the Constitution** (Protection of interests of minorities) gives all citizens right to conserve their language and **prohibits discrimination on the basis of language**.
- **Article 120** (Language to be used in Parliament) provides for use of Hindi or English for transactions of Parliament but gives the right to members of Parliament to **express themselves in their mother tongue**.
- **Part XVII** of the Indian Constitution deals with the **official languages in Articles 343 to 351**.
 - **Article 350A (Facilities for instruction in mother-tongue at primary stage)** provides that it shall be the endeavour of every State and of every local authority within the State to provide adequate facilities for **instruction in the mother-tongue at the primary stage of education** to children belonging to linguistic minority groups.
 - **Article 350B (Special Officer for linguistic minorities)**: The President should appoint a **special officer for linguistic minorities** to investigate all matters relating to the constitutional safeguards for linguistic minorities and to report to him.
 - The President should place all such reports before the Parliament and send them to the state government concerned.
- **The Eighth Schedule** recognises following 22 languages: Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.
- **Right to Education (RTE) Act, 2009** says that the medium of instruction shall, as far as practicable, be in a child's mother tongue.

Enforcing Fundamental Duties

Why in News?

Recently, the **Supreme Court** issued a notice to the Centre and states to respond to a **petition to enforce the Fundamental Duties of citizens**, including patriotism and unity of the nation, **through comprehensive, well-defined laws**.

- Fundamental Duties are specified under **Article 51A (Part IVA)** of the Constitution, they **strive to uphold the country's ideals and contribute to its growth and betterment**.

What are Fundamental Duties?

- The idea of Fundamental Duties is inspired by the **Constitution of Russia (erstwhile Soviet Union)**.
- These were incorporated in Part IV-A of the Constitution by the **42nd Constitutional Amendment Act, 1976** on the recommendations of the **Swaran Singh Committee**.
- Originally **10 in number**, one more duty was added through the **86th Constitutional Amendment Act, 2002**.
- Like the **Directive Principles of State Policy**, the Fundamental duties are also **non-justiciable in nature**.
- **List of Fundamental Duties:**
 - To abide by the **Constitution and respect its ideals and institutions**, the **National Flag and the National Anthem**;
 - To cherish and follow the **noble ideals that inspired the national struggle** for freedom;
 - To uphold and protect the **sovereignty, unity and integrity of India**;
 - To defend the **country and render national service** when called upon to do so;
 - To promote **harmony and the spirit of common brotherhood** amongst all the people of India transcending **religious, linguistic and regional or sectional diversities** and to renounce practices derogatory to the dignity of women;
 - To value and **preserve the rich heritage** of the country's composite culture;
 - To protect and improve the **natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures**;
 - To develop **scientific temper, humanism** and the spirit of inquiry and reform;

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- To safeguard **public property and to abjure violence**;
- To strive towards **excellence in all spheres of individual and collective activity** so that the nation constantly rises to higher levels of endeavour and achievement; and
- To provide opportunities for **education to his child or ward between the age of six and fourteen years** (added by the 86th Constitutional Amendment Act, 2002).

What is the Significance of Fundamental Duties?

- **Rights and duties are correlative.**
 - The Fundamental Duties are intended to serve as a **constant reminder to every citizen** that while the Constitution specifically conferred on them **certain fundamental rights**, it also requires citizens to observe **basic norms of democratic conduct and democratic behaviour**.
- These **serve as a warning to the people against the anti-social activities** that disrespect the nation like burning the flag, destroying the public property or disturbing public peace.
- These **help in the promotion of a sense of discipline and commitment towards the nation**. They help in realising national goals by the active participation of citizens rather than mere spectators.
- **It helps the Court in determining the constitutionality of the law**. For instance, any law passed by the legislatures, when taken to Court for constitutional validity of the law, if it is giving force to any Fundamental Duty, then such law would be taken as reasonable.

What is the Need to Legally Enforce Fundamental Duties?

- Since time immemorial the emphasis in **Indian society in accordance with the dictates of the ancient scriptures** has been on the individual's '**Kartavya**'.
 - This is the performance of one's duties towards society, the country and especially towards one's parents.
- The **Gita and the Ramayana** enjoin people to perform their duties without caring for their rights.
- In the **erstwhile Soviet Union Constitution**, the rights and duties were placed on the same footing.
 - There is a pressing need to **enforce and implement at least some of the fundamental duties**.

- For instance, to uphold and protect sovereignty, unity and integrity of India, to defend the country and render national service when called upon to do so and to disseminate a sense of nationalism and to promote the spirit of patriotism to uphold the unity of India.
- These fundamental duties assume significance after the **emergence of China as a superpower**.
- The **Verma Committee on Fundamental Duties of the Citizens (1999)** identified the existence of legal provisions for the implementation of some of the Fundamental Duties. The committee provided with the provisions like:
 - No person can disrespect the **National flag, Constitution of India and the National Anthem under the Prevention of Insults to National Honour Act, 1971**.
 - The **Protection of Civil Rights Act (1955)** provided for punishments in case of any offence related to caste and religion.
- It was argued in the petition that the **non-adherence of the Fundamental Duties** has a direct bearing upon the **Fundamental Rights guaranteed under Articles 14 (Equality before Law), 19 (Protection of certain rights regarding freedom of speech) and 21 (Right to Life) of the Constitution of India**.
 - For example, the need to enforce fundamental duties arises due to the **new illegal trend of protest by protestors** in the garb of freedom of speech and expression.

What is the Supreme Court's Stand on Fundamental Duties?

- The Supreme Court's **Ranganath Mishra judgment 2003** held that fundamental duties should not only be enforced by **legal sanctions but also by social sanctions**.
- In **AIIMS Students Union v. AIIMS 2001**, it was held by the Supreme Court that **fundamental duties are equally important like fundamental rights**.
 - Though fundamental duties are not enforceable like fundamental rights they cannot be overlooked as duties in Part IV A.
 - They are prefixed by the **same word fundamental** which was prefixed by the founding fathers of the Constitution to 'right' in Part III.

Note:



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Gobar-Dhan Plant: 2nd Phase of SBM-U

Why in News?

Recently, the Prime Minister has inaugurated “Gobar-Dhan (Bio-CNG) Plant” in Indore with the aim of removing lakhs of tonnes of garbage that is occupying thousand acres of land and causing air and water pollution leading to many diseases.

- It has been established under the **second phase of Swachh Bharat Mission (SBM-U 2.0)**.
- The plant is **based on zero landfill models**, whereby no rejects would be generated. Additionally, the project is expected **to yield multiple environmental benefits**, viz. reduction in greenhouse gas emissions, providing green energy along with organic compost as fertilizer.

What are the Key Points of Swachh Bharat Mission-Urban 2.0?

- **About:**
 - SBM-U 2.0 was announced in **Budget 2021-22**, as the continuation of SBM-U first phase.
 - The government is trying to **tap safe containment, transportation, disposal of fecal sludge, and septage from toilets**.
 - SBM-U first phase was launched on **2nd October 2014** aiming at making urban India **Open Defecation Free (ODF)** and achieving 100% scientific management of municipal solid waste. It lasted till October 2019.

- It will be implemented over five years from **2021 to 2026** with an outlay of **Rs.1.41 lakh crore**.
- The Mission is being implemented under the overarching principles of “**waste to wealth**”, and “**circular economy**”.

➤ Aim:

- It focuses on source segregation of garbage, reduction in **single-use plastic** and air pollution, by effectively managing waste from construction and demolition activities and **bioremediation of all legacy dump sites**.
- Under this mission, all wastewater will be treated properly before it is discharged into water bodies, and the government is trying to make maximum reuse a priority.

➤ Mission outcomes:

- All statutory towns will become **ODF+ certified** (focuses on toilets with water, maintenance and hygiene)
- All statutory towns with less than 1 lakh population will become **ODF++ certified** (focuses on toilets with sludge and septage management).
- 50% of all statutory towns with less than 1 lakh population will become **Water+ certified** (aims to sustain toilets by treating and reuse of water).
- All statutory towns will be at least **3-star Garbage Free rated** as per MoHUA's Star Rating Protocol for Garbage Free cities.
- Bioremediation of all legacy dumpsites.



Note:

Economic Scenario

Highlights

- Animation, Visual Effects, Gaming and Comics (AVGC) Sector
- Fair and Remunerative Price (FRP)
- Initial Public Offering (IPO)
- India Bans Import of Foreign Drones
- Non Fungible Tokens

Animation, Visual Effects, Gaming and Comics (AVGC) Sector

Why in News?

In the **Budget 2022-23**, the government announced to set up 'Animation, Visual Effects, Gaming and Comics' (AVGC) task force to "build domestic capacity to serve Indian markets and global demand."

- Earlier, the Karnataka High Court delivered a **judgement striking down major portions of the Karnataka Police (Amendment) Act, 2021** which banned online gambling and skill-based gaming platforms.
- In 2021, the Ministry of Information and Broadcasting in collaboration with IIT Bombay decided to form a **Centre of Excellence in gaming and other related areas**.

What is the importance of the AVGC Sector?

- **Play Larger Role in Meeting Global Demand:**
 - It will **prepare India to play a larger role in building Metaverse**, help in catering to the Indian market and in meeting global demand.
 - A **metaverse is a network of 3D virtual worlds** focused on social connection and it can be defined as a simulated digital environment that uses **Augmented Reality (AR)**, **Virtual Reality (VR)**, and **blockchain**, along with concepts from social media, to **create spaces for rich user interaction mimicking the real world**.
 - It **could also open up new avenues for players and platforms as well as formalise game art education** since most in the industry learn experientially.

Contribution in Revenue:

- The number of gamers in India grew to **about 400 million by mid of 2020** from about 250 million gamers at the end of fiscal year 2018-19.
- This makes it the **second largest base of online gamers** in the world after China.
- Online casual gaming, which forms a large chunk of the total gaming revenue, is projected to grow at a **Compound Annual Growth Rate (CAGR)** of about 29% over the next four years to **reach revenues of Rs 169 billion by FY25**.

Employment Generation:

- The potential for job opportunities in the AVGC sector is humongous.
- The number would vary between around **70,000 to 1.2 lakh job opportunities** for the entire space.

What are issues with the AVGC Sector?

No Formalisation:

- The AVGC sector is **growing rapidly** but there's a void for good programmers, graphic designers or esports managers because there are **no formal gaming courses**.

Regulatory Issues:

- Regulatory clarity continues to be a bug bear for the space as **various State governments have dragged these companies to court** over allegedly being akin to gambling.
 - This is **something that these companies have vehemently denied** saying they are **not 'games of chance' but rather 'games of skill'**.

Note:



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Fair and Remunerative Price (FRP)

Why in News?

Recently, **Maharashtra Government** issued a government resolution which will **allow sugar mills to pay the basic Fair and Remunerative Price (FRP) in two tranches**.

What are the changes in the government resolution?

- The first installment would have to be paid within **14 days of delivery of cane**, and would be as per the average recovery of the district.
- Farmers would get the **second installment within 15 days of the closure of the mill** after calculation of the final recovery, which would take into account the sugar produced, and the ethanol produced from 'B heavy' or 'C' molasses.
- Thus, **instead of relying on last season's FRP**, farmers would be paid as per the current season's recovery.

Why are farmers in Maharashtra protesting?

- Farmers argue that this method would **impact their incomes**. They point out that while FRP will be paid in installments, and will **depend on an unknown variable**, their bank loans and other expenses are expected to be paid for as usual.
- Also, farmers mostly require a **lump sum at the beginning of the season (October-November)**, because their next crop cycle depends on it.

What is the FRP?

- FRP is the **price declared by the government**, which mills are **legally bound** to pay to farmers for the cane procured from them.
 - Mills have the **option of signing an agreement with farmers**, which would allow them to pay the FRP in installments.
 - **Delays in payment can attract an interest** up to 15% per annum, and the sugar **commissioner can recover unpaid FRP** as dues in revenue recovery by attaching properties of the mills.

- The payment of FRP across the country is governed by the **Sugarcane Control order, 1966** issued under the **Essential Commodities Act (ECA), 1955** which mandates payment within **14 days of the date of delivery** of the cane.
- It has been determined on the recommendation of the **Commission for Agricultural Costs and Prices (CACP)** and announced by the **Cabinet Committee on Economic Affairs (CCEA)**.
 - CACP is an attached office of the **Ministry of Agriculture and Farmers Welfare**. It is an advisory body whose **recommendations are not binding on the Government**.
 - CCEA is chaired by the **Prime Minister of India**.
- The FRP is based on the **Rangarajan Committee report** on reorganizing the **sugarcane industry**.

Which Factors are considered for announcing FRP?

- Cost of production of sugarcane
- Return to the growers from alternative crops and the general trend of prices of agricultural commodities
- Availability of sugar to consumers at a fair price
- Price at which sugar produced from sugarcane is sold by sugar producers
- Recovery of sugar from sugarcane
- The realization made from the sale of by-products viz. molasses, bagasse and press mud or their imputed value
- Reasonable margins for the growers of sugarcane on account of risk and profits

How is FRP Paid?

- The FRP is **based on the recovery of sugar** from the cane.
 - FRP has been fixed at Rs 2,900/tonne at a base recovery of 10% for the sugar season of 2021-22.
- Sugar recovery is the **ratio between sugar produced versus cane crushed**, expressed as a percentage.
- The higher the recovery, the higher is the FRP, and higher is the sugar produced.

What is Sugarcane?

- **Temperature:** Between 21-27°C with hot and humid climate.
- **Rainfall:** Around 75-100 cm.
- **Soil Type:** Deep rich loamy soil.

Note:

- **Top Sugarcane Producing States:** Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, Bihar.
- India is the **second largest producer** of sugarcane after Brazil.
- It can be grown on all varieties of soils ranging from **sandy loam to clay loam** given these soils should be well drained.
- It needs manual labour from sowing to harvesting.
- It is the main source of **sugar**, gur (jaggery), kandsari and molasses.
- Scheme for Extending Financial Assistance to Sugar Undertakings (SEFASU) and **National Policy on Biofuels** are two of the government initiatives to support sugarcane production and the sugar industry.

Initial Public Offering (IPO)

Why in News?

Recently, the government-owned **Life Insurance Corporation of India (LIC)** filed its Draft Red Herring Prospectus (DRHP) for its mega **Initial Public Offering (IPO)** with the **Securities and Exchange Board of India (SEBI)**.

- The Government, which owns **100% of LIC**, will be offloading **5% of its stake through the IPO**. All the proceeds from the IPO, which is in the form of an **offer for sale** and is expected to total up to at least Rs. 60,000 crore, will go towards meeting the Government's **disinvestment target** for FY22.
- LIC is fully owned by the government. It was set up in 1956. It has the biggest share in India's insurance business.

What is an IPO?

- It is the **process by which a privately held company**, or a company owned by the government such as LIC, raises funds by offering shares to the public or to new investors.
 - Following the IPO, the company is listed on the **stock exchange**. Stock exchange is an organized market for the sale and purchase of securities such as shares, stocks, and bonds.
 - A listed company can raise share capital for growth and expansion in the future through a **follow-on public offering or FPO**.

- While coming up with an IPO, the company has to file its offer document with the market regulator **Securities and Exchange Board of India (SEBI)**.
 - The offer document contains all relevant information about the company, its promoters, its projects, financial details, the object of raising the money, terms of the issue, etc.
 - **SEBI** is a statutory body established in 1992 in accordance with the provisions of the Securities and Exchange Board of India Act, 1992.

What is an Offer for Sale?

- Under the offer for sale method, **securities are not issued directly to the public** but are offered for sale through intermediaries like issuing houses or stock brokers.
- In this case, a company sells securities enbloc at an agreed price to brokers who, in turn, resell them to the investing public.

What is DRHP?

- A Draft Red Herring Prospectus (DRHP) is a legal preliminary document. It serves as an important communication link between the IPO-bound company and its investors and stakeholders.

Who is allowed to invest in an IPO?

- **Qualified Institutional Buyers (QIBs)** is a category of investors that includes **Foreign Portfolio Investors (FPIs)**, **mutual funds**, commercial banks, insurance companies, pension funds, etc.
 - QIBs are those **institutional investors** who are generally perceived to possess expertise and the financial capacities to evaluate and invest in the capital markets.
- All individuals who **invest up to Rs 2 lakh** in an issue are classified as retail investors.
- Retail investors investing above Rs 2 lakh are classified as high net worth individuals.

Which companies can come out with an IPO?

- In order to protect investors, **SEBI has laid down rules** that require companies to meet certain criteria before they can go to the public to raise funds.
- Among other conditions, the company must have net tangible assets of at least Rs 3 crore, and net worth of Rs 1 crore in each of the preceding three full years, and it must have a minimum average pre-tax profit of Rs 15 crore in at least three of the immediately preceding five years.

Note:

India Bans Import of Foreign Drones

Why in News?

Recently, the **Directorate General of Foreign Trade (DGFT)** under the Ministry of Commerce and Industry has **banned the import of foreign drones**.

- The move comes after the **Union Budget 2022** proposed the **Drone Shakti** scheme to facilitate application and use of 'drones as service' in the country.
- The **import of drone components, however, has not been banned** and will not require any approvals.
 - The **import of drones for defense and security purposes will also be allowed** subject to approval from the DGFT.
- The move aims to **promote made-in-India drones**.

What is the Background?

- **Drone Rules:** In 2021, the Ministry notified **liberalized drone rules** with the aim to encourage R&D and to make India a drone hub.
 - It abolished several permissions and approvals. The number of forms that need to be filled was reduced from 25 to five and the types of fee brought down from 72 to 4.
 - No permission is required for operating drones in green zones and no remote pilot licence is necessary for non-commercial use of micro and nano drones.
 - Payloads up to 500kg have been allowed so the drones can be used as unmanned flying taxis.
 - Further, foreign ownership of companies operating drones has also been permitted.
- **PLI Scheme for Drones:** The government also approved a **Production-Linked Incentive (PLI) scheme for Drones** and their components with an allocation of Rs. 120 crore for three financial years.
 - The g PLI Scheme for the drones and drone components industry addresses the strategic, tactical, and operational uses of this revolutionary technology.
- In September 2021, the **DGCA (Directorate General of Civil Aviation)** launched an interactive **airspace map** to help drone operators check for no-fly zones or where they need to undergo certain formalities before flying a drone.

- The Indian government has chosen drones to help achieve its ambition of creating a comprehensive e-property ledger under the **SVAMITVA (Survey of Villages and Mapping with Improved Technology in Village Areas)** scheme launched in April 2020.

What is the Drone Shakti Scheme?

- The Union Budget **pushed for promotion of drones through startups and skilling at Industrial Training Institutes (ITIs)**.
- Startups will be promoted to facilitate 'Drone Shakti' through varied applications and for **Drone-As-A-Service (DrAAS)**. Courses for skilling will also be started in selected ITIs across all States.
 - DrAAS allows enterprises to avail various services from drone companies, removing the need for them to invest in drone hardware or software, pilots, and training programmes.
 - Sectors where drones can be employed are endless. These include photography, agriculture, mining, telecom, insurance, telecom, oil & gas, construction, transport, disaster management, geo-spatial mapping, forest and wildlife, defence and law enforcement to name a few.
- **Drones will also be promoted for crop assessment, digitisation of land records, spraying of insecticides and nutrients (Kisan Drones)**.
- The drone services industry is **expected to grow to over Rs 30,000 crore in next three years** and **generate over five lakh jobs**.

What is a Drone?

- It is a layman terminology for **Unmanned Aircraft (UA)**.
- Originally developed for the **military and aerospace industries, drones have found their way into the mainstream** because of the enhanced levels of safety and efficiency they bring.
- A drone's **autonomy level can range from remotely piloted (a human controls its movements) to advanced autonomy**, which means that it relies on a system of sensors and **LiDAR (Light Detection and Ranging) detectors** to calculate its movement.

Note:

What are the various Applications of Drones?

Agriculture	<ul style="list-style-type: none"> ➤ Drones have a plethora of applications in Agriculture, which consists of carrying out everyday tasks like fertilizing crop fields on an automated basis, monitoring traffic incidents, surveying hard-to-reach places among others.
Healthcare	<ul style="list-style-type: none"> ➤ Drones can make medicine delivery more accessible and faster, especially in distant locations. Drone delivery of medical goods and time-sensitive transplant organs will also aid in improved resource management of limited supplies. ➤ E.g. Telangana government's 'Medicine from the sky' programme.
Inventory Management	<ul style="list-style-type: none"> ➤ Drones are being used to scan inventory at warehouses. ➤ These machines, which are coupled with sensors, can quickly monitor and transmit data in real-time to enterprises, allowing them to manage warehouses efficiently.
Security and Surveillance	<ul style="list-style-type: none"> ➤ Drones can be used for critical surveillance and intelligence gathering as well, thanks to their remote monitoring capabilities. ➤ They can also be used to inspect and offer real-time footage at construction sites.
Disaster Management	<ul style="list-style-type: none"> ➤ In the event of a natural disaster, such as an earthquake or flood, authorities can dispatch drones to monitor the affected areas. ➤ Drones can potentially be used as a social rescue device, detecting and directing trapped persons to safe regions.

Non Fungible Tokens

Why in News?

According to a report, the sales of **Non-Fungible Tokens (NFTs)** surged **USD 25 billion in 2021** as the **crypto asset** exploded in popularity. However, some experts believe NFTs are a **bubble that might pop**.

What are NFTs?

- **About:** Anything that can be converted into a digital form can be an NFT.
 - Everything from **drawings, photos, videos, GIFs, music, in-game items, selfies, and even a tweet** can be turned into an NFT, which can then be traded online using cryptocurrency.
- **Working of NFT:** If anyone converts its digital asset to an NFT, he/she will get proof of ownership, powered by **Blockchain**.
 - There is a need for a cryptocurrency wallet and an NFT marketplace where one can buy and sell NFTs.
 - Some of the NFT marketplaces are OpenSea, io, Rarible, Foundation.
 - NFTs are **different from other digital forms** in that they are backed by Blockchain technology.
 - NFTs can have **only one owner at a time**.
 - Apart from exclusive ownership, NFT owners can also **digitally sign their artwork and store specific information in their NFTs metadata**.
 - This will be **only viewable to the individual who bought the NFT**.
- **History of NFT:** **Terra Nulius** was the first NFT (started in 2015) on **Ethereum Blockchain**, although this project was merely an idea that only allowed to customise a short message which was then recorded on the blockchain.
 - Then came **Curio Cards, CryptoPunks and CryptoCats** in 2017, before NFTs slowly moved into public awareness, then expanding into mainstream adoption in early 2021.

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How is an NFT different from a cryptocurrency?

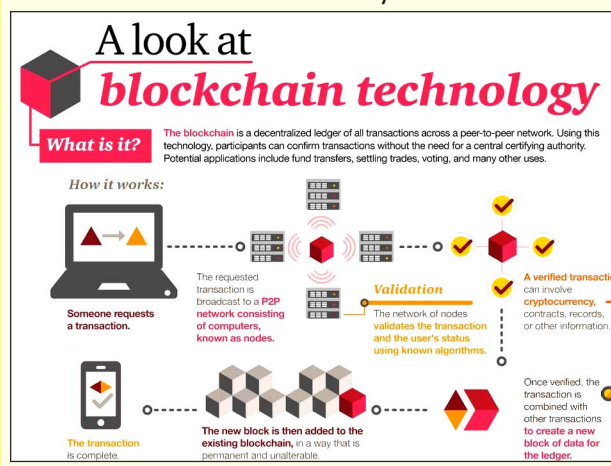
- Apart from **NFTs and cryptocurrencies being built on Blockchain**, both are different from each other.
- Cryptocurrency is a **currency and is fungible**, meaning that it is interchangeable.
 - For instance, if one holds one crypto-token, say one Ethereum, the next Ethereum that the one holds will also be of the same value.
- However, NFTs are **non-fungible, which means the value of one NFT is not equal to another**.
 - Nonfungible means NFTs aren't mutually interchangeable.
 - Every art is different from others, making it non-fungible, and unique.

What are the risks associated with buying NFTs?

- **Fraud Risks:** In the recent past, several incidents of NFT scams have been reported including the emergence of fake marketplaces, unverified sellers often impersonating real artists and selling copies of their artworks for half price.
- **Environmental Risks:** In order to validate transactions, crypto mining is done, which requires high powered computers that run at a very high capacity, affecting the environment ultimately.

What is Blockchain Technology?

- Blockchain is a **type of shared database that differs from a typical database** in the way that it stores information; blockchains store data in blocks that are then linked together via cryptography.
- As new data comes in, it is entered into a fresh block. Once the block is filled with data, it is chained onto the previous block, which makes the data chained together in chronological order.
- Different types of information can be stored on a blockchain, but the **most common use so far has been as a ledger for transactions**.
- In Bitcoin's case, blockchain is used in a **decentralized way** so that no single person or group has control—rather, all users collectively retain control.
- Decentralized blockchains are immutable, which means that the data entered is irreversible. For Bitcoin, this means that transactions are permanently recorded and viewable to anyone.



Note:

International Relations

Highlights

- Secretariat for 2023 G20 Summit
- India- UAE Virtual Summit
- Russian Banks Excluded from SWIFT
- Russia Recognises Rebel Regions of Ukraine as Independent
- Afghanistan's Humanitarian Crisis
- Organisation of the Islamic Cooperation & India
- India-France External Affairs Ministers Meet
- Secretariat for 2023 G20 Summit
- History of Russia and Ukraine
- UN Resolution Condemning Russian Aggression

Secretariat for 2023 G20 Summit

Why in News?

Recently, the Union Cabinet set in motion the process to build a Secretariat that will look after the affairs of organising the **G20** summit in 2023.

- **India will steer the international body as its President from 1st December 2022 to 30th November 2023**, which will lead to the G20 summit to be hosted here.
- The Secretariat **will be functional till February 2024**. It will also **enable long term capacity building**, including knowledge and expertise, for India's leadership on global issues in multilateral fora.
- **Indonesia assumed the Presidency of G20** in December, 2021.

What is G20?

- It is an **informal group of 19 countries and the European Union (EU)**, with representatives of the **International Monetary Fund** and the **World Bank**.
- It **does not have a permanent secretariat or Headquarters**.
- The membership **comprises a mix of the world's largest advanced and emerging economies**, representing about two-thirds of the world's population, 85% of global **Gross Domestic Product (GDP)**, 80% of global investment and over 75% of global trade.
- Its **members are** Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the EU.

- Each **G20 country** is represented by its **Sherpa**; who plans, guides, implements, etc. on behalf of the leader of their respective country.

- **Current Commerce and Industry Minister** is the current **"G20 Sherpa"** of India.



How G20 Evolved?

- The **Global Financial Crisis (2007-08)** cemented **G20's reputation** as the premier crisis management and coordination body.
- The **US**, which held the **G20 Presidency in 2008**, elevated the meeting of the **Finance Ministers and Central Bank Governors to Heads of State**, resulting in the **first G20 Summit**.
- The **Summits in Washington DC, London, and Pittsburgh** set the scene for some of the most **durable global reforms**:
 - Blacklisting states in an effort to tackle tax evasion and avoidance, provisioning stricter controls on hedge funds and rating agencies, making the Financial Stability Board an effective supervisory

Note:



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and watchdog body for the global financial system, proposing stricter regulations for too-big-to fail banks, refraining members from imposing new barriers to trade etc.

- By the time **Covid-19 struck**, the **G20 had wandered off from its original mission** and G20 lost its focus.
 - G20 **reinvented itself by widening its agenda** to include issues such as **climate change**, **jobs and social security issues**, **inequality**, **agriculture**, **migration**, **corruption**, **terror financing**, **drug trafficking**, **food security** and **nutrition**, disruptive technologies, and meeting the sustainable development goals.
- In recent times, G20 members have made all the right commitments after the pandemic, but there is little to show in action.
 - At the **Riyadh Summit in October 2020**, they prioritised four things: fighting the pandemic; safeguarding the global economy; addressing international trade disruptions; and enhancing global cooperation.
 - The **Italian Presidency in 2021** had focused on three broad, interconnected pillars of action — People, Planet, Prosperity — vowing to take the lead in ensuring a swift international response to the pandemic.
- Despite millions of deaths, the G20 members have **refused to give the legal backing to manufacture vaccines** in developing countries.

What is India's Potential for the G20 Presidency?

- As a founding member of the G20, India has **used the platform to raise issues** of vital importance and those that impact on the most vulnerable around the world.
 - But due to the rising toll of **unemployment rates** and **poverty** in the domestic portion, it's hard to take the lead effectively.
- India has set a strong example as the only country among G20 nations that is on track towards meeting what it had promised in **2015 Paris Agreement** in terms of being the only 2 degree Celsius compatible country and is much ahead as compared to other G20 countries in terms of fulfilling this commitment.
- Concurrently, **India's leadership role in delineating the success of India-France led International Solar Alliance** is globally well acclaimed as a turning point intervention in mobilising resources towards promoting research and development in renewable energy.

- Also, the vision of **'Self Reliant India (Atmanirbhar Bharat)' initiative** is expected to play a transformational role for "New India" in the global paradigm as an important and reliable pillar of world economy and global supply chains in the aftermath of Covid -19 crisis.
- India's endeavour of establishing the **Coalition for Disaster Resilient Infrastructure**, comprising nine of the G20 nations amongst others provides new dimensions of leadership in the global growth process.

India- UAE Virtual Summit

Why in News?

Recently, a **virtual summit** was held between **India and the United Arab Emirates (UAE)**.

- Earlier in September 2021, India and the UAE **formally launched negotiations on the India-UAE Comprehensive Economic Partnership Agreement (CEPA)**.



What are the Key Highlights of the Meeting?

- **Comprehensive Strategic Partnership:** Issued a Joint Vision Statement "Advancing the India and UAE Comprehensive Strategic Partnership: *New Frontiers, New Milestone*".
 - The Statement **establishes a roadmap for a future-oriented partnership** between India and UAE and identifies focus areas and outcomes.
 - The shared objective is to **promote new trade, investment and innovation dynamics in diverse sectors**.

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- **Defence and Security:** Agreed to enhance maritime cooperation contributing to maintenance of peace and security in the region.
 - **Reaffirmed joint commitment to fight against extremism and terrorism**, including cross-border terrorism, in all forms, at both regional and international levels.
- **Climate Action and Renewables:** Agreed to **support each other's clean energy missions** and establish a joint **Hydrogen Task Force** to help scale up technologies, with special focus on production of **Green Hydrogen**.
- **Emerging Technologies:** Agreed to expand cooperation on critical technologies and **mutually promote e-businesses and e-payment solutions** and promote start-ups from both countries.
- **Education Cooperation:** Agreed to establish an **Indian Institute of Technology** in the UAE.
- **Health Cooperation:** Decided to collaborate in research, production and development of reliable supply chains for vaccines and enhance investments by UAE entities in the health infrastructure in India as well as collaborate in **providing healthcare in underprivileged nations**.
- **Food Security:** Acknowledged the need to enhance the **resilience and reliability of food supply chains**.
 - Also **decided to expand cooperation through enhanced bilateral food and agriculture trade** and, promote and strengthen the infrastructure and dedicated logistic services connecting farms to ports to final destinations in the UAE.
- **Skills Cooperation:** Agreed to enhance cooperation in skill development so as to align with the market needs and address the changing needs for the future of work.
- **Released Joint Commemorative Stamp** on the occasion of **75th anniversary of India's independence** and **50th year of UAE's foundation**.
- **Comprehensive Economic Partnership Agreement (CEPA):** In a significant development, the two sides inked a **CEPA to further boost trade and investment ties**.
 - **Plastic, agriculture, food products, automobile, engineering, pharmaceuticals** are some of the areas that will be boosted because of the pact.

- The deal will **open up to 10 lakh jobs for the young people in the country** and would also **open access to broader African and Asian markets** for India.
- The CEPA is expected to **increase bilateral trade** from the current level of USD 60 billion to USD 100 billion in the next five years (2022-27).

What is CEPA?

- It is a kind of **free trade pact which covers negotiation on the trade in services and investment**, and other areas of economic partnership. It may even consider negotiation on areas such as trade facilitation and customs cooperation, competition, and **Intellectual Property Rights**.
- Partnership agreements or cooperation agreements are more comprehensive than Free Trade Agreements.
- CEPA also **looks into the regulatory aspect of trade** and encompasses an agreement covering the regulatory issues.
- India has signed **CEPAs with South Korea and Japan**.

What is the Current State of India-UAE Relations?

- **About:**
 - India and the UAE enjoy **strong bonds of friendship** based on age-old cultural, religious and economic ties between the two nations.
 - The relationship flourished after the accession of H.H. Sheikh Zayed Bin Sultan Al Nahyan as the Ruler of Abu Dhabi in 1966 and subsequently **with the creation of the UAE Federation in 1971**.
- **Political Relations:**
 - In 2019, UAE awarded the **ZAYED Medal**, their highest civilian award, to the Prime Minister of India for consolidating the long-standing friendship and joint strategic cooperation between the two nations.
 - The Indian Prime Minister's visit to the UAE in **August 2015 marked the beginning of a new and comprehensive and strategic partnership**.
- **Economic Relations:**
 - India-UAE trade was around USD 60 billion making UAE, **India's third-largest trading partner for the year 2019-20 after China and the USA**.
 - The **UAE is the second-largest export destination of India** with an amount of over USD 29 billion for the year 2019-20.

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- For the UAE, **India is the second-largest trading partner** for the year 2019 with an amount of around USD 41.43 billion for non-oil trade.
- **Cultural Relations:**
 - The two nations share historical ties and have **maintained regular cultural exchanges both at official and popular levels.**
 - They signed a Cultural Agreement in 1975 and the embassies continue to organise various cultural activities on their own as well as by collaborating with other cultural organisations.
- **Indian Community:**
 - The **UAE is home to the Indian expatriate community of more than 2.6 million**, the largest expatriate community in the UAE, which has played a major role in the economic development of the UAE.
 - Recently, India has asked the members of the **Gulf Cooperation Council (GCC)** which also includes UAE, to facilitate the return of Indians who want to resume work with the relaxing of **Covid-19**-related restrictions.

Russian Banks Excluded from SWIFT

Why in the News?

Recently, in a move to counter **Russia's war over Ukraine**, the US and the **European Commission** issued a joint statement to **exclude some Russian banks from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) messaging system.**

- The intention behind this action is to further **isolate Russia from the international financial system.**
- The move against Russia is **only partly implemented for now**, with only some Russian banks being covered.
- The option of expanding it further to a pan-country ban is something that the US and its allies are holding back as a further escalatory move.

What is the SWIFT Messaging System?

- SWIFT provides the **trusted messaging platform** that enables financial institutions to **exchange information about global monetary transactions** such as money transfers.

- While SWIFT does **not actually move money**, it operates as a **middleman to verify information of transactions** by providing secure financial messaging services to more than **11,000 banks in over 200 countries.**
 - Most of the world trade takes place with financial messaging passing through SWIFT.
- It was **established in 1973** and is **based in Belgium.**
- It is overseen by the central banks from **eleven industrial countries:** Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States, besides Belgium.
 - **India's financial system has access to the SWIFT.**
- Prior to SWIFT, the only reliable means of message confirmation for international funds transfer was **Telex.**
 - It was discontinued due to a range of issues such as low speed, security concerns, and a free message format.

What will be Impact on Russia?

- Russia is **heavily reliant on the SWIFT platform** for its **key natural resources trade**, especially the payments for its oil and gas exports.
 - It will **freeze the assets of Russia's central bank**, which would stop Russia from **"using its war chest"**, referring to its **forex reserves.**
 - Further, the curbs on Russia's central bank will prevent it from dipping into its **forex deposits to limit the effect of sanctions.**
- Targeting only some Russian banks seems to be aimed at both keeping the **option of further escalation open.**
 - it also envisages that the sanctions have the maximum possible impact on Russia, but prevent a major impact on European companies dealing with Russian banks for payments for their gas imports
- There is going to be a **catastrophe on the Russian currency market.**
- Prior to this, **only one country had been cut off from SWIFT — Iran.** It resulted in it losing a third of its foreign trade.

How did Russia React?

- Russia has worked on alternatives, including the SPFS (**System for Transfer of Financial Messages**) — an equivalent of the SWIFT financial transfer system **developed by the Central Bank of Russia.**

Note:



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- Russia is reported to be **collaborating with the Chinese** on a possible venture which will be a potential challenger to SWIFT.
 - There are plans to integrate it with China's Cross-border Inter-bank Payments System (CIPS).

What are Other Global Alternatives to SWIFT?

- There are **financial technology companies like Ripple, which has been offering its platform based on interledger protocol** (the same technology behind **cryptocurrencies**) as an alternative.
- **Cryptocurrencies** are another avenue for cross border remittances. Russia has also been working on a '**digital rouble**', which is still not launched.

ALTERNATIVE SYSTEMS MAY GET BOOST	
<ul style="list-style-type: none"> ➤ SWIFT, which offers banks a fast & secure messaging platform for fund transfers, is a cooperative with HQ in Belgium ➤ Used by over 11,000 institutions in more than 200 countries, it can block specific banks or certain types of transactions ➤ Russia set up its own SWIFT counterpart called SPFS, with 	<ul style="list-style-type: none"> plans to integrate it with China's counterpart CIPS. This would allow trade between the two ➤ Russia is also working on launching a digital version of its rouble ➤ India, Russia & China were using the BRICS grouping to create an alternative to SWIFT – this could get a boost now

How will the Sanctions Impact India?

- Following the collapse of the **Soviet Union in 1991**, India had entered into a **rupee-rouble trade arrangement** with Russia to ensure that defence and other imports could continue.
- In 2018, a pilot project was run where Indian importers paid in roubles for diamond imports.
- These payments were made to the Indian branch of **Russia's Sberbank**. **SBI and Canara Bank have a joint venture** (The Commercial Indo Bank), which might be able to help Indians there.

Russia Recognises Rebel Regions of Ukraine as Independent

Why in News?

Recently, Russia recognised the Ukraine rebel regions in eastern Ukraine - **Donetsk and Luhansk** – as independent areas despite calls from the west to put an end to the **tensions** driven by fears that Russia may attack Ukraine.

- This paved the way to provide them **military support — a direct challenge to the West** that will fuel fears that Russia could imminently invade Ukraine.
- Tensions have peaked over the last few weeks as Russia amassed over 1,50,000 troops at Ukraine borders in one of the worst crises since the **Cold War**.
- The announcement shatters a **2015 peace deal signed in Minsk** requiring Ukrainian authorities to offer a broad self-rule to the rebel regions.

What is Russia's Stand?

- It blamed the **North Atlantic Treaty Organisation (NATO)** for the current crisis and called the US-led alliance an existential threat to Russia.
- Charged that **Ukraine had inherited Russia's historic lands** and after the Soviet collapse was used by the West to contain Russia.
- It wants **Western Countries to guarantee that NATO won't allow Ukraine** and other former Soviet countries to join as members.
- It has also **demanding the alliance halt weapons deployments to Ukraine** and roll back its forces from Eastern Europe.
 - The western countries have rejected the demand.

What is the Background of the Crisis?

- Ukraine and Russia **share hundreds of years of cultural, linguistic and familial links**.
 - For many in Russia and in the ethnically Russian parts of Ukraine, **the shared heritage of the countries is an emotional issue** that has been exploited for electoral and military purposes.
- As part of the Soviet Union, **Ukraine was the second-most powerful Soviet republic after Russia**, and was crucial strategically, economically and culturally.
- The **Donbass region, comprising the Donetsk and Luhansk oblasts of Ukraine, has been at the centre of the conflict** since March 2014 when Moscow (Russia) invaded and annexed the Crimean Peninsula.
 - In April, **pro-Russia rebels began seizing territory** (with Russia supporting them through hybrid warfare) in Eastern Ukraine and in May 2014, the **rebels in the Donetsk and Luhansk regions held a referendum to declare independence** from Ukraine.

Note:



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- Since then, these **predominantly Russian speaking regions** (more than 70% speak Russian) within Ukraine have been **witnessing shelling and skirmishes between the rebels and Ukrainian forces** leading to the loss of over 14,000 lives by most estimates, creating around 1.5 million registered Internally Displaced Persons (IDPs) and destruction of the local economy.
- What has changed now is that the **shelling has intensified since last October 2021 when Russia began amassing troops along the borders with Ukraine.**
- If the situation in the Donbass escalates, the **possibility of a war cannot be dismissed.** One way to prevent the outbreak of a war would be to implement the Minsk agreements immediately, as Russia has suggested.



What are the Minsk Agreements?

- There are two Minsk agreements, Minsk 1 and Minsk 2, named after the **Belarussian capital Minsk** where the talks were held.

➤ Minsk 1:

- **Minsk 1 was written in September 2014** by the Trilateral Contact Group on Ukraine, i.e. Ukraine, Russia, and the **Organisation for Security and Co-operation in Europe (OSCE)** with mediation by France and Germany in the so-called Normandy Format.
- Under Minsk 1, **Ukraine and the Russia-backed rebels agreed on a 12-point ceasefire deal**, which included prisoner exchanges, delivery of humanitarian assistance, and the withdrawal of heavy weapons.
 - However, **due to violations by both sides, the agreement did not last long.**

➤ Minsk 2:

- As the rebels moved further into Ukraine, in February 2015, **representatives of Russia, Ukraine, the OSCE and the leaders of Donetsk and Luhansk signed a 13-point agreement**, now known as the **Minsk 2 accord**.
- The new agreement had **provisions for an immediate cease-fire, withdrawal of heavy weaponry, OSCE monitoring, dialogue on interim self-government for Donetsk and Luhansk**, in accordance with Ukrainian law.
- It also had provisions related to acknowledgement of special status by parliament, pardon and amnesty for fighters, exchange of hostages and prisoners, humanitarian aid etc.
 - However, these **provisions have not been implemented because of what is popularly known as the 'Minsk Conundrum'**. This essentially means that Ukraine and Russia have contradictory interpretations about the agreement.

What is the Stand of Different Nations on the Issue?

- The **United States** has already announced sanctions prohibiting "new investment, trade, and financing by US persons to, from, or in" the two breakaway regions.
- Japan is likely to **join the US-led sanctions** while **French officials have been quoted as saying in reports that the European Union (EU) is also in discussions for punitive actions against Russia.**
 - The EU has condemned Russia over "a blatant violation of international law as well as of the Minsk agreements."

Note:

- The **United Kingdom** has also warned of further **sanctions**. **Australia** also called Russia's actions **unacceptable, it's unprovoked, it's unwarranted**.

What is India's Stand on the Issue?

- India did not join the Western powers' condemnation of Russia's intervention in Crimea and kept a low profile on the issue.
- In November 2020, India voted against a Ukraine-sponsored resolution in the **United Nations (UN)** that condemned alleged human rights violations in Crimea thereby backing old ally Russia on the issue.
- Recently, India also suggested at the UN Security Council that "**quiet and constructive diplomacy**" is the need of the hour and any step that could escalate the tension should be avoided.
 - India's stand has been **welcomed by Russia**.

Afghanistan's Humanitarian Crisis

Why in News?

Recently, the **World Bank** has approved a plan to use some **USD 1 billion in a frozen Afghanistan trust fund** for education, agriculture, health and family programs to ease the country's **worsening humanitarian and economic crises**.

- The aim is **to protect the vulnerable, help preserve human capital and key economic and social institutions** and reduce the need for future humanitarian assistance.
- Earlier, the **Delhi Regional Security Dialogue on Afghanistan** was held in India.



What is the Current Situation in Afghanistan?

- An insecure Afghanistan has not only **dangerous implications for the region but also the whole world**.
- Afghanistan has been **unstable and insecure for decades**, but the **Taliban's capture of power** in August 2021 has had the entire region hanging by a thread.
 - The **current situation in Afghanistan is disturbingly similar to the geopolitical scenario in the late 1990s**.
 - The Taliban seized power in 1996, but the international community did not fully grasp the potential consequences of the new paradigm.
- International aid **organisations have left the country**. The **Taliban are unable to pay the wages** to government employees. The **public health care sector is in a disarray**.
- The war-ravaged country is facing an unprecedented humanitarian crisis, which **could turn into another violent conflict**.
- Apart from the suffering of the rural population, even **Afghans based in cities are finding it impossible to make ends meet**.
- Afghanistan **could face a bigger catastrophe** if the Taliban are unable to improve the economic situation, adding that they will find it difficult to govern and a civil war could erupt.
- It is **easier for terrorist groups to operate in a country that is facing economic turmoil**. Afghanistan is no exception.

What are the Impacts of the Humanitarian Crisis in Afghanistan?

- Many **western nations** see an immediate security threat emanating from Afghanistan. The Taliban, seeking to gain international recognition and financial aid, are more **inclined toward a "diplomatic" approach** than employing violent tactics. **But this superficial calm may not last for long**.
 - If the humanitarian crisis aggravates in Afghanistan, even the Taliban won't be able to manage the situation, as evidenced by violent "**Islamic State**" (IS) attacks.

Note:

- A possible **violent conflict in Afghanistan could spill over to other countries** in the region.
 - If that happens, **regional powers will start supporting proxies** to keep the violence within Afghanistan's boundaries. But it will only be a short-term solution to the Afghan conflict.
 - The more the Taliban stay in power, the more difficult it will get to maintain stability in the region.
- The **Taliban have ties with international terrorists**. Their return to power has emboldened jihadi organizations in the region.
- As they consolidate themselves, **their tactical and strategic ties with terrorism financiers and sponsors will grow and will eventually jeopardize peace and security** in the region and beyond.

What should the World do for Afghanistan?

- The humanitarian crisis in Afghanistan **cannot be resolved through humanitarian aid alone**.
- Afghanistan's **economy needs to be improved** so that Afghans can be brought out of poverty.
 - But to lift Afghanistan's economy, **the international community needs to engage with the Taliban**.
- Terrorism will not be contained within Afghanistan's borders if the **humanitarian situation in the country does not improve**.

What will be the Implications on India?

- **Strategic Concern:**
 - The Taliban's control will also mean a **bigger hand for the Pakistani military and intelligence agencies** to influence outcomes for the country, which will mandate a much smaller role for Indian development and infrastructure work that has won it goodwill over the past 20 years.
- **Threat of radicalisation:**
 - There is the threat of growing radicalisation and space for **pan-Islamic terror groups in India's neighbourhood**.

Organisation of the Islamic Cooperation & India

Why in the News?

Recently, India has lashed out at the **Organisation of the Islamic Cooperation (OIC)** for being "communal minded" amid the **Karnataka hijab row**.

What is the recent Controversy Between OIC & India?

- **OIC Statement:** The OIC has called on the **UN Human Rights Council** to take "necessary measures" on the issue of Muslim girl students being told not to wear the hijab in Karnataka schools.
 - The OIC also urged India to **"ensure the safety, security and well being of the Muslim community while protecting their way of life"**.
- **India's Response:** India held that it is a democracy, and issues within the country are resolved **in accordance with our Constitutional framework and mechanism, as well as democratic ethos and polity**.
 - Further, India criticised OIC for being **"communal minded"** and "hijacked by vested interests"—a thinly veiled reference to Pakistan.

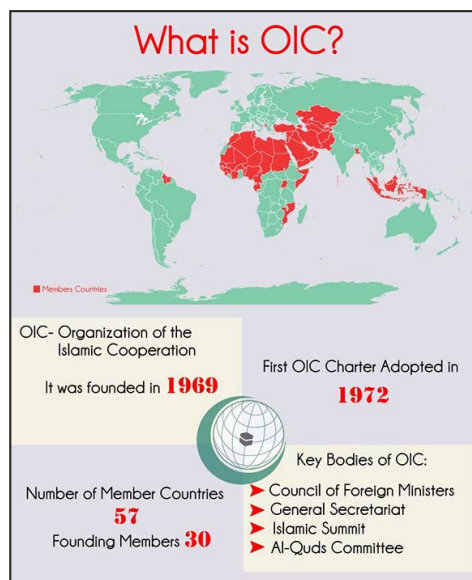
What is the Organisation of Islamic Cooperation?

- **About:**
 - The OIC is the **second largest intergovernmental organisation** after the **United Nations** with a membership of 57 states.
 - It is the **collective voice of the Muslim world**.
 - It **endeavors to safeguard and protect the interests of the Muslim world** in the spirit of promoting international peace and harmony among various people of the world.
 - The Organisation of the Islamic Conference was established by the **First Islamic Summit Conference held in Morocco in September 1969**, to marshal the Islamic world after an act of arson at the **Al-Aqsa Mosque in Jerusalem** by a 28-year-old Australian in 1969.
 - **Headquarters:** Jeddah, Saudi Arabia.

Note:



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What is the Status of India's relationship with OIC as an organisation:

- As a country with the **world's second largest Muslim community**, India had been invited to the founding conference at Rabat in 1969, but was humiliatingly ejected at Pakistan's behest.
- India stayed away because of a multiplicity of reasons:
 - It did not want to join an **organisation founded on religion**.
 - There was the risk that improving bilateral relations with individual member states would come under pressure in a grouping, **especially on issues such as Kashmir**.
- At the **45th session of the Foreign Ministers' Summit in 2018**, Bangladesh, the host, suggested that India, where more than 10% of the world's Muslims live, should be given **Observer status**, but Pakistan opposed the proposal.
- After building close ties with powerful members such as **UAE and Saudi Arabia**, India has been confident of riding over any statement by the grouping.
 - India has consistently underlined that J&K is an **"integral part of India and is a matter strictly internal to India"**, and that the **OIC has no locus standi on the issue**.
- In **2019**, India made its maiden appearance at the **OIC Foreign Ministers' meeting**, as a **"guest of honour"**.
 - This first-time invitation was seen as a **diplomatic victory for India**, especially at a time of heightened tensions with Pakistan following the Pulwama attack.

India-France External Affairs Ministers Meet

Why in News

Recently, the **External Affairs Minister of India** held talks with his French counterpart.

- The two leaders discussed several regional and global issues including the **India-EU relationship**, **Afghanistan situation**, **Indo-Pacific Strategy**, **South China Sea Dispute**, **Iran nuclear deal** and the **Ukraine crisis**.



What are the Highlights of the Meeting?

- **Indo-Pacific Parks Partnership:** The two Ministers agreed to jointly launch the Indo-French call for an Indo-Pacific Parks Partnership.
 - This partnership aims **to build capacities in the Indo-Pacific region**, in terms of sustainable management of protected areas, by gathering and sharing the experiences and expertise that exist in the region among key Indo-Pacific public & private natural park managers.
- **India-France Roadmap on the Blue Economy and Ocean Governance:** Both sides also adopted the "India-France Roadmap on the **Blue Economy** and Ocean Governance".
 - The roadmap aims **to enhance partnership in the field of blue economy** by way of institutional, economic, infrastructural and scientific cooperation.

Note:



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- **Intensify India-EU Ties:** They also agreed to intensify India-E.U. ties under the French Presidency, and the need to begin negotiations on the **Free Trade and Investment Agreements** and implement the India-E.U. Connectivity Partnership.
- **Strengthening Multilateralism:** They also agreed to coordinate in the **United Nations Security Council** on issues of mutual concern.
- **Deepening Strategic Partnership:** Both Ministers agreed to further deepen the Strategic Partnership, particularly in the areas of trade and investments, defence and security, health, education, research and innovation, energy and **climate change**.
- **Facilitating People-To-People Contact:** Agreed to soon conclude a Joint Declaration of Intent in the Area of Sports, aimed at further facilitating people-to-people contact.
 - Strengthening the long-standing cooperation on public administration and administrative reforms between the relevant authorities.

What are the Areas of Cooperation in India-France Relations?

- **Background:** France was one of the first countries with which India signed a “strategic partnership” after the end of the **Cold War**, in January 1998.
 - France was one of the very few countries to **support India’s decision to test nuclear weapons in 1998**.
 - Today, France has emerged as **India’s most reliable partner** on issues relating to terrorism and Kashmir.
- **Defence Cooperation:** Both countries have a defence dialogue at the Ministerial level.
 - The three services have regular defence exercises; viz.
 - **Exercise Shakti** (Army)
 - **Exercise Varuna** (Navy)
 - **Exercise Garuda** (Air Force)
 - Recently, the Indian Air Force (IAF) has inducted **French Rafale multi-role combat aircraft**.
 - India entered into a contract with a French firm to build **six Scorpene submarines** in **India’s Malegaon dockyards** through a **technology-transfer arrangement in 2005**.
 - The two countries also signed the Agreement regarding the **Provision of Reciprocal Logistics Support**.

- **Bilateral trade and Economic relations:** The **India-France Administrative Economic and Trade Committee (AETC)** provides an appropriate framework to assess and find ways to further promote bilateral trade and investment as well as to speed up the resolution of market access issues to the benefit of economic operators
- **Global agendas:** Climate change, biodiversity, renewable energy, terrorism, cybersecurity and digital technology, etc:
 - There have been joint efforts to limit climate change and develop the **International Solar Alliance**.
 - Both countries have agreed on a road map on cybersecurity and digital technology.

Secretariat for 2023 G20 Summit

Why in News?

Recently, the Union Cabinet set in motion the process to build a Secretariat that will look after the affairs of organising the **G20** summit in 2023.

- **India will steer the international body as its President from 1st December 2022 to 30th November 2023**, which will lead to the G20 summit to be hosted here.
- The Secretariat **will be functional till February 2024**. It will also **enable long term capacity building**, including knowledge and expertise, for India’s leadership on global issues in multilateral fora.
- **Indonesia assumed the Presidency of G20** in December, 2021.

What is G20?

- It is an **informal group of 19 countries and the European Union (EU)**, with **representatives of the International Monetary Fund and the World Bank**.
- It **does not have a permanent secretariat or Headquarters**.
- The membership **comprises a mix of the world’s largest advanced and emerging economies**, representing about two-thirds of the world’s population, 85% of global **Gross Domestic Product (GDP)**, 80% of global investment and over 75% of global trade.
- Its **members are** Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the EU.

Note:

- Each **G20 country** is represented by its **Sherpa**; who plans, guides, implements, etc. on behalf of the leader of their respective country.
 - **Current Commerce and Industry Minister** is the current “G20 Sherpa” of India.



How G20 Evolved?

- The **Global Financial Crisis (2007-08)** cemented G20's **reputation** as the premier crisis management and coordination body.
- The **US**, which held the **G20 Presidency in 2008**, elevated the meeting of the **Finance Ministers and Central Bank Governors to Heads of State**, resulting in the **first G20 Summit**.
- The **Summits in Washington DC, London, and Pittsburgh** set the scene for some of the most **durable global reforms**:
 - Blacklisting states in an effort to tackle tax evasion and avoidance, provisioning stricter controls on hedge funds and rating agencies, making the Financial Stability Board an effective supervisory and watchdog body for the global financial system, proposing stricter regulations for too-big-to fail banks, refraining members from imposing new barriers to trade etc.
- By the time **Covid-19 struck**, the **G20 had wandered off from its original mission** and G20 lost its focus.
 - G20 **reinvented itself by widening its agenda** to include issues such as **climate change, jobs and social security issues, inequality, agriculture, migration, corruption, terror financing, drug trafficking, food security and nutrition**, disruptive technologies, and meeting the sustainable development goals.

- In recent times, G20 members have made all the right commitments after the pandemic, but there is little to show in action.
 - At the **Riyadh Summit in October 2020**, they prioritised four things: fighting the pandemic; safeguarding the global economy; addressing international trade disruptions; and enhancing global cooperation.
 - The **Italian Presidency in 2021** had focused on three broad, interconnected pillars of action — People, Planet, Prosperity — vowing to take the lead in ensuring a swift international response to the pandemic.
- Despite millions of deaths, the G20 members have **refused to give the legal backing to manufacture vaccines** in developing countries.

What is India's Potential for the G20 Presidency?

- As a founding member of the G20, India has **used the platform to raise issues** of vital importance and those that impact on the most vulnerable around the world.
 - But due to the rising toll of **unemployment rates and poverty** in the domestic portion, it's hard to take the lead effectively.
- **India has set a strong example as the only country among G20 nations that is on track towards meeting what it had promised in 2015 Paris Agreement** in terms of being the only 2 degree Celsius compatible country and is much ahead as compared to other G20 countries in terms of fulfilling this commitment.
- Concurrently, **India's leadership role in delineating the success of India-France led International Solar Alliance** is globally well acclaimed as a turning point intervention in mobilising resources towards promoting research and development in renewable energy.
- Also, the vision of **'Self Reliant India (Atmanirbhar Bharat)' initiative** is expected to play a transformational role for “New India” in the global paradigm as an important and reliable pillar of world economy and global supply chains in the aftermath of Covid -19 crisis.
- India's endeavour of establishing the **Coalition for Disaster Resilient Infrastructure**, comprising nine of the G20 nations amongst others provides new dimensions of leadership in the global growth process.

Note:



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History of Russia and Ukraine

Why in News?

Recently, Russia recognised **two independent republics out of Ukraine**, signaling the **inevitable war** that followed.

- In the declaration of war, the Russian President **described Ukraine with no history or identity**, and was entirely and fully created by the **former Soviet Union (USSR)**.
- Ukraine and Russia share hundreds of years of **cultural, linguistic and familial link**.

What is the Early History of Ukraine?

- A millennium ago, what is **Ukraine today lay at the heart of the Kyivan Rus' (Rus' land)**.
- Kyivan Rus was a federation of the **East Slavic, Baltic, and Finnic peoples of eastern and northern Europe**, with its **capital in Kyiv**.
 - Modern **Ukraine, Russia, and Belarus** all trace their cultural ancestry to the Kyivan Rus'.
- The Kyivan Rus' reached its **greatest size and power in the 10th and 11th centuries**.
- In the mid-13th century, the Kyivan Rus', weakened by the **decline of trade as the Byzantine Empire collapsed**, fell apart under the onslaught of the **Mongol Golden Horde**, who sacked Kyiv in 1240.
 - The Byzantine Empire, also called Byzantium, was the eastern half of the Roman Empire, based at Constantinople (modern-day Istanbul) that continued on after the western half of the empire collapsed.
 - The Golden Horde was the group of settled Mongols who ruled over Russia, Ukraine, Kazakhstan, Moldova, and the Caucasus from the 1240s until 1502.
- In the early 15th century, large parts of the former Kyivan Rus' were incorporated into the multi-ethnic **Grand Duchy of Lithuania**.
- By the **Union of Lublin, Poland, in 1569**, the Crown of the Kingdom of Poland and the Grand Duchy of Lithuania came together to form the **Polish-Lithuanian Commonwealth**, which was among Europe's biggest countries at the time.
- The beginnings of the **modern Ukrainian national identity** can be traced back to about a century after this event.

What are other Salient Features of Ukraine?

- **Geography:** Ukraine is in the **east of Europe**, and is **bound by Russia to its northeast**, east, and southeast, and the Black Sea in the south. In the southwest, west, and north, Ukraine shares borders, in the anticlockwise direction, with **Moldova, Romania, Hungary, Slovakia, Poland, and Belarus**.
 - It is the **largest country in Europe after Russia** itself, with an area of 6,03,550 sq km, or **about 6% of the continent**.



- **Demography:** In July 2021, Ukraine's population was **estimated at 43.7 million**. Of this, **77.8% was of Ukrainian ethnicity and 17.3% was Russian**, and Ukrainian and Russian speakers made up **67.5% and 29.6% of the population respectively**.
- **Economy:** Ukraine is the **poorest country in Europe in terms of gross domestic product and gross national income per capita**. It has deposits of iron ore and coal, and exports corn, sunflower oil, iron and iron products, and wheat.
- **Relations With India:** India is Ukraine's **largest export destination in the Asia Pacific region**.
 - The country's **major export to India** is sunflower oil, followed by inorganic chemicals, iron and steel, plastics, and chemicals.
 - Ukraine's **major import from India** is **pharmaceutical products**.

When Did Ukraine Incorporate into Russia?

- In the 18th century, **Empress Catherine the Great (1762-96) of Russia** absorbed the entire ethnic Ukrainian territory into the Russian Empire.
- The **Tsarist policy of Russification** led to the **suppression of ethnic identities** and languages, including that of the Ukrainians.

Note:



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- Within the Russian Empire though, many **Ukrainians rose to positions of prosperity and importance**, and significant numbers migrated to settle in other parts of Russia.
- More than 3.5 million Ukrainians fought in **World War I on the side of the Russian Empire**, but a smaller number fought against the Tsar's army with the Austro-Hungarians.
- **Ukraine Becoming part of USSR:** The **World War I** led to the **end of both the Tsarist and Ottoman empires**.
 - As a mainly **communist-led Ukrainian national movement emerged**, several small **Ukrainian states** sprang up.
 - Months after the **Bolsheviks took power in the October Revolution of 1917**, an independent Ukrainian People's Republic was proclaimed, but a **civil war continued** between various claimants to power, including Ukrainian factions, anarchists, Tsarists, and Poland.
 - In 1922, **Ukraine became part of the Union of Soviet Socialist Republics (USSR)**.
 - The Soviet Union had its roots in the October Revolution of 1917, when the Bolsheviks, led by Vladimir Lenin, overthrew the Russian Provisional Government that had replaced Tsar Nicholas II.

What was the Ottoman Empire?

- An empire created by Turkish tribes in Anatolia (Asia Minor) that grew to be one of the most powerful states in the world during the 15th and 16th centuries.
- The Ottoman period spanned more than 600 years and **came to an end only in 1922, when it was replaced by the Turkish Republic** and various successor states in southeastern Europe and the Middle East.
- At its height the empire encompassed most of southeastern Europe to the gates of Vienna, including present-day Hungary, the Balkan region, Greece, and parts of Ukraine; portions of the Middle East now occupied by Iraq, Syria, Israel, and Egypt; North Africa as far west as Algeria; and large parts of the Arabian Peninsula.

What was the Status of Ukraine After the Collapse of USSR?

- In 1991, the USSR was dissolved.

- The Demands for independence had been growing in Ukraine for a couple of years previously, and in 1990, over 300,000 Ukrainians created a **human chain in support of freedom**.
 - This was followed by the **Granite Revolution when students** sought to prevent the signing of a new agreement with the USSR.
- On 24th August, 1991, after the failure of the coup to remove **President Mikhail Gorbachev** and restore the communists to power, the parliament of **Ukraine adopted the country's Act of Independence**.
 - Subsequently, **Leonid Kravchuk**, head of the parliament, **was elected Ukraine's first President**.
- In December 1991, the leaders of Belarus, Russia, and Ukraine formally dissolved the Soviet Union and formed the **Commonwealth of Independent States (CIS)**.
 - However, **Ukraine's parliament, the Verkhovna Rada**, never ratified the accession, so Ukraine was legally never a member of the CIS.

What is the Recent History of Russia-Ukraine Conflict?

- In 2014, **Russia had annexed Crimea from Ukraine following** a hastily called referendum, a move that **sparked fighting between Russia-backed separatists and government forces in eastern Ukraine**.
- Recently, Ukraine has urged the **North Atlantic Treaty Organization (NATO)** to speed up his **country's membership in the alliance**.
- Russia declared **such a move a "red line"**, and worried about the consequences of the US-led military alliances expanding right up to its doorstep.
- This has led to the present war between Russia and Ukraine.

UN Resolution Condemning Russian Aggression

Why in News?

Recently, the **United Nation Security Council** voted on the draft resolution by the US and Albania that sought to **condemn Russian aggression** and called for the **immediate cessation of violence** and withdrawal of Russian military from Ukraine.

Note:



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How much of Ukraine does Russia control?



What was the Resolution About?

- The Council's resolution **reaffirmed its commitment to the sovereignty, independence, unity and territorial integrity of Ukraine** within its internationally recognised borders.
- The resolution **"deplores in the strongest terms Russia's aggression against Ukraine"** and decides that **Russia "shall immediately cease its use of force against Ukraine and shall refrain from any further unlawful threat or use of force against any UN member state"**.
 - The **original version was too strong**, as it invoked **UN Chapter VII**, which authorises the use of force against Russian troops in Ukraine.
- It also asked **Russia to "immediately and unconditionally reverse the decision related to the status of certain areas of Donetsk and Luhansk regions"** of Ukraine".
- The resolution **did not pass** since the **permanent member and President of the Security Council** for the month of February **Russia**, used its veto.
- The resolution received 11 votes in favour and three abstentions. **China and India both abstained**.

What is India's Stand on the Current Crisis?

- India is deeply disturbed by the recent turn of developments in Ukraine. India urged that **all efforts shall be made for the immediate cessation of violence and hostilities**.
- **Dialogue is the only answer to settling differences and disputes**, however daunting that may appear at this moment. It is a matter of regret that the path of diplomacy was given up.

- With this **India has managed to hold its balancing act** again, despite the considerable pressures from the West to vote against Russia, as well as pressures from Russia to support it.
 - Earlier in January 2022, **India abstained from a vote on whether to hold a discussion on the Ukraine situation**, and also indicated support for Russia's legitimate security interests.
- India has been in touch with all sides, **urging parties concerned to return to the negotiating table**.

What is India's Dilemma?

- India's strategic ambivalence at this big turning point in world geopolitics is born out of its **friendships and strategic partnerships on both sides**.
- **Russia is India's biggest and time tested supplier of defence weapons**. Despite its growing friendship with China, Russia has boosted India's defence capabilities with the **S-400 air defence system**.
- India's Defence Minister visited Russia at the height of India's crisis with the **Chinese Army at the Line of Actual Control (LAC)** in June 2020. And **Russia has stood behind India at the UNSC on all issues**.
- At the same time, **India has a deep partnership with the United States**, which includes defence pacts, trade and investment, technology, and not least, a huge connection through the Indian diaspora and people to people contacts.
 - With thousands of students leaving Indian shores every year to study in American universities.
- The same with Europe. Additionally, **France as one of the P-5 (Permanent Five) is a vital friend of India in the UN Security Council**. **India needs all these friends** as it deals with China's moves at the LAC.

What is the Need of the Hour for India?

- Dealing first-hand with the consequences of **Chinese expansionism and adventurism** on its own borders, and a South Asian region suddenly **vacated by America's military presence in Afghanistan**.
- **India needs both the US and Russia** to fend off a Chinese strategic and geo-economic threat in Asia.

Note:

- If the **India-Russia partnership is critical on land in Asia**, the **QUAD** - an alliance between America, Japan, Australia and India - is imperative when it comes to **countering Chinese maritime expansionism in the Indian Ocean region**.
 - The imperative to **counter China remains a cornerstone of Indian foreign policy**; everything-including Delhi's position on Russian action in Ukraine- flows from that.
 - Within India's foreign policy establishment, **there is ongoing debate on what India might gain or lose by its neutrality and the consequences of siding with the West**.
- There is also the thinking that the **West cannot afford to cut away from India at this point, as it needs India's markets**, and India's heft as a democracy as it seeks partners to contain China.
 - But there is an **inbuilt tension in this realist position that speaks about rules violations** in one part of the world but does not call it out in another.
 - Therefore, **India's position may have to be calibrated constantly** as the situation evolves especially if confronted by growing casualties in Ukraine.



Note:

Social Issues

Highlights

- PM CARES Scheme for Children
- Leprosy
- Bonafide Plea of Juvenility

PM CARES Scheme for Children

Why in News?

Recently, the Centre has extended the **PM Cares for Children Scheme** till 28th February 2022, which was earlier valid till 31st December 2021.

	Government stands with children who lost their parents due to COVID-19
	Such children to get a monthly stipend once they turn 18 and a fund of 10 lakh when they turn 23 from PM CARES
	Free education to be ensured for children who lost their parents to COVID-19
	Children will be assisted to get an education loan for higher education & PM CARES will pay interest on the loan
	Children will get free health insurance of 5 lakh under Ayushman Bharat till 18 years & premium will be paid by PM CARES
	Children represent the future of the country and we will do everything to support and protect the children: PM Narendra Modi
	It is our duty, as a society, to care for our children and instil hope for a bright future: PM Narendra Modi

What is the 'PM-CARES for Children' Scheme?

- **About:**
 - The scheme was **launched on 29th May, 2021** with the aim to support **children who lost both or surviving parent(s)**, legal guardian/adoptive parents or single adoptive parent to **Covid-19**.
 - The status of children in need of care and protection included orphans (10,094), lost either parent (1,36,910) and abandoned (488) taking the total to 1,47,492.
 - In the **gender-wise break-up**, out of the 1,47,492 children, there are 76,508 boys, 70,980 girls and four transgender.

- The objective is to **ensure comprehensive care and protection of children** in a sustained manner, enable their wellbeing through health insurance, empower them through education and equip them for self-sufficient existence with financial support on **reaching 23 years of age**.

➤ Features of the Scheme:

- **Corpus of Rs. 10 Lakh:**
 - The scheme offers a **corpus of Rs. 10 lakh** to each of these children from the **PM CARES fund**.
 - This corpus will be used to give a **monthly stipend from 18 years of their age**, for the next five years and on reaching the age of 23 years, he or she will get the corpus amount as one lump-sum for personal and professional use.
- **Education to the Children:**
 - The **education expenses of 10 younger children** are supported by way of admission to **Kendriya Vidyalayas** and private schools up to higher secondary level.
 - These children are also supported **during their higher education** through either a scholarship equivalent to the tuition fees or educational loans where the interest on the loan will be paid by the PM-CARES fund.
- **Health Insurance:**
 - All children will be enrolled as a beneficiary under **Ayushman Bharat Scheme** with a health insurance cover of Rs. 5 lakh.
 - The premium amount will be paid by PM-CARES till a child turns 18.

What is the PM-CARES Fund?

- The government has set up the **Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM-CARES Fund)** to deal with any kind of emergency or distress situation like posed by the Covid-19 pandemic.

Note:

- The Fund is a **public charitable trust** with the Prime Minister as its Chairman. Other Members include Defence Minister, Home Minister and Finance Minister.
- The Fund enables micro-donations as a result of which a large number of people will be able to contribute with the smallest of denominations.
- It will **strengthen disaster management capacities** and encourage research on protecting citizens.
- Contribution to PM - CARES Fund Qualifies as **CSR (Corporate Social Responsibility) Expenditure**.

What are the other Children Related Initiatives Taken by the Government During Covid?

- **Bal Swaraj Covid-Care:**
 - The **National Commission for Protection of Child Rights (NCPCR)** has devised an online tracking portal “Bal Swaraj (Covid-Care)” for children in need of care and protection.
 - This has been created with a **purpose for online tracking and digital real time monitoring mechanism** of children who are in need of care and protection.
- **PM e-VIDYA:**
 - On 17th May, 2020, a comprehensive initiative called PM e-VIDYA was initiated as part of **Atma Nirbhar Bharat Abhiyan** which unifies all efforts related to digital/online/on-air education to enable multi-mode access to education.
 - It was launched under the **One Nation One Digital Platform** with the objective of **protecting the education of children during the Covid-19 pandemic**.
- **Manodarpan:**
 - It is aimed to **provide psychosocial support to students**, family members and teachers for their mental health and well-being during the times of **Covid-19**.

Leprosy

Why in News?

According to the latest report by the **Leprosy Mission Trust India**, the **Covid-19 pandemic** and its ensuing recommendations on **social distancing and lockdowns** caused a fall of 62.5% in the detection of active leprosy cases between April and September 2020 in four States — Andhra Pradesh, Odisha, Bihar and Madhya Pradesh.

- The **second wave** has put brakes on the **Leprosy Case Detection Campaign** and the scope for getting healthcare and disability management services in institutional setup reduced.
- Further, the pandemic highlighted that the **‘vulnerable population’** is not a homogenous entity. Their vulnerability is sometimes a complex intersection of **different social variables: poverty, disability, stigma, exclusion, etc.**

What is Leprosy?

- **Bacterial Infection:** Leprosy is a **chronic, progressive bacterial infection**. It is caused by a bacterium called ***Mycobacterium Leprae***, which is an acid-fast rod-shaped bacillus.
 - It is also known as **Hansen’s Disease**.
- **One of Oldest Disease:** It is **one of the oldest diseases** in recorded history, afflicting humanity since time immemorial.
 - A written account of Leprosy dates as far back as **600 B.C.**
 - It was **well recognized in the oldest civilizations of China, Egypt and India** thousands of years ago.
- **Areas of Infection:** Skin, Peripheral nerves, Upper respiratory tract and Lining of the nose.
 - It is a disease that **leaves a terrifying image in its wake of mutilation, rejection, and exclusion** from society.
 - **Mode of Transmission:** Mainly by breathing airborne droplets from the affected individuals. It can be contacted at any age.
- **Symptoms:**
 - Red patches on the skin.
 - Skin Lesion
 - Numbness in arms, hands, and legs.
 - Ulcers on the soles of feet.
 - Muscle Weakness and excessive weight loss.
- **Long Incubation Period:** It usually takes about **3-5 years for symptoms to appear after coming into contact with Leprosy causing bacteria**.
 - The long incubation period makes it difficult for doctors to determine when and where the person got infected.
- **Cure:** Leprosy is curable with the **combination of drugs known as Multi-Drug Therapy (MDT)**.

Note:



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What are Steps Taken by India for its Eradication?

- The Government of India started the **National Leprosy Control Programme in 1955**. It was only in the 1970s that a definite cure was identified in the form of **MultiDrug Therapy**.
- The 1st Phase of the **World Bank** supported **National Leprosy Elimination Project** started from 1993-94.
- The **National Leprosy Eradication Programme** is being continued with Government of India funds from January 2005 onwards.
- The **National Health Policy 2002**, Government of India had set the goal of elimination of leprosy i.e. to reduce the no. of cases to < 1/10,000 population by the year 2005.
- The **National Leprosy Eradication Programme** achieved the goal of elimination of leprosy as a public health problem, defined as less than 1 case per 10,000 Population, at the National Level in the month of December, 2005.
 - **World Health Organisation** Global Leprosy strategy document for 2016–2020 calls for promoting inter-sectoral collaboration within countries.
- In 2017, **SPARSH** Leprosy Awareness Campaign was launched to promote awareness and address the issues of stigma and discrimination.
 - The measures included in the campaign like **contact tracing, examination, treatment, and chemoprophylaxis** are expected to bring down the number of Leprosy cases.
 - The special emphasis on **women, children and those with disabilities** are expected to flush out more hidden cases.
 - In addition to continuing to administer MDT to patients, **new preventive approaches such as Chemoprophylaxis and immunoprophylaxis** are being considered to break the chain of transmission and reach zero disease status.
- In 2018 the **Supreme Court** directed states and the Central government to roll out awareness programmes about leprosy.
 - The court said campaigns should utilise positive images and stories of those who had been cured.
- In 2019, Lok Sabha passed a bill seeking to **remove Leprosy as a ground for divorce**.

- In commemoration of the **150th birth anniversary of Mahatma Gandhi on 2nd October 2019**, the NLEP has prepared the comprehensive plan to reduce the grade of disability to less than one case per million people by October 2019.

Bonafide Plea of Juvenility**Why in News?**

Recently, the **Supreme Court**, while dismissing an appeal challenging the decision of the Punjab and Haryana High Court, held that **a plea of juvenility has to be raised in a bonafide and truthful manner**.

- The Court said that **if a document of dubious nature is relied on to seek juvenility, the accused cannot be treated to be juvenile** keeping in view that the law is a beneficial legislation.
- Juvenile offenders (age below 18 years) are given protection under the **Juvenile Justice (Care and Protection of Children) Act, 2000 (JJ Act)**.
- Under **Section 7 A of the JJ Act**, an accused person can raise the 'claim of juvenility' before "any court, at any stage, even after the final disposal of the case".

How the Juvenile Justice System Evolved in India?

- **Definition of Juvenile Justice System:** The juvenile justice system concerns children who have conflicted with the law and need care and protection.
 - In India, a person **below the age of 18 years is considered a juvenile**.
 - Minor is a person who has not attained the age of full legal responsibility and the **juvenile is a minor who has committed some offence or needs care and protection**.
 - In India, any child **below the age of 7 years** can not be convicted of any crime because of the **doctrine of Doli incapax** which means incapable of forming intent to commit a crime.
- **Main Objective of the Juvenile Justice System:** To rehabilitate young offenders and **give them a second chance**.
 - The main reason for this protection is that **children's brains are not fully developed** and they **do not have a complete sense of wrong and right**.

Note:



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- When parents have **poor parenting skills, abusive home, violence in the home**, a single parent who left their children for a long time unsupervised.
- The influence of **news, movies, web series, social media, and lack of education** are also reasons why children indulge in criminal activities.
- After the independence of India, the constitution provided some provisions under the **fundamental rights and Directive principles of state policy** to protect and develop children.
- **Children Act, 1960**: This act prohibited the imprisonment of children in any circumstances and provided care, welfare, training, education, maintenance, protection, and rehabilitation.
- **Juvenile Justice Act, 1986**: The Juvenile justice act 1986 came into force to provide uniformity of the Children Act and set the standard for protection of juveniles as per the **1959 United Nations declaration of the child**.
 - In 1959, the United Nations General Assembly adopted the Declaration of the Rights of the Child.
- **Juvenile Justice (care and protection of children) Act, 2000**: The Government of India repealed the Juvenile Justice Act (JJA) and came up with a new Act, **the Juvenile Justice (care and protection of children) Act, 2000**.
 - It had much better terminology such as '**conflict with the law**' and '**need care and protection**'.
 - Juveniles who have a conflict with law are handled by the juvenile justice board and juveniles who need care and protection are handled by the child welfare committee.
 - In 2006 Amendment was made in the Juvenile Act to make clear that juvenility is considered from the date when a crime is committed.
- **Juvenile Justice (care and protection of children) Act, 2015**: It replaced the Juvenile Act 2000.

- This act was passed by the parliament after much controversy and protest. It has introduced many changes in existing law.
- This act **allows juveniles involved in the heinous crimes age group between 16-18 are treated as adults**.
- Making the juvenile justice system more responsive and according to the changing circumstances of society.
- The Act gives a clear definition of orphaned, abandoned, surrendered children and provides an organized system for them.
- **Juvenile Justice (care and Protection) Amendment Act 2021**: Recently, Parliament passed the **Juvenile Justice (care and Protection) Amendment Act 2021**.
 - The amendment provides strength to the provision of protection and adoption of children.
 - There are many adoption cases pending before the court and to make proceedings of the court faster now the power is transferred to the district magistrate.
 - Amendment provides that the district magistrate has the authority to issue such adoption orders.

What are Other Legal Frameworks for Welfare of the children?

- **The Protection Of Children from Sexual Offences Act (POCSO), 2013**
- **Child Labour (Protection and Regulation) Act, 2016**
- **United Nation Convention on the Right of the Child (UNCRC)**
- **National Commission for Protection of Child Rights, 2005**



Note:

Science & Technology

Highlights

- Quantum Key Distribution Technology
- GMRT Reveals Fast Radio Bursts
- Indian Neutrino Observatory
- ISRO's Launch Vehicles
- Japanese Encephalitis
- Synthetic Biology
- Origami Metamaterials
- Human Immunodeficiency Virus (HIV)
- Geospatial Technology
- Variability in Ct Values

Quantum Key Distribution Technology

Why in News?

Recently, a joint team of scientists from **Defence Research and Development Organisation (DRDO)** and **Indian Institute of Technology (IIT) Delhi**, for the **first time** in the country successfully **demonstrated Quantum Key Distribution link** between Prayagraj and Vindhyachal in Uttar Pradesh, a distance of more than 100 kilometres.

- With this success, the country has demonstrated indigenous technology of secure key transfer for bootstrapping military grade communication security key hierarchy.
- Earlier, **China's satellite Micius** had sent light particles to Earth to establish the world's most secure communication link.

What is Quantum Key Distribution Technology?

- QKD, also called **Quantum Cryptography**, is a mechanism to **develop secure communication**.
- It provides a way of **distributing and sharing secret keys** that are necessary for cryptographic protocols.
 - **Cryptography** is the study of secure communications techniques that allow only the sender and intended recipient of a message to view its contents.
 - **Cryptographic algorithms** and protocols are necessary to keep a system secure, particularly when communicating through an untrusted network such as the Internet.

- The **conventional cryptosystems** used for data-encryption rely on the complexity of mathematical algorithms, whereas the security offered by quantum communication is based on the laws of Physics.

What are the Two Main Categories of QKD?

- **Prepare-and-Measure Protocols:**
 - It focuses on **measuring unknown quantum states**. This type of protocol can be **used to detect eavesdropping (spying)**, as well as how much data was potentially intercepted.
- **Entanglement-based Protocols:**
 - It focuses on **quantum states in which two objects are linked together**, forming a combined quantum state.
 - The concept of entanglement means that **measurement of one object thereby affects the other**. In this method, if an eavesdropper accesses a previously trusted node and changes something, the other involved parties will know.

How does the Quantum Key Distribution Work?

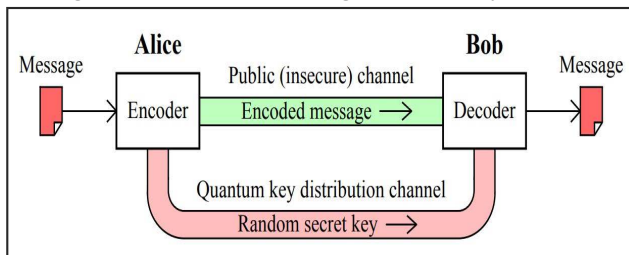
- In the QKD, encryption keys are sent as '**qubits**' (or **quantum bits**) in an **optical fibre**.
 - **Qubits** -- the **equivalent of bits in a binary system**.
 - **Optical fibers** are capable of transmitting more data over longer distances and faster than other mediums. It works on the **principle of total internal Reflections**.
- QKD implementation **requires interactions between the legitimate users**. These interactions need to be authenticated. This can be achieved through various cryptographic means.

Note:



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- QKD **allows two distant users**, who do not share a long secret key initially, to produce a common, random string of secret bits, called a secret key.
- The end-result is that **QKD can utilize an authenticated communication channel** and transform it into a secure communication channel.
- It is designed in a way that **if an illegitimate entity tries** to read the transmission, it will disturb the qubits – which are encoded on photons.
- This will **generate transmission errors**, leading to legitimate end-users being immediately informed.



Why is QKD Needed?

- QKD is **essential to address the threat** that rapid advancement in Quantum Computing poses to the security of the data being transported by various critical sectors through the current communication networks.
- **Quantum Technologies** can broadly be divided into four verticals viz. Quantum Computing, Quantum Communications, Quantum Sensors and Quantum Materials.
- The technology would be useful in **enabling various start-ups and small and medium enterprises in the domain of quantum information**.
- It will enable security agencies to **plan a suitable quantum communication network** with indigenous technology backbone.
- The **encryption is unbreakable** and that's mainly because of the way data is carried via the photon.
 - A **photon cannot be perfectly copied** and any attempt to measure it will disturb it. This means that a person trying to intercept the data will leave a trace.

What are the Challenges associated with the QKD?

- **Integration of QKD Systems into Current Infrastructure:**
 - For now, it is **currently difficult to implement** an ideal infrastructure for QKD.

- QKD is perfectly secure in theory, but in practice, **imperfections in tools like single photon detectors** create many **security vulnerabilities**.
- **Distance in which Photons Can Travel:**
 - **Modern fiber optic cables are typically limited** in how far they can carry a photon. Commonly, this range is seen to be upward of 100 km.
- **Use of QKD:**
 - QKD **relies on already having a classically authenticated channel** of communications established.
 - This means that **one of the participating users** has probably already exchanged a symmetric key in the first place, creating a sufficient level of security.
 - A system can **already be made sufficiently secure without QKD** through using another advanced encryption standard.
 - However, as the **use of quantum computers becomes more frequent**, the **possibility that an attacker could utilize quantum computing's ability** to crack into current encryption methods rises -- making QKD more relevant.

GMRT Reveals Fast Radio Bursts

Why in News?

Recently, the Astronomers of National Center of Radio Astrophysics (NCRA-TIFR) in Pune and the University of California in the US have used the **Giant Metrewave Radio Telescope (GMRT)** to map the distribution of atomic hydrogen gas from the host galaxy of a **Fast Radio Burst (FRB)** for the first time.

What are Fast Radio Bursts ?

- The **first FRB was discovered in 2007**, since when scientists have been **working towards finding the source of their origin**.
- Essentially, FRBs are **bright bursts of radio waves** (radio waves can be produced by astronomical objects with changing magnetic fields) **whose durations lie in the millisecond-scale**, because of which it is difficult to detect them and determine their position in the sky.
- These extraordinary events **generate as much energy in a thousandth of a second as the Sun does in a year**.

Note:



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- Locating where these blasts are coming from, and in particular, what galaxies they originate from, is important in determining what kinds of astronomical events trigger such intense flashes of energy.
- **One of the best-known fast radio bursts is FRB20180916B.**
 - This FRB was discovered in 2018 and is only 500 million light-years away from us in another galaxy.
 - The FRB is the closest so far and has a burst pattern that repeats every 16 days: four days of bursts, 12 days of relative quiet. That predictability makes it an ideal object for researchers to study.

What does the Study Suggest?

- The FRB (FRB20180916B) host galaxy has undergone a recent merger and that the FRB progenitor is most likely a massive star formed due to this merger event.
- The atomic hydrogen gas contained by the host galaxy was found to be ten times more than the nearby galaxies. But despite such large atomic hydrogen gas, the number of stars were relatively fewer. It thus indicates that the surplus hydrogen gas was recently acquired after a possible merger between two galaxies.

What is GMRT ?

- GMRT is an array of thirty fully steerable parabolic radio telescopes of 45 meter diameter. It is operated by the National Center for Radio Astrophysics of the Tata Institute of Fundamental Research (NCRA-TIFR).
- GMRT is an indigenous project. Its design is based on the 'SMART' concept - for Stretch Mesh Attached to Rope Trusses.
- It functions at the meter wavelength part of the radio spectrum because man-made radio interference is considerably lower in this part of the spectrum in India and there are many outstanding astrophysics problems which are best studied at metre wavelengths.
- The location for GMRT, Pune meets several important criteria such as low man-made radio noise, availability of good communication, vicinity of industrial, educational and other infrastructure and, a geographical latitude sufficiently north of the geomagnetic equator in order to have a reasonably quiet ionosphere and yet be able to observe a good part of the southern sky as well.

Indian Neutrino Observatory

Why in News

Recently, the Tamil Nadu Government has made clear to the **Supreme Court** that it does not want the **Indian Neutrino Observatory (INO)** to be set up in **Eco-Sensitive Zones** in the **Western Ghats**.

- INO will incur great cost to **wildlife, biodiversity and ignores the local opposition.**
- Eco-Sensitive Zones are areas within 10 kms around **Protected Areas, National Parks and Wildlife Sanctuaries.**



What are the arguments of the Tamil Nadu Government?

- The Government asserted that the **project falls exactly on the hill slopes of this part of the Western Ghats**, which align within it a significant tiger corridor, namely the **Mathikettan-Periyar tiger corridor**.
 - This corridor links the **Periyar Tiger Reserve** along the Kerala and Tamil Nadu borders and the Mathikettan **Shola National Park**.
 - **Quarrying and construction activities** will upset wild animals which use the corridor for seasonal migrations.
- The area is a **significant watershed and catchment zone** for the rivers **Sambhal and Kottakudi**.
- Though the experiments in the observatory would be conducted a kilometre underground, massive blasting, activities like transportation, excavations and tunnelling among others, would **jeopardise the ecological sustainability of the zone, deep in the Western Ghats**.

Note:

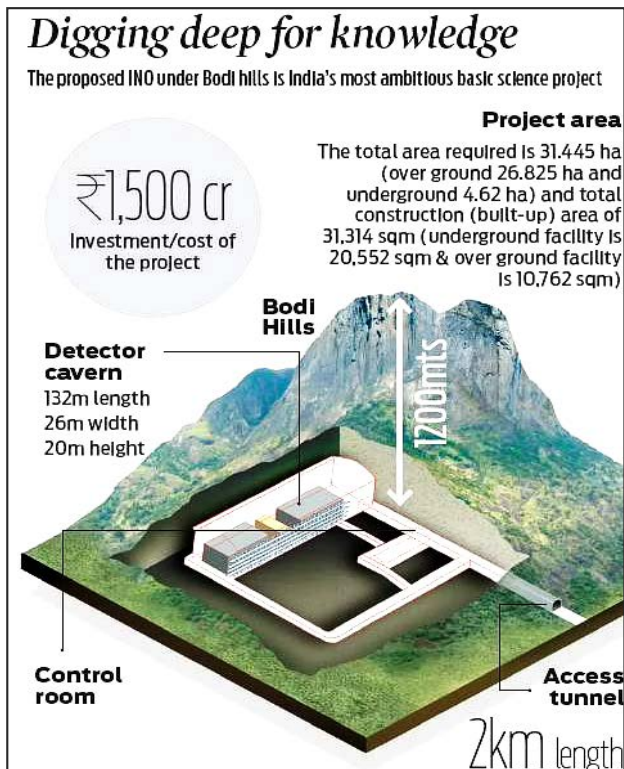


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- The protection of the Western Ghats was supreme as they are a **global biodiversity hotspot** and a treasure trove of biological diversity.
 - The specific region harbours many endemic species of flowering plants, fish, amphibians, reptiles, birds, mammals and invertebrates other than large numbers of **elephants** and **tigers**.

What is the Indian Neutrino Observatory (INO)?

- It is a proposed **particle physics research mega project**.
- The objective of the project was to study neutrinos in a **1,200-metre deep cave**.
- The project is proposed to be set up at Pottipuram village in **Theni district in Tamil Nadu**.
- The project was initially mooted by the **Institute of Mathematical Sciences** and then by the **Tata Institute of Fundamental Research**.



What is the Importance of Proposed Site Location?

- The proposed site in Theni district was **identified because the rock burden of over 1 km in all directions shields the detector from other cosmic rays**.
 - Since neutrinos can easily pass through anything, they will reach the detector while the **other particles will be filtered out by the rock in the mountain**.

- The geographical location is also peculiar as all the existing neutrino detectors (in other countries) are at latitudes larger than **35 degrees North or South**.
 - There is **none close to the equator as yet**.

What are Neutrinos?

- A neutrino is a **fundamental elementary particle**, and atmospheric neutrinos can be studied when solar radiation hits the earth's atmosphere.
- They are **very hard to detect** as they **hardly interact with other forms of matter** due to their **lack of electrical charge**.
 - However, they seem to play an important role in the universe of elementary physics, which physicists have been trying to understand for a few decades now.
- They are produced in **high-energy processes** such as within stars and in supernovae.
- On earth, they are produced by **particle accelerators** and nuclear power plants.
- They are produced in high-energy processes such as within stars and in **supernovae**. On earth, they are produced by particle accelerators and nuclear power plants.
- So far, neutrino physics has been **mostly limited to outer space sources**, observing neutrinos from farther-away stars and galaxies.

What can be the Future Applications of Neutrinos?

- **Properties of the Sun:** The visible light is emitted from the surface of the sun and neutrinos, which travel close to the speed of light, are produced in the core of the sun.
 - Studying these neutrinos can help us **understand what goes on in the interior of the sun**.
- **Constituents of the Universe:** Light coming from distant stars can be studied by astronomers, for example, to detect new planets.
 - Likewise, if the properties of neutrinos are understood better, **they can be used in astronomy to discover what the universe is made up of**.
- **Probing Early Universe:** Neutrinos interact very little with the matter around them, so they travel long distances uninterrupted. The extragalactic (originating outside the Milky Way galaxy) neutrinos we observe may be coming from the distant past.

Note:

- These undamaged messengers can give us a clue about the **origin of the universe and the early stages of the infant universe, soon after the Big Bang.**
- **Medical Imaging:** Apart from direct future uses of neutrinos, there are technological applications of the detectors that will be used to study them.
 - For instance, X-ray machines, MRI scans, etc., all came **out of research into particle detectors.**
 - Hence the INO detectors **may have applications in medical imaging.**

What are Eco- Sensitive Zones?

- Eco-Sensitive Zones or **Ecologically Fragile Areas are areas within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries.**
 - In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, even areas beyond 10 km width can be included in the eco-sensitive zone.
- ESZs are **notified by the Ministry of Environment, Forest, and Climate Change (MoEFCC)**, under **Environment Protection Act, 1986.**
- The basic aim is **to regulate certain activities around National Parks and Wildlife Sanctuaries** so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

ISRO's Launch Vehicles

Why in News?

Recently, the **Indian Space Research Organization (ISRO)** launched an **Earth Observation Satellite (EOS-04)** along with two other smaller satellites into space using a **PSLV (Polar Satellite Launch Vehicle) rocket**. This was the 54th flight of the PSLV rocket.

What are Launch Vehicles and Satellites?

- The **rockets have powerful propulsion systems that generate the huge amount of energy required to lift heavy objects like satellites** into space, overcoming the gravitational pull of the earth.
- **Satellites** carry one or more instruments that do the scientific work for which they are sent into space. Their **operational life sometimes extends up to decades.**

- But **rockets, or launch vehicles, become useless after the launch.** Rockets' only job is to take the satellites to their intended orbits.
- **Rockets have several detachable energy-providing parts.**
 - They burn different kinds of fuels to power the rocket. Once their fuel is exhausted, they detach from the rocket and fall off, often burning off in the atmosphere due to air-friction, and getting destroyed.
 - Only a small part of the original rocket goes till the intended destination of the satellite. Once the satellite is finally ejected, **this last part of the rocket either becomes part of space debris, or once again burns off after falling into the atmosphere.**

What are the Types of Launch Vehicles?

- **For Lower Earth Orbits:**
 - Several satellites need to be deposited only in the **lower earth orbits, which starts from about 180 km from earth's surface and extends up to 2,000 km.**
 - Most of the earth-observation satellites, communication satellites, and even the **International Space Station**, a full-fledged laboratory in space that hosts astronauts, function in this space.
 - It takes a smaller amount of energy to take the satellites to low-earth orbits, and accordingly smaller, **less powerful, rockets are used for this purpose.**
 - **For Higher Orbits:**
 - There are other satellites which need to go much deeper in space.
 - Geostationary satellites, for example, have to be deposited in orbits that are about 36,000 km from earth's surface.
 - The planetary exploration missions also need their rockets to leave them much deeper in space.
 - For such space missions, **much more powerful rockets are used.**
- In general, there is a **trade-off between the weight of the satellite that needs to be launched, and the distance it needs to be taken to.** The same rocket can take smaller satellites much deeper into space compared to a heavier satellite.

Note:



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What are the Launch vehicles used by ISRO ?

Satellite Launch Vehicle (SLV)	<ul style="list-style-type: none"> ➤ The first rocket developed by ISRO was simply called SLV, or Satellite Launch Vehicle. ➤ It was followed by the Augmented Satellite Launch Vehicle or ASLV.
Augmented Satellite Launch Vehicle (ASLV)	<ul style="list-style-type: none"> ➤ SLV and ASLV both could carry small satellites, weighing up to 150 kg, to lower earth orbits. ➤ ASLV operated till the early 1990s before PSLV came on the scene.
Polar Satellite Launch Vehicle (PSLV)	<ul style="list-style-type: none"> ➤ PSLV's first launch was in 1994, and it has been ISRO's main rocket ever since. Today's PSLV, however, is vastly improved and several times more powerful than the ones used in the 1990s. <ul style="list-style-type: none"> ○ It is the first Indian launch vehicle to be equipped with liquid stages. ➤ PSLV is the most reliable rocket used by ISRO till date, with 52 of its 54 flights being successful. <ul style="list-style-type: none"> ○ It successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013 – that later traveled to Moon and Mars respectively. ➤ ISRO currently uses two launch vehicles – PSLV and GSLV (Geosynchronous Satellite Launch Vehicle), but there are lots of different variants of these.

Geosynchronous Satellite Launch Vehicle (GSLV)

- GSLV is a much **more powerful rocket**, meant to carry **heavier satellites much deeper into space**. Till date, GSLV rockets have carried out 18 missions, of which **four ended in failure**.
- It **can take 10,000-kg satellites** to lower earth orbits.
- The indigenously developed **Cryogenic Upper Stage (CUS)**, forms the third stage of GSLV Mk II.
- Mk-III versions have made ISRO entirely **self-sufficient for launching its satellites**.
 - Before this, it used to depend on the European Ariane launch vehicle to take its heavier satellites into space.

Small Satellite Launch Vehicle (SSLV)

- SSLV is targeted at rising global demand for the launch of small and micro-satellites.
- SSLV is meant to offer **cost-effective launch services for satellites up to 500 kg**.
- It is supposed to carry an indigenous earth observation satellite EOS-03 into space.

Reusable Rockets/ Future Rockets

- The future rockets are meant to be reusable. Only a small part of the rocket would be destroyed during the mission.
- The bulk of it would **re-enter the earth's atmosphere and land very much like an airplane**, and can be used in future missions.

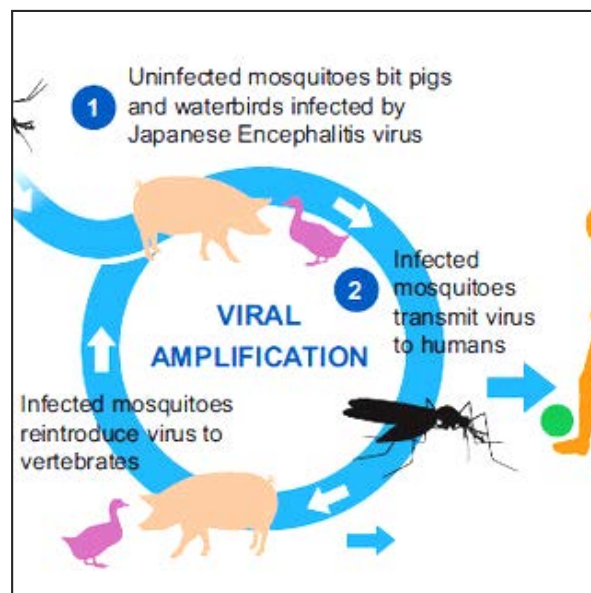
Note:



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- Reusable rockets would **cut down on costs and energy**, and also reduce space debris, which is becoming a serious problem because of the large number of launches.
- Fully-reusable rockets are still to be developed, but partially-reusable launch vehicles are already in use.
- ISRO has also developed a reusable rocket, called RLV-TD (Reusable Launch Vehicle Technology Demonstrator) which has had a successful test flight in 2016.

➤ Transmission:



- The disease is **transmitted to humans through bites from infected mosquitoes** of the Culex species.
- These mosquitoes **breed mainly in rice fields and large water bodies** rich in aquatic vegetation.
- Migratory birds **along with pigs in the community also play an important role in the transmission** of JE from one area to other areas.

➤ Symptoms:

- Most people infected with JE **do not have symptoms or have only mild symptoms**.
- However, a small percentage of infected people develop **inflammation of the brain** (encephalitis), with symptoms including sudden onset of headache, high fever, disorientation, coma, tremors and convulsions.

➤ Treatment:

- There is **no antiviral treatment for patients** with JE. Treatment, available, is **supportive to relieve symptoms** and stabilise the patient.

➤ Prevention:

- Safe and effective **JE vaccines** are available to prevent the disease.
- In India, **mass vaccination with JE vaccine was started** in a phased manner subsequent to the major outbreak in 2005.
- JE vaccination is **also included under the Universal Immunisation Program** of the Government of India.

Japanese Encephalitis

Why in News ?

Recently, the **National Institute of Animal Biotechnology (NIAB)**, Hyderabad has developed an immunosensor to detect Non-Structural 1 (NS1) secretory protein which is a suitable biomarker for **Japanese Encephalitis Virus (JEV)** found circulating in the blood.

- Detection of the NS1 instead of antibody has an added advantage since the **antigen is present from day 1 of the infection and hence facilitates early detection**. On the other hand, antibodies appear only after Day 4/5 of the infection.
- **NIAB** is an Indian autonomous research establishment of the Department of Biotechnology, Ministry of Science and Technology.

What is Japanese Encephalitis ?

➤ About:

- It is a disease caused by a **flavivirus that affects the membranes around the brain**.
- Japanese encephalitis virus (JEV) is also a major cause of **Acute Encephalitis Syndrome (AES)** in India.

Note:

What are the Government Initiatives Related to Japanese Encephalitis?

- In order to reduce morbidity, mortality, and disability in children due to JE/AES, Government of India under **National Programme for Prevention and Control of Japanese Encephalitis (JE)/ Acute Encephalitis Syndrome (NPPCIA)** has developed a multi-pronged strategy with the convergence of the concerned Ministries.
 - **Ministry of Health and Family Welfare:** Strengthening and expanding JE vaccination, Strengthening of public health activities, better clinical management of JE/AES Cases etc.
 - **Ministry of Jal Shakti** for the provision of safe water supply.
 - **Women and Child development** for providing high-quality nutrition to vulnerable children.
 - **Ministry of Social Justice and Empowerment** for establishing District Disability Rehabilitation Centres for disability management and rehabilitation.
 - **Ministry of Housing and Urban Affairs** for ensuring the supply of safe water in slums and towns.
 - **Ministry of Education** to provide special facilities for disabled children for their education.

Synthetic Biology

Why in News?

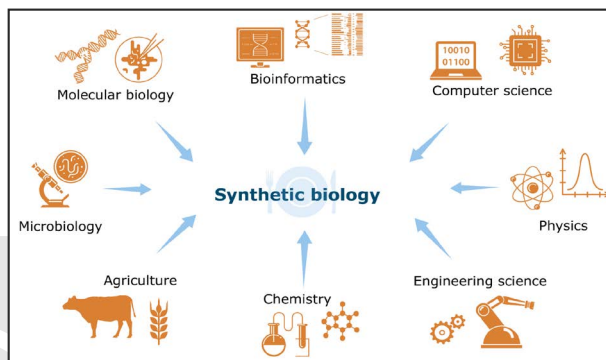
Recently, the **Department of Biotechnology**, Ministry of Science & Technology released a **draft foresight paper on synthetic biology**.

- Synthetic biology has multifarious **applications of energy, agriculture and biofuels**. Thus, there is always a perceived threat of components releasing into the open environment.
- Therefore, the document stresses on the **need for a national policy** that can consolidate India's stand on the issue.

What is Synthetic Biology?

- The term 'synthetic biology' was first used by **Barbara Hobomin in 1980**, to describe bacteria that had been genetically engineered using **recombinant DNA technology**.

- Synthetic biology refers to the science of **using genetic sequencing, editing, and modification** to create unnatural organisms or organic molecules that can function in living systems.
- Synthetic biology enables scientists to design and **synthesise new sequences of DNA from scratch**.
- The term was used to describe the synthesis of **unnatural organic molecules that function in living systems**.
 - More broadly in this sense, the term has been used with reference to efforts to **'redesign life'**.



What are Applications of Synthetic Biology?

- **Standardised Biological Parts-** Identify and categorise standardised genomic parts that can be used (and synthesised quickly) to build new biological systems.
- **Applied Protein Design-** Redesign existing biological parts and expand the set of natural protein functions for new processes.
 - For e.g, Modified rice to produce beta-carotene (a nutrient usually associated with carrots), that prevents **Vitamin A deficiency**.
- **Natural Product Synthesis-** Engineer microbes to produce all of the necessary enzymes and biological functions to perform complex multistep production of natural products.
 - For e.g, Microorganisms harnessed for **bioremediation** (use of living microorganisms to degrade environmental contaminants into less toxic forms) to clean pollutants from water, soil and air.
- **Synthetic Genomics-** Design and construct a 'simple' genome for a natural bacterium.
 - For e.g, Yeast engineered to produce rose oil as an eco-friendly and sustainable substitute for real roses that perfumers use to make luxury scents.

Note:

What are Potential Negative Impacts of Synthetic Biology?

- **Negative Environmental Health:** The intentional or accidental release of genetically engineered organisms into the environment could have significant negative impacts on both human and environmental health.
 - **Misuse of these technologies and a failure to account for unintended consequences** could cause irreversible environmental damage.
- **Do-It-Yourself Biology:** It's a movement of "citizen scientists" interested in synthetic biology experiments that has become an international phenomenon over the last decade.
 - **Often with little prior knowledge of the field, enthusiasts meet in makeshift labs to take crash courses** in biotechnology and conduct hands-on experiments.
- **Ethical Concerns:** Many of the ethical questions relevant to synthetic biology are similar to **ethical discussions related to genome editing** like:
 - Are humans crossing moral boundaries by redesigning organisms with synthetic biology techniques?
 - If synthetic biology yields new treatments and cures for diseases, who in our society will have access to them?

What are Governance, Policy And Regulatory Aspects Relevant To Synthetic Biology?

- **International Bodies & Agreements:**
 - **Convention on Biological Diversity (CBD)**
 - Cartagena Protocol on Biosafety
 - Nagoya Protocol on Access and Benefit Sharing
 - Nagoya-Kuala Lumpur Supplementary Protocol
 - **Food and Agricultural Organisation (FAO)**
 - **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**
 - **International Union for the Conservation of Nature (IUCN)**
 - **Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)**
 - **UN Convention on the Law of the Sea (UNCLOS)**
 - **Biological Weapons Convention.**
 - India is a **party to all the International governance bodies** discussed above.

➤ Indian Regulatory System:

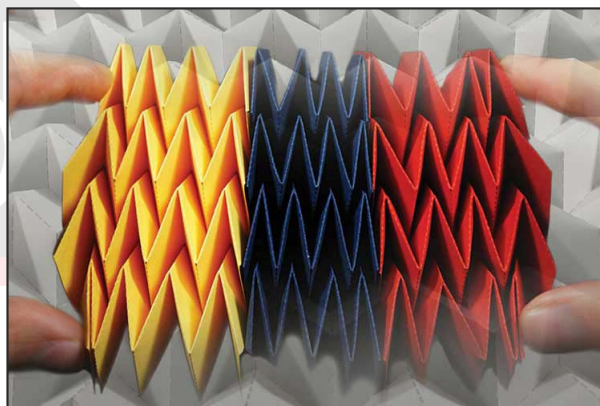
- **Drugs and Cosmetics Rules – 1988,**
- **Protection of Plant Varieties and Farmers' Rights Act, 2001,**
- **Biological Diversity Act, 2002**
- **Food Safety and Standards Act 2006**

Origami Metamaterials

Why in News?

Researchers from **Indian Institute of Technology Madras** have developed such a material, called **Origami metamaterials** which could have many uses.

- These combine the **Japanese art of paper folding (origami)** and the existing material of choice and fold it to obtain desired properties.



What are the Origami Metamaterials?

- Researchers have developed a **special class of origami metamaterials** which show a constant value of **Poisson Ratio** when subjected to stress.
 - When a **material is crushed or stretched along a particular direction**, it undergoes a modification in the perpendicular, or lateral, direction.
 - The **ratio between the deformation along the force and the deformation in a direction lateral to the force** is called the Poisson ratio. The Poisson ratio **can be positive or negative**.
 - In order to be useful, **materials need to maintain a constant Poisson ratio** when they crumple under pressure. However, they are prone not to do so, and the Poisson ratio varies as they deform.

Note:

- The benefit is that the **observed property does not depend** on whether it is made from a **sheet of paper, polymer or metal** but under impact the sheet folds up along the creases.

What are Metamaterials?

- Metamaterials are **smart materials that have a wide range of properties** and can be so different from each other that there isn't a definition for them, although what they all have in common is that they are from an artificial origin.
- This means that **they aren't found in nature** and have been created by people.

What are the Properties of the Metamaterials?

- Apart from their artificial origin, metamaterials are characterized because they have **unusual electromagnetic properties**, coming from their structure and arrangement and not from their composition.
- This is similar to what happens with **graphite, diamond and graphene**, since they are all made of carbon, but due to their structure, they have very different properties.
- One of the properties that can vary the metamaterials can be, for example, that the **material has a negative refractive index**.
 - This makes **these materials of great importance in optics** and electromagnetism applications.

What are the Potential

Applications of Metamaterials?

- Potential Applications of Metamaterials include **optical filtering, medical devices, remote aerospace operations**, sensor detectors, solar power management, crowd control, radomes, antenna lenses, and even **earthquake** protection.
- **Lenses made of metamaterials** may even enable imaging below the diffraction limit that prevents conventional optical lenses from magnifying any further.

Human Immunodeficiency Virus (HIV)

Why in News?

Recently, a **US patient with leukemia has become the first woman and the third person to date to be cured of HIV after receiving a stem cell transplant** from a donor who was naturally **resistant to the virus that causes Acquired ImmunoDeficiency Syndrome (AIDS)**.

- Leukemia is a **blood cancer** caused by a rise in the number of **white blood cells** in the body.
- AIDS is a set of symptoms or syndrome caused by HIV. But it is **not necessary that a person infected with HIV will definitely develop AIDS**.

What is Human Immunodeficiency Virus (HIV)?

- HIV attacks CD4, a type of **White Blood Cell** (T cells) in the body's immune system.
 - T cells are those cells that move **around the body detecting anomalies and infections in cells**.
- After entering the body, HIV multiplies itself and destroys CD4 cells, thus severely damaging the human immune system.
 - Once this virus enters the body, it can never be removed.
- The CD4 count of a person infected with HIV reduces significantly. In a healthy body, CD4 count is between 500- 1600, but in an infected body, it can go as low as 200.

What is the Prevalence of HIV/AIDS in India?

- As per the **India HIV Estimation 2019 report**, the estimated adult (15 to 49 years) HIV prevalence trend has been declining in India since the epidemic's peak in the year 2000 and has been stabilising in recent years.
 - In 2019, HIV prevalence among adult males was estimated at 0.24% and among adult females at 0.20% of the population.
- There were **23.48 lakh Indians living with HIV in 2019**. Maharashtra had the maximum numbers followed by Andhra Pradesh and Karnataka.

Note:

What are Stem Cells?

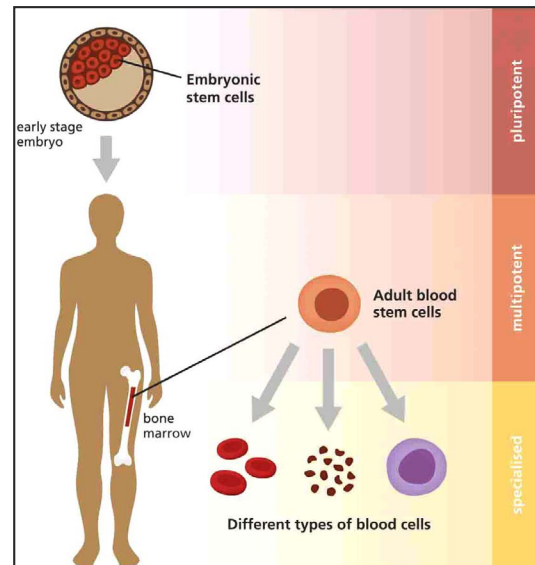
- Stem cells are **special cells that can make copies of themselves** and change into the many different kinds of cells that the body needs. They have **two unique properties** that enable them to do this:
 - They can divide over and over again to produce new cells.
 - As they divide, they can change into the other types of cell that make up the body.
- There are **several kinds of stem cells** and they are found in different parts of the body at different times.
- **Cancer and cancer treatment** can damage the **hematopoietic stem cells**. **Hematopoietic stem cells** are stem cells that turn into blood cells.

Why are Stem Cells useful?

- **Research:** It helps in understanding the basic biology of how living things work and what happens in different types of cell during disease.
- **Therapy** – In replacing lost or damaged cells that the bodies can't replace naturally.

What are the Three Main Types of Stem Cell?

- **Embryonic Stem Cells:**
 - They **supply new cells for an embryo** as it grows and develops into a baby.
 - These stem cells are **said to be pluripotent**, which means they can change into any cell in the body.
- **Adult Stem Cells:**
 - They supply **new cells as an organism grows** and to replace cells that get damaged.
 - Adult stem cells are **said to be multipotent**, which means they can only change into some cells in the body, not any cell, for example:
 - Blood (or 'haematopoietic') stem cells can only replace the various types of cells in the blood.
- **Induced Pluripotent Stem Cells:**
 - 'Induced' means that they are **made in the lab by taking normal adult cells**, like skin or blood cells, and reprogramming them to become stem cells.
 - Just like embryonic stem cells, they are **pluripotent so they can develop into any cell type**.



What is Stem Cells Transplant?

- A **bone marrow transplant** is a medical treatment that **replaces one's bone marrow with healthy cells**. The replacement cells can **either come from the person's own body or from a donor**.
- A bone marrow transplant is also **called a stem cell transplant** or, more specifically, a **hematopoietic stem cell transplant**.
- Transplantation can be **used to treat certain types of cancer**, such as leukemia, myeloma, and lymphoma, and other blood and immune system diseases that affect the bone marrow.

Geospatial Technology

Why in News?

On the Occasion of the 1st Anniversary of the **Release of Geospatial Data**, the Government said that **geospatial technology** along with **Drones** will survey all the over 6 lakh Indian villages under the **SVAMITVA scheme**. Also the **pan-India 3D Maps** will be prepared for **100 Indian cities**.

- **Geospatial Policy** will be announced soon as the **liberalisation of the guidelines** has yielded very positive outcomes within one year's time.
- **SVAMITVA Scheme** is a reformative step towards establishment of clear ownership of property in rural inhabited (Abadi) areas.

Note:



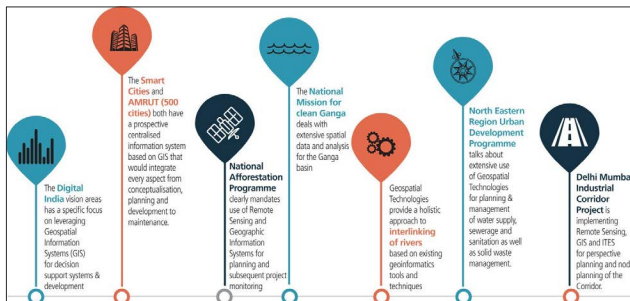
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What is Geospatial Technology?

- Geospatial technology **uses tools like GIS (Geographic Information System), GPS (Global Positioning System) and Remote Sensing** for geographic mapping and analysis.
- These tools **capture spatial information about objects, events and phenomena** (indexed to their geographical location on earth, geotag). The location data **may be Static or Dynamic**.
- Static location data include position of a road, an earthquake event or malnutrition among children in a particular region while dynamic location data include data related to a moving vehicle or pedestrian, the spread of an infectious disease etc.
- The technology may be used **to create intelligent maps to help identify spatial patterns in large volumes of data**.
- The technology **facilitates decision making based on the importance and priority of scarce resources**.

What about India's Geospatial Sector?

- India has a robust ecosystem in geospatial, with the **Survey of India (SoI)**, the **Indian Space Research Organisation (ISRO)**, Remote Sensing Application Centres (RSACs), and the National Informatics Centre (NIC) in particular, and all ministries and departments, in general, using geospatial technology.
- In 2021, the geospatial market was **dominated by defence and intelligence** (14.05 %), urban development (12.93 %) and utilities (11 %) segments, cumulatively accounting for 37.98% of the total geospatial market.
- In 2021, the Ministry of Science and Technology released new guidelines for the Geo-Spatial Sector in India, which deregulates existing protocol and liberalises the sector to a more competitive field.



Why is Geospatial Technology important for India?

- **A Potential Sector:** The sector has potential to grow to Rs 63,100 crore at 12.8% by the end of 2025 as per India Geospatial Artha Report 2021.
- **Employment:** Private Companies like Amazon, Zomato etc. use this technology to smoothly conduct their delivery operations which supports livelihood generation.
- **Implementation of Schemes:** The schemes like the **Gati Shakti program** can be smoothly implemented using geospatial technology.
- **Make in India:** Focusing on the sector allows Indian companies **to develop indigenous apps like an Indian version of google maps**.
- **Management of Land records:** Using the technology, the data related to a large number of landholdings can be appropriately tagged and digitised.
 - It will not only help better targeting but also **reduce the quantum of land disputes in courts**.
- **Crisis Management:** Technology and logistics were perfectly supported through the use of geospatial technology during the Covid-19 vaccination drive.
- **Intelligent Maps and Models:** Geospatial technology may be used to create intelligent maps and models that may be interactively queried to get the desired results in a STEM (Science Technology Engineering and Mathematics) application or may be used to advocate social investigations and policy-based research.

What are the Challenges?

- There is **no demand for geospatial services** and products on a scale linked to India's potential and size.
 - This is **mainly due to the lack of awareness among potential users** in government and private.
- The other hurdle has been the **lack of skilled manpower** across the entire pyramid.
- The **unavailability of foundation data**, especially at high-resolution, is also a constraint.
 - Essentially, foundation data can be seen as common data tables which are shared between multiple applications or processes which are supposed to create a sturdy foundation for good service automation and management
- The **lack of clarity on data sharing and collaboration** prevents co-creation and asset maximisation.
- There are still **no ready-to-use solutions especially built** to solve the problems of India.

Note:



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Way Forward

- **Establishing a Geo-Portal and Data Cloud:** There is a need to establish a geo-portal to make all public-funded data accessible through data as a service model.
 - It is important to inculcate the culture of data sharing, collaboration and co-creation.
- **Generation of Foundation Data:** This should include the Indian national digital Elevation Model (InDEM), data layers for cities, and data of natural resources.
- **Bachelor's Programme in Geospatial:** India should start a bachelor's programme in geospatial in the Indian Institutes of Technology and the National Institutes of Technology. Besides these, there should be a dedicated geospatial university.
 - These programmes will propel research and development efforts which are crucial for the development of technologies and solutions locally.
- **Regulation:** National organisations like Sol and ISRO should be entrusted with the responsibility of regulation and the projects related to the nation's security and scientific significance.
 - These organisations should not compete with entrepreneurs for government business as the latter remains in a disadvantageous position.
- **Finalisation of Policies:** The draft National Geospatial Policy (NGP) and the Indian Satellite Navigation Policy (SATNAV Policy) should be duly finalized to augment the sector.

Variability in Ct Values

Why in News ?

Recently, a survey of 700 laboratories in the US using standardised proficiency testing material from the same batch found a variability in Ct (Cycle Threshold) values by 14 cycles.

- Even within the same test at the same lab the Ct values could vary by 3 cycles for different target genes, and up to 12 cycles for the same target gene across labs.

What is the Cause of Variability in Ct Values ?

- **Dynamic Measure and Evolves Rapidly:**
 - A low Ct value at the time of diagnosis does not mean that it will stay low the next day.
 - Similarly, a swab done very early in the infection may reveal a high Ct value, which if repeated a day or two later, may reveal a lower Ct value.

- It is possible for this reason that Ct values have not been convincingly correlated with disease severity, and serve no role in predicting the trajectory for a patient (yet, this is commonly used as an argument to prescribe tests and medicines).

➤ Influence of Technical and Logistical factors:

- The way specimens are collected, the type of specimen, the medium in which the swab is transported, the time lag between collection of the specimen and processing.
- All of this can influence the quantum of viral genetic material present, and subsequently, the Ct value.

What is RT-PCR Test and Ct Value ?

➤ RT-PCR Tests:

- In an RT-PCR (Reverse Transcription Polymerase Chain Reaction) test, RNA (Ribonucleic acid) is extracted from the swab collected from the patient. It is then converted into DNA (Deoxyribonucleic acid), which is then amplified.
- Amplification refers to the process of creating multiple copies of the genetic material - in this case, DNA.
 - This improves the ability of the test to detect the presence of the virus.
- Amplification takes place through a series of cycles—one copy becomes two, two becomes four, and so on—and it is after multiple cycles that a detectable amount of virus is produced.

➤ Ct Value:

- Ct is short for 'Cycle Threshold'.
- The Ct value refers to the number of cycles after which the virus can be detected.
- If a higher number of cycles is required, it implies that the virus went undetected when the number of cycles was lower.
- The lower the Ct value, the higher the viral load—because the virus has been spotted after fewer cycles.
- It has been found that the time since the onset of symptoms has a stronger relationship with Ct values as compared to the severity of the disease.



Note:

Environment & Ecology

Highlights

- Draft Policy Framework for Distributed Renewable Energy
- Greater One-Horned Rhino
- Sustainable Cities India Program
- Carbon Capture and Utilisation Technologies
- Saltwater Crocodile
- Annual Frontiers Report 2022
- Army Tag for New Gecko
- Plastic Waste Management (Amendment) Rules, 2022

Draft Policy Framework for Distributed Renewable Energy

Why in News?

Recently, the **Union Ministry of New and Renewable Energy (MNRE)** released a draft policy framework on **14th February 2022** for **DRE livelihood applications**.

- The aim is to achieve the objective of a **decentralised and distributed renewable energy supply in the country**, particularly for rural populations with little or no access to power.

What are Provisions of the Draft Policy Framework?

- **Committee to Monitor the Progress:**
 - MNRE proposed **forming a committee to monitor the progress of DRE projects**, which will meet at least **once every six months**.
 - Within the committee, each member ministry shall nominate the main point of contact for inter-ministerial collaboration.
 - Depending on the scheme being implemented on DRE livelihood application, the committee **may co-opt additional ministries / departments as members**.
- **Digital Catalogue of DRE-Powered Solutions:**
 - MNRE will make **available a digital catalogue of DRE-powered solutions** to be used by various stakeholders to raise awareness.

What are the main Objectives Outlined in the New Framework?

- Enabling a **market-oriented ecosystem**.
- Increasing the **adoption of DRE-based livelihood solutions** by enabling easy finance for the end-user.
- Encouraging development and management of high-quality products.
- **Developing effective DRE livelihood applications** through innovation as well as research and development.
- **Establishing energy-efficiency standards** for high-potential livelihood products
- Using applications powered by **mini / micro-grids operating in hybrid mode** along with the main grid.

What is the Significance of Distributed Renewable Energy?

- DRE and its downstream applications **offer an opportunity to not only meet India's climate and energy access targets**, but also provide attractive returns to financial investors.
- It also **provides pathways for India to reduce import-dependence on crude oil** as well as create economic growth and jobs in the long run.
- In addition, addressing existing policy and financing gaps would **not only allow for better targeting and risk-hedging of government spending programs**, but would also **allow capital to be recycled efficiently**, thereby enhancing both the duration and magnitude of the impact.

Note:



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What are the Issues with DRE?

- **Lack of Technology:**
 - In order to use **renewable energy in their livelihoods**, people need access to technology and financing, which are **not available to most rural households** in India despite the existence of several technology options to deploy small-scale renewable energy-based livelihood applications.
 - **Local communities** in the villages often **find it difficult to pay upfront for these innovations**.
- **Unique Challenge for Women:**
 - **Microbusinesses, under-represented groups and women face unique challenges** when it comes to acquiring assets. As a result, businesses that use operating expense-based financial models, such as pay-as-you-go or leasing, may be eligible for credit facilitation.
- **Others:**
 - **Lack of proper financing channels, consumer awareness, consumer affordability and quality products / standards** are some of the **major challenges facing DRE in India**.

Greater One-Horned Rhino

Why in News?

Recently, a case of poaching of the world-famous one-horned rhino has been suspected inside the Kaziranga National Park in Assam.



What are the Key Points related to One-Horned Rhino?



- **About:**
 - There are **five species of rhino** – **white and black rhinos in Africa**, and the **greater one-horned, Javan and Sumatran rhino species in Asia**.
 - **IUCN Red List Status:**
 - **Black Rhino:** Critically endangered. Smaller of the two African species.
 - **White Rhino:** Near Threatened. Researchers have created an embryo of the northern white rhino by using In Vitro Fertilization (IVF) process.
 - **One-Horned Rhino:** Vulnerable
 - **Javan:** Critically Endangered
 - **Sumatran Rhino:** Critically Endangered. It has gone extinct in Malaysia.
 - Only the Great One-Horned Rhino is **found in India**.
 - Also known as Indian rhino, it is the largest of the rhino species.
 - It is identified by a **single black horn and a grey-brown** hide with skin folds.
 - They primarily graze, with a diet consisting almost entirely of grasses as well as leaves, branches of shrubs and trees, fruit, and aquatic plants.
- **Habitat:**
 - The species is restricted to small habitats in Indo-Nepal terai and northern West Bengal and Assam.
 - In India, rhinos are mainly found in Assam, West Bengal and Uttar Pradesh.

Note:

- Assam has an estimated 2,640 rhinos in four protected areas, i.e. **Pabitora Wildlife Reserve**, Rajiv Gandhi Orang National Park, Kaziranga National Park, and **Manas National Park**.

What is Viral Load?

- It refers to the **amount of genetic material, commonly RNA**, of a virus present in an infected person's blood.
- This is expressed as the **total number of viral particles present in each millilitre of blood**.
- A higher viral load in the blood means that **the virus is replicating and the infection is progressing**.
- An infected person with a high viral load is **more likely to shed more virus particles**, in the process known as "viral shedding".

About 2,400 of them are in the **Kaziranga National Park and Tiger Reserve (KNPTR)**.

- **Protection Status:**
 - **IUCN Red List:** Vulnerable.
 - **CITES:** Appendix I (Threatened with extinction and CITES prohibits international trade in specimens of these species except when the purpose of the import is not commercial, for instance for scientific research).
 - **Wildlife Protection Act, 1972:** Schedule I.
- **Threats:**
 - Poaching for the horns
 - Habitat loss
 - Population density
 - Decreasing Genetic diversity.

What are the Conservation Efforts ?

- The **five rhino range nations** (India, Bhutan, Nepal, Indonesia and Malaysia) have signed a declaration 'The New Delhi Declaration on Asian Rhinos 2019' for the conservation and protection of the species.
- Recently, the Ministry of Environment Forest and Climate Change (MoEFCC) has begun a project to create **DNA profiles of all rhinos** in the country.
- **National Rhino Conservation Strategy:** It was launched in 2019 to conserve the greater one-horned rhinoceros.
- **Indian Rhino Vision 2020:** Launched in 2005, it was an ambitious effort to attain a wild population of at least 3,000 greater one-horned rhinos spread over seven protected areas in the Indian state of Assam by the year 2020.

Sustainable Cities India Program

Why in News?

Recently, the **World Economic Forum** and the **National Institute of Urban Affairs (NIUA)** signed a MoU to collaborate on a jointly designed '**Sustainable Cities India program**'.

- The 'Sustainable Cities India' intends to enable cities to decarbonise in a systematic and sustainable way that will reduce emissions and deliver resilient and equitable urban ecosystems.
- This initiative is in synergy with India's commitment to turn **net zero by 2070 as a climate mitigation response at COP26**.

What are the Key Points of 'Sustainable Cities India Program'?

- The program aims to create an **enabling environment for cities to generate decarbonization solutions** across the energy, transport, and the built environment sectors.
- The Forum and NIUA will adapt the **Forum's City Sprint process and Toolbox of Solutions** for decarbonization in the context of five to seven Indian cities across two years.
 - **City Sprint Process:** The City Sprint process is a series of multi-sectoral, multi-stakeholder workshops involving business, government, and civil society leaders to enable **decarbonization, especially through clean electrification and circularity**.
 - **Toolbox of Solutions:** It provides a digital platform containing over 200 examples of clean electrification, efficiency and smart infrastructure best practices and case studies across buildings, energy systems and mobility from over 110 cities around the world.

What is the Need for Decarbonisation?

- As per the **World Economic Forum's Global Risks Report 2022**, densely populated countries that are highly dependent on agriculture, such as India, are especially vulnerable to climate insecurity.
 - Decarbonization in cities is a real opportunity to keep global warming well **below 2°C** and cities in India can make an enormous contribution in reaching this goal.

Note:



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- The **World Economic Forum's Net Zero Carbon Cities' mission** is to create an enabling environment for clean electrification and circularity, resulting in urban decarbonization and resilience.
- The program aims to do this by fostering public-private collaboration to bridge the gap across the energy, built environment and transport sectors.

What is NIUA?

- Established in 1976, the **National Institute of Urban Affairs (NIUA)** is India's leading national think tank on urban planning and development.
- 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 urbanizing India**, and pave the way for more inclusive and sustainable cities of the future.

What Initiatives are Taken by Government of India's for Urban Development?

- **Smart Cities Mission.**
- **Atal Mission for Urban Rejuvenation and Urban Transformation (AMRUT).**
- **Pradhan Mantri Awas Yojana-Urban (PMAY-U).**
- **Integrated Command and Control Centres (ICCCs).**
- **Climate Smart Cities Assessment Framework 2.0.**
- **TULIP-The Urban Learning Internship Program.**

Carbon Capture and Utilisation Technologies

Why in News?

According to a study conducted by **Radboud University**, most **Carbon Capture and Utilisation and Storage (CCUS) technologies**, which suck carbon dioxide (CO₂) from the atmosphere and convert it into fuel or other valuable products, might fail to help the world reach **Net Zero emissions by 2050**.

- The study noted that a majority of these systems are **energy intensive and the resultant product can also release CO₂ into the atmosphere**.
- 'Net zero emissions' refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

What are CCUS?

- **Carbon Capture, Utilization, and Storage (CCUS)** encompasses **methods and technologies to remove CO₂ from the flue gas and from the atmosphere**, followed by **recycling the CO₂ for utilization and determining safe and permanent storage options**.
- CO₂ captured using CCUS technologies is **converted into fuel** (methane and methanol), refrigerants and building materials.
 - The captured gas is **used directly** in fire extinguishers, pharma, food and beverage industries as well as the agricultural sector.
- CCUS technologies can play an important role in **meeting net zero targets**, including as one of few solutions to tackle emissions from heavy industry and to remove carbon from the atmosphere.
- CCUS is considered an important tool to help countries halve their emissions by 2030 and reach net-zero by 2050.
 - These goals are crucial to meet the **Paris Agreement targets** for restricting global warming to **2 degrees Celsius (°C)**, and preferable to **1.5°C**, over pre-industrial levels.

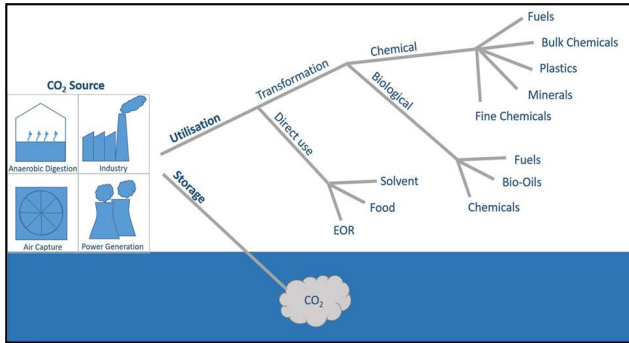
What are Applications of CCUS?

- **Mitigating Climate Change:** Despite the adoption of alternative energy sources and energy efficient systems to reduce the rate of CO₂ emissions, the cumulative amount of CO₂ in the atmosphere needs to be reduced to limit the detrimental impacts of climate change.
- **Agriculture:** Capturing CO₂ from biogenic sources such as plants and soil to boost crop growth in a greenhouse could work.
- **Industrial Use:** Combining CO₂ with steel slag - an industrial byproduct of the steel manufacturing process — to make construction materials compatible with the Paris Agreement goals.
- **Enhanced Oil Recovery:** CCU is already making inroads into India. For instance, Oil and Natural Gas Corporation signed a MoU with Indian Oil Corporation Limited (IOCL) for Enhanced Oil Recovery (EOR) by injecting CO₂.

Note:



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What are the Challenges associated with CCUS?

- **Expensive:** Carbon capture involves the development of sorbents that can effectively bind to the CO₂ present in flue gas or the atmosphere, which is expensive.
- **Lesser Demand for Recycled CO₂:** Converting CO₂ into useful chemicals of commercial importance, or utilizing CO₂ for oil extraction or remediation of alkaline industrial wastes, would add economic value to this greenhouse gas.
 - However, the demand for CO₂ is limited compared to the vast amount of CO₂ that needs to be removed from the atmosphere, to reduce the detrimental environmental impacts of climate change.

Saltwater Crocodile

Why in News?

Saltwater **Crocodiles** (*Crocodylus porosus*), used to be found in Vietnam and southern China, became extinct in these areas due to human activity.



What do we know about the Saltwater Crocodile?

- **About:**
 - It is the **largest of the 23 species** of 'extant' or living crocodilians. This includes 'true crocodiles', alligators and caimans.

- The saltie is also called the '**estuarine crocodile**' and as the name suggests, is typically found in the **brackish water of estuaries**.
- It can also **tolerate saltwater in the oceans** and can travel long distances over the open ocean, making use of tidal currents.

➤ Habitat:

- The '**saltie**' is today found in three locations in India — **the Sundarbans, Bhitarkanika National Park and the Andaman and Nicobar Islands**.
- It is one of the three crocodiles **native to the Indian Subcontinent**, along with the **mugger crocodile** (*Crocodylus palustris*) and the **gharial** (*Gavialis gangeticus*).
- It is also found in **Bangladesh, Malaysia, Indonesia, Brunei, the Philippines**, Papua New Guinea, Australia and the **Solomon Islands**.
- During antiquity the **species' range extended from the Seychelles** and Kerala, India in the west through to southeastern China, Palau and Vanuatu in the east.

➤ Threats:

- Habitat destruction, fragmentation, and transformation, fishing activities and use of crocodile parts for medicinal purposes.

What is the protection Status of Saltwater Crocodiles?

- **IUCN List of Threatened Species:** Least Concern
- **CITES:** Appendix I (except the populations of Australia, Indonesia and Papua New Guinea, which are included in Appendix II).
- **Wildlife Protection Act, 1972:** Schedule I

Annual Frontiers Report 2022

Why in News?

- Recently, the **United Nations Environment Programme (UNEP)** has released its **Annual Frontiers Report** named **Noise, Blazes and Mismatches**.
- The document has been released 10 days ahead of the **UN Environment Assembly**.

Note:

- The Frontiers report identifies and offers solutions to three environmental issues: urban noise pollution, wildfires and phenological shifts that merit attention and action from governments and the public at large to address the triple planetary crisis of climate change, pollution and biodiversity loss.

What is the United Nations Environment Programme (UNEP)?

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

What is the United Nations Environment Assembly (UNEA)?

- It is the governing body of the UN Environment Programme.
- It is the world's highest-level decision-making body on the environment.
- It meets biennially to set priorities for global environmental policies and develop international environmental law.
- It was created in June 2012, during the United Nations Conference on Sustainable Development, also referred to as RIO+20.

What are the Key Highlights of the Report?

- **Urban Noise Pollution:**
 - The unwanted, prolonged, and high-level sounds from road traffic, railways, or leisure activities, impair human health and well-being.
 - Chronic annoyance and sleep disturbance caused by traffic can result in severe heart diseases and metabolic disorders with the very young, and mostly affect the elderly and marginalised communities near busy roads.

Wildfires:

- The trends towards more dangerous fire-weather conditions are likely to increase due to rising concentrations of atmospheric greenhouse gasses and the attendant escalation of wildfire risk factors.
- Climate change can prompt extreme wildfires, generating lightning that can ignite other fires, far beyond the fire front and creating a so-called hazardous feedback loop.
 - Such extreme events are disastrous for human health and the environment.
- Wildfires have also become more common in the Savannah ecosystem, which has affected over one-fourth of species in the Savannah ecosystem.
- Wildfires are also responsible for air pollution.
 - According to a global study published in September 2021, there is a link between the impact of wildfire-related pollution and human deaths
- Wildfires seldom spread to humid tropical forests in the past. But these forests are now more vulnerable due to deforestation and forest fragmentation.

Phenological Shifts:

- Plants and animals in terrestrial, aquatic and marine ecosystems use temperature, day length or rainfall as cues for when to bear fruit, migrate or transform in other ways.
- However, climate change disrupts these natural rhythms as plants and animals are being pushed out of sync with their natural rhythms, leading to mismatches, such as when plants shift life cycle stages faster than herbivores.
 - Phenology is the timing of recurring life cycle stages, driven by environmental forces, and how species interacting within an ecosystem respond to changing conditions.

What are the Recommendations of the Report?

- Appreciating and adopting indigenous fire management techniques.
- A preventive approach, rather than reactive approach by engaging vulnerable groups, will help adapt to the wildfires.
- It is important to enhance fire-fighting capabilities and strengthen community resilience-building programmes

Note:



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- It is important to **focus on long-range weather forecasting**.
- Focus on **remote-sensing capabilities** such as satellites, ground-based radar, lightning detection as well as data handling.

Army Tag for New Gecko

Why in News?

Recently, a team of **herpetologists** have recorded a new species of **bent-toed gecko** from a wooded part of the **Umroi Military Station in Meghalaya**.

- Its scientific name is *Cryptodactylus exercitus* and its English name is **Indian Army's bent-toed gecko**.
- Further, another new bent-toed gecko, the *Cryptodactylus siahaensis* named after Mizoram's Siaha district where it was found.
- A herpetologist is someone who specializes in the **study of reptiles and amphibians**.



What are Geckos?

- Geckos are **reptiles** and are found on **all the continents except Antarctica**.
- These colorful lizards have adapted to habitats from **rainforests, to deserts, to cold mountain slopes**.
- Over a long period of time, **geckos have developed special physical features** to help them survive and avoid predators.
- Gecko tails serve many purposes. They help balance their weight as they **climb branches**, they act as fuel tanks to **store fat**, and as **camouflage** to help them disappear into their environment.
 - Geckos are also able to shed their **tails if a predator grabs them**.

- Most geckos are **nocturnal**, which means they are active at night, but day geckos are active during the day and **nibble on insects, fruits, and flower nectar**.
- Most geckos make noises such as **chirping, barking, and clicking** when they are defending their territory or attracting a mate.
- There are many species of geckos. Depending on the species, their **endangered status can range from least concern to critically endangered**.

Plastic Waste Management (Amendment) Rules, 2022

Why in News?

Recently, the **Ministry of Environment, Forest, and Climate Change** announced the **Plastic Waste Management (Amendment) Rules, 2022**, which notified the instructions on **Extended Producer Responsibility (EPR)** for plastic packaging.

- **Plastic Waste Management Rules 2016** has been amended to fast-track the elimination of **single-use plastics** and promote alternatives.
- The term **Extended Procedure Responsibility** means the responsibility of a producer for the environmentally sound management of the product until the end of its life.

What are Plastic Waste Management Rules 2016?

- It mandates the **generators of plastic waste to take steps to minimize generation** of plastic waste, prevent littering of plastic waste, and ensure segregated storage of waste at source among other measures.
- The rules also **mandate the responsibilities of local bodies, gram panchayats, waste generators, retailers and street vendors to manage plastic waste**.

What are the Provisions under the New Rules?

- **Classification of Plastics:**
 - **Category 1:** Rigid plastic packaging will be included under this category.
 - **Category 2:** Flexible plastic packaging of single layer or multilayer (more than one layer with different types of plastic), plastic sheets and covers made of plastic sheet, carry bags, plastic sachet or pouches will be included under this category.

Note:

- **Category 3:** Multi-layered plastic packaging (at least one layer of plastic and at least one layer of material other than plastic) will be included under this category.
- **Category 4:** Plastic sheet or like used for packaging as well as carry bags made of **compostable plastics** fall under this category.
- **Plastic Packaging:**
 - **Reuse of rigid plastic packaging** material has been **mandated in the guidelines** to reduce the use of fresh plastic material for packaging.
 - The **enforceable prescription of minimum level** of recycling of plastic packaging waste collected under EPR along with use of recycled plastic content will further **reduce plastic consumption** and support recycling of plastic packaging waste.
- **Extended Producer Responsibility Certificates:**
 - In a significant first, the guidelines **allow for sale and purchase of surplus extended producer responsibility certificates**.
 - This will set-up a **market mechanism for plastic waste management**.
- **Centralised Online Portal:**
 - The government has also called for **establishing a centralised online portal** by **Central Pollution Control Board (CPCB)** for the registration as well as filing of annual returns by producers, importers and brand-owners, plastic waste processors of plastic packaging waste by 31st March, 2022.
 - It would act as the **single point data repository with respect to orders** and guidelines related to implementation of EPR for plastic packaging under **Plastic Waste Management Rule, 2016**.
- **Environmental Compensation:**
 - Environmental compensation will be levied based upon **polluter pays principle**, with respect to **non-fulfilment of EPR targets** by producers, importers and brand owners, for the purpose of **protecting and improving the quality of the environment** and preventing, controlling and abating **environment pollution**.
 - The **Polluter Pays Principle** imposes **liability on a person who pollutes the environment to compensate** for the damage caused and return the environment to its original state regardless of the intent.

- **Committee to Recommend Measures:**
 - A **committee constituted** by the **CPCB under the chairmanship of CPCB chairman** will recommend measures to the environment ministry for effective implementation of EPR, including amendments to **Extended Producer Responsibility (EPR) guidelines**.
- **Annual Report on EPR Portal:**
 - **State Pollution Control Board (SPCBs)** or **Pollution Control Committees (PCCs)** have been tasked to submit an **annual report on EPR portal** with respect to its fulfillment by producers, importers and brand-owners and plastic waste processors in the state/Union Territory to the CPCB.

What is the Significance of the Guidelines?

- It will **promote development of new alternatives** to plastics and provide a roadmap for businesses to move towards sustainable plastic packaging.
- The guidelines provide a **framework to strengthen the circular economy** of plastic packaging waste.
 - A circular economy **depends on reuse, sharing, repair, refurbishment, remanufacturing and recycling of resources** to create a closed-loop system, minimising the use of resources, generation of waste, pollution and carbon emissions.
- These are important steps for **reducing pollution caused due to littered plastic waste** in the country.
 - India generates about **3.4 million tonnes of plastic waste annually**. The **United Nations Development Programme** aims to almost triple its plastic waste management to 100 cities in India by 2024.
 - Accumulation of plastic waste is **detrimental to the environment and when this waste finds its way into the sea**, there can be major harm to aquatic ecosystems, too.

What are the other Initiatives taken to Curb Plastic Waste?

- **Swachh Bharat Mission**
- **India Plastics Pact**
- **Project REPLAN**
- **Un-Plastic Collective**
- **GoLitter Partnerships Project**



Note:

History

Highlights

- Lachit Borphukan
- Shivaji Jayanti 2022
- Veer Savarkar
- Maharishi Dayanand Saraswati Jayanti
- Statehood Day of Arunachal Pradesh
- Statehood Day of Mizoram
- Goa's Liberation Struggle

Lachit Borphukan

Why in News?

Indian President will inaugurate a year-long celebration of the 400th birth anniversary of Lachit Borphukan.

- Earlier, the Prime Minister called 17th century Ahom general Lachit Borphukan a symbol of India's "Atmanirbhar military might".

Who was Lachit Borphukan?

- Born on 24th November, 1622, Borphukan was known for his leadership in the Battle of Saraighat, 1671 in which an attempt by Mughal forces to capture Assam was thwarted.
- He was the inspiration behind strengthening India's naval force and revitalising inland water transport and creating infrastructure associated with it due to his great naval strategies.
- The Lachit Borphukan gold medal is awarded to the best cadet from the National Defence Academy.
 - The medal was instituted in 1999 to inspire defence personnel to emulate Borphukan's heroism and sacrifices.
- He died on 25th April, 1672.

What was the Battle of Saraighat?

- The battle of Saraighat was fought on the banks of the Brahmaputra in Guwahati in 1671.
- It is considered as one of the greatest naval battles on a river which resulted in the victory of Ahoms over the Mughals.

What was Ahom Kingdom?

➤ Founder:

- Chaolung Sukapha was a 13th century ruler who founded the Ahom kingdom that ruled Assam for six centuries. The Ahoms ruled the land till the province was annexed to British India in 1826 with the signing of the Treaty of Yandaboo.

➤ Political Setup:

- Ahoms created a new state by suppressing the older political system of the bhuiyans (landlords).
- The Ahom state depended upon forced labour. Those forced to work for the state were called paiks.

➤ Society:

- Ahom society was divided into clans or khels. A khel often controlled several villages.
- Ahoms worshipped their own tribal gods, yet they accepted the Hindu religion and the Assamese language.
 - However, the Ahom kings did not completely give up their traditional beliefs after adopting Hinduism.
- Intermarriage with local also increased assimilation processes of Ahoms in Assamese culture.

➤ Art and Culture:

- Poets and scholars were given land grants and theatre was encouraged.
- Important works of Sanskrit were translated into the local language.
- Historical works, known as buranjis, were also written, first in the Ahom language and then in Assamese.

Note:



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Battle of Pavan Khind, 1660	➤ Fought at a mountain pass in the vicinity of fort Vishalgad, near the city of Kolhapur, Maharashtra, between the Maratha Sardar Baji Prabhu Deshpande and Siddi Masud of Adilshahi.
Sacking of Surat, 1664	➤ Fought near the city of Surat, Gujarat, between Chhatrapati Shivaji Maharaj and Inayat Khan, a Mughal captain.
Battle of Purandar, 1665	➤ Fought between the Mughal Empire and Maratha Empire.
Battle of Sinhagad, 1670	➤ Fought on the fort of Sinhagad near the city of Pune, Maharashtra between Tanaji Malusare, a commander of Maratha ruler Shivaji Maharaj and Udaybhan Rathod, fortkeeper under Jai Singh I who was a Mughal Army Chief.
Battle of Kalyan, 1682-83	➤ Bahadur Khan of the Mughal Empire defeated the Maratha army and took over Kalyan.
Battle of Sangamner, 1679	➤ Fought between the Mughal Empire and Maratha Empire. This was the last battle in which the Maratha King Shivaji fought.

➤ **Conflict with Mughals:**

- He raided Mughal territory near Ahmednagar and in Junnar, 1657.
- Aurangzeb responded to the raids by sending Nasiri Khan, who defeated the forces of Shivaji at Ahmednagar.

- Shivaji defeated a large force of Shaista Khan (Aurangzeb's maternal uncle) and the Bijapur army in Pune, 1659.
- In 1664, the wealthy Mughal trading port of Surat was sacked by Shivaji.
- In June 1665, the **Treaty of Purandar was signed** between Shivaji and Raja Jai Singh I (representing Aurangzeb).
 - As per this treaty, many forts were relinquished to the Mughals and it was agreed that Shivaji would meet Aurangzeb at Agra. Shivaji also agreed to send his son Sambhaji as well.

➤ **Arrest of Shivaji:**

- When Shivaji went to meet the Mughal emperor at Agra in 1666, the Maratha warrior felt he was insulted by Aurangzeb and stormed out of the court.
- He was arrested and kept prisoner. The **clever escape of Shivaji and his son from imprisonment in disguise** out of Agra is legendary today.
- After that there was peace between the Marathas and the Mughals until 1670.
- The jagir of Berar which was granted to Sambhaji by the Mughals was taken back from him.
- Shivaji in response attacked and recovered many territories from the Mughals in a short span of four months.
- Through his military tactics, Shivaji acquired a large part of the land in the Deccan and western India.

➤ **Granted Title:**

- He took on the titles of Chhatrapati, Shakakarta, Kshatriya Kulavantas and Haindava Dharma Dharak.
- The Maratha Kingdom founded by **Shivaji grew larger over time and became the dominant Indian power** in the early 18th century.

➤ **Death:**

- Shivaji passed away in Raigad in 1680 and was cremated at the Raigad Fort.

How was the Administration under Shivaji ?

➤ **Central Administration:**

- It was founded by Shivaji for the sound system of administration which was greatly inspired from the Deccan style of administration.

Note:



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- Most of the administrative reforms were inspired from Malik Amber reforms in Ahmednagar.
- The King was the supreme head of state who was assisted by a group of eight ministers known as the '**Ashtapradhan**'.
- The peshwa, also known as the mukhya pradhan, originally headed the advisory council of the raja Shivaji.

➤ **Revenue Administration:**

- Shivaji **abolished the Jagirdari System and replaced it with Ryotwari System**, and changes in the position of hereditary revenue officials which was popularly known as Deshmukhs, Deshpande, Patils and Kulkarnis.
- Shivaji strictly supervised the Mirasdars who had hereditary rights in land.
- The revenue system was **patterned on the Kathi system of Malik Amber** in which every piece of land was measured by Rod or Kathi.
- **Chauth and Sardeshmukhi** were other sources of income.
 - Chauth amounted to 1/4th of the standard which was paid to Marathas as a safeguard against Shivaji's forces raiding Non-Maratha territories.
 - Sardeshmukhi was an additional levy of 10% demanded from areas outside of the kingdom.

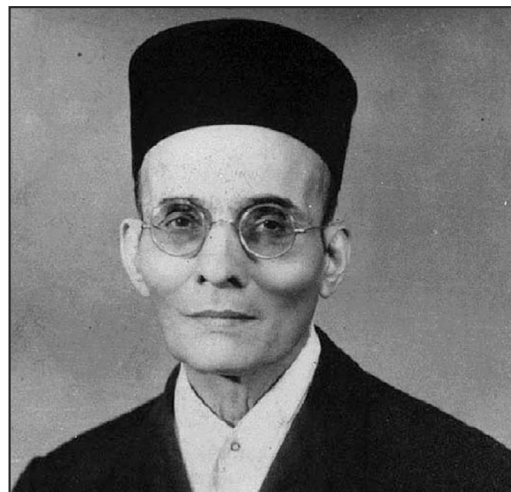
➤ **Military Administration:**

- Shivaji organized **a disciplined and efficient army**.
- The ordinary soldiers were paid in cash, but the chief and military commander were paid **through jagir grants (Saranjam or Mokasa)**.
- The army consists of Infantry i.e. Mavali foot soldiers, Cavalry i.e. Horse riders and equipment holders, Navy.

Veer Savarkar

Why in News?

Recently, the Prime Minister has **paid tributes to freedom fighter Veer Savarkar** on his Punya tithi (26th February).



Who was Veer Savarkar?

- **Birth:** Born on 28th May, 1883 in Bhagur, a village near Nashik in Maharashtra.
- **Related Organisations and Work:**
 - Founded a secret society called **Abhinav Bharat Society**.
 - Went to the United Kingdom and was **involved with organizations such as India House and the Free India Society**.
 - He was the **president of Hindu Mahasabha from 1937 to 1943**.
 - Savarkar wrote a book titled '**The History of the War of Indian Independence**' in which he wrote about the guerilla warfare tricks used in **1857 Sepoy Mutiny**.
 - He also wrote the book '**Hindutva: who is hindu?**'.
- **Trial and Sentences:**
 - **Arrested in 1909** on charges of plotting an armed revolt against the **Morley-Minto reform (Indian Councils Act 1909)**.
 - **Arrested in 1910** for his connections with the **revolutionary group India House**.
 - One of the charges on Savarkar was **abetment to murder of Nashik Collector Jackson** and the second was waging a conspiracy under Indian Penal Code 121-A against the King emperor.
 - Following the two trials, Savarkar was **convicted and sentenced to 50-years imprisonment** also known as **Kala Pani** and transported in 1911 to the Cellular Jail in the **Andaman and Nicobar Islands**.
 - **Death:** He died on **26th February 1966** due to fasting on his own wish of death.

Note:

Abhinav Bharat Society (Young India Society)

- It was a secret society founded by Vinayak Damodar Savarkar and his brother Ganesh Damodar Savarkar in 1904.
- Initially founded at Nasik as Mitra Mela, the society was associated with several revolutionaries and political activists with branches in various parts of India and London.

India House

- It was founded by Shyamji Kishan Verma in 1905 in London.
- It was opened to promote nationalist views among Indian students in London.

Free India Society

- Savarkar went to London in 1906. He soon founded the Free India Society, based on the thoughts of the Italian nationalist Giuseppe Mazzini (Savarkar had written a biography of Mazzini).

Hindu Mahasabha

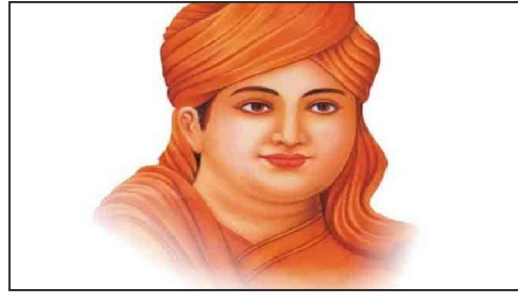
- Akhil Bharat Hindu Mahasabha is one of the oldest organizations of India as it was formed in 1907. Eminent leaders extended this Organization in 1915 on ALL India basis.
- The Eminent personalities who founded this Organisation and who presided over the ALL INDIA Sessions held include Pandit Madan Mohan Malaviya, Lal Lajpat Rai, Veer Vinayak Damodar Savarkar, etc.

Maharishi Dayanand Saraswati Jayanti

Why in News?

Maharishi Dayanand Saraswati Jayanti is celebrated every year to mark the birth anniversary of the Maharishi Dayanand Saraswati.

- This year, the day will be celebrated on 26th February.
- As per the traditional Hindu calendar, Dayanand Saraswati was born on the Dashami Tithi of Phalgun Krishna Paksha.

**Who was Maharishi Dayanand Saraswati?****Birth:**

- Swami Dayanand Saraswati was born on 12th February 1824 in Tankara, Gujarat in a Brahmin family. His parents, Lalji Tiwari and Yashodhabai were orthodox Brahmin.
- He was earlier named Mool Shankar Tiwari as he was born during Mool Nakshatra.
- He wandered as an ascetic for fifteen years (1845-60) in search of truth.
- Dayananda's views were published in his famous work, Satyarth Prakash (The True Exposition).

Contribution to the Society:

- He was an Indian philosopher, social leader and founder of the Arya Samaj.
 - Arya Samaj is a reform movement of Vedic dharma and he was the first to give the call for Swaraj as "India for Indian" in 1876.
- He was a self-taught man and a great leader of India leaving a significant impact on Indian society. During his life, he made a prominent name for himself and was known among a wide array of Princes and the public.
- The first Arya Samaj unit was formally set up by him at Mumbai (then Bombay) in 1875 and later the headquarters of the Samaj were established at Lahore.
- His vision of India included a classless and casteless society, a united India (religiously, socially and nationally), and an India free from foreign rule, with Aryan religion being the common religion of all.
- He took inspiration from the Vedas and considered them to be 'India's Rock of Ages', the infallible and the true original seed of Hinduism. He gave the slogan "Back to the Vedas".

Note:



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- He subscribed to the **Vedic notion of chaturvarna system** in which a person was **not born in any caste** but was identified as a **brahmin, kshatriya, vaishya or shudra** according to the occupation the person followed.

➤ **Contribution to the Education System:**

- He introduced a **complete overhaul of the education system** and is often considered as **one of the visionaries of modern India**.
- The **DAV (Dayanand Anglo Vedic) schools** came into existence in 1886 to realize the vision of Swami Dayanand Saraswati.
- The **first DAV School** was established at Lahore with Mahatma Hansarj as the headmaster.

What is Arya Samaj?

- It aims to **reestablish the Vedas**, the earliest Hindu scriptures, as revealed truth. He rejected all later accretions to the Vedas as degenerate but, in his own interpretation, included much post-Vedic thought.
 - During the 1920s and early 1930s **tension grew around a number of issues**. Muslims were angered by **"music-before-mosque"**, by the **cow protection movement**, and by the efforts of the Arya Samaj to bring back to the Hindu fold (**shuddhi**) those who had recently converted to Islam.
- The Arya Samaj has always had its **largest following in western and northern India**.
- The Samaj **opposes worship of murtis (images), animal sacrifice, shraddha** (rituals on behalf of ancestors), basing caste upon birth rather than upon merit, **untouchability, child marriage**, pilgrimages, priestly craft, and temple offerings.
- It upholds the **infallibility of the Vedas, the doctrines of karma** (the accumulated effect of past deeds) and samsara (the process of death and rebirth), the sanctity of the cow, the importance of the samskaras (individual sacraments), the efficacy of Vedic oblations to the fire, and programs of social reform.
- It has **worked to further female education and intercaste marriage**; has built missions, orphanages, and homes for widows; has established a network of schools and colleges; and has undertaken famine relief and medical work.

Statehood Day of Arunachal Pradesh

Why in News?

Recently, the Prime Minister of India extended his wishes to the people of **Arunachal Pradesh** on its **36th Statehood Day**.

- Through the **55th amendment to the Indian Constitution in 1986**, Arunachal Pradesh became the 24th state of the Indian Union on 20th February, 1987.



What do we Know about Arunachal Pradesh?

- **Historical Background:** During the British Colonial Rule, until 1972, the state was named as the **North-East Frontier Agency (NEFA)**.
 - On 20th January, 1972, it became a Union Territory and was named Arunachal Pradesh. It was **granted statehood by the State of Arunachal Pradesh Act, 1986**.
- **Geographical location:** The state was formed out of Assam in the year 1987.
 - In the west, **Arunachal Pradesh is bordered by Bhutan** and in the north falls the **Tibetan region of China**.
 - In the Southeastern region falls **Nagaland and Myanmar** and to the southwestern region falls **Assam**.

Note:



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- **Demography:** The capital of Arunachal Pradesh is Itanagar.
 - The total literacy rate of the state (as per Census 2011) is 65.38% with male literacy rate being 72.55% and for females, it is 57.70%.
 - The Sex Ratio of the states is 938 female per 1000 male (National: 943)
 - The state is home to 26 major tribes, there are more than 100 sub-tribes, many of them are still unexplored. About 65% of the population of the state is tribals.
- **Occupation:** Mostly the population of the state depends on Agriculture, mainly Jhum cultivation (slash and burn cultivation).
 - Other cultivation of cash crops is also done like potatoes.
 - Horticulture crops such as pineapple, apple, oranges, etc are also done.
- **Biodiversity:**
 - **State Animal:** Mithun (also known as Gayal)
 - **State Bird:** Hornbill
 - It is also home to the **Dihang Dibang Biosphere Reserve**.
- **Protected Areas:**
 - **Namdapha National Park**
 - Mouling National Park
 - Sessa Orchid Sanctuary
 - Dibang Wildlife Sanctuary
 - **Pakke Tiger Reserve**
- **Tribals of Arunachal:** The significant tribal groups include **Monpas, Nyishis, Apatanis, Noctes and Sherdukpens**.
 - **Monpas:** They are believed to be the only nomadic tribe of northeast, inhabit the West Kameng and Tawang districts, are essentially Buddhists who follow the Mahayana sect.
 - **Apatanis:** They practice pre-Aryan beliefs, which is evident from their worship of trees, rocks and plants amongst other things. They mainly practise bamboo cultivation.
 - **Noctes:** Found in the Tirap district, they follow Theravada Buddhism and Animism.

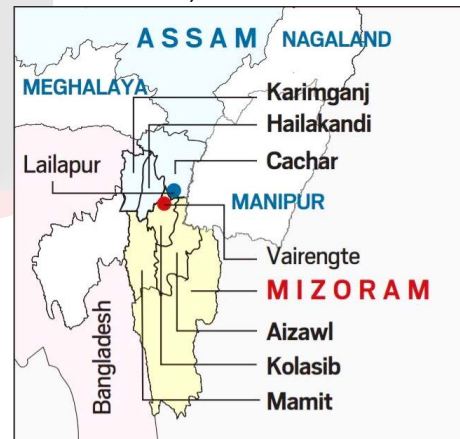
- **Sherdukpens:** A small tribal group, they are one of the most progressive tribes that can be found in Arunachal Pradesh practising agriculture, fishing and rearing of livestock. Although they have adopted Buddhism, most of their practices still remain pre-Buddhist and more Animistic.
- **Nyishis:** They are the most populous tribe of Arunachal Pradesh and are mainly involved in shifting cultivation and produce rice, millet, cucumber, etc.

Statehood Day of Mizoram

Why in News?

Recently, the Prime Minister of India extended his wishes to the people of **Mizoram** on its **36th Statehood Day** (20th February).

- The formalization of Mizoram State took place on 20th February, 1987 after the 53rd Amendment of the Indian Constitution, 1986.



What do we know about Mizoram?

- **Historical background:** The Mizo hills area became the **Lushai Hills district** within Assam at the time of independence. Further, in 1954 it was renamed the Mizo Hills District of Assam.
 - Mizoram was granted the **status of a Union Territory in 1972** after signing an accord with the moderates of the **Mizo National Front (MNF)**.
 - The Union Territory of Mizoram was conferred the status of a full state in 1986 after signing of a memorandum of settlement (**Mizoram Peace Accord**) between the Central government and the MNF.

Note:



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- **Geographical Location:**
 - **International Border:** Myanmar and Bangladesh
 - **State Border:** Tripura (northwest), Assam (north) and Manipur (northeast).
- **Demography:** Mizoram population in 2022 is estimated to be **1.27 Million** and is the **second least populous state in India after Sikkim**.
 - The Sex Ratio is **975 female per 1000 male** (National: 943).
 - The Literacy rate of the state is **91.58 %** (National: 74.04%).
- **Biodiversity:** According to **India State of Forest Report (ISFR), 2021** Mizoram has the **maximum forest cover as a percentage** of their own geographical area at (84.53%) from the **North eastern region of the country**.
 - **State Animal:** Saza (serow)
 - **State Bird:** Vavu (Hume Bartailed Pheasant).
- **Protected Areas:**
 - **Dampa Tiger Reserve**
 - Murlen National Park
 - Phawngpui National Park
 - Ngengpui Wildlife Sanctuary
 - Tawi Wildlife Sanctuary
- **Tribals:** It has the **highest concentration (percentage) of tribal population** among the north-eastern states of India.
 - Mizos consisting of 5 major and 11 minor tribes known as Awzia. The 5 major tribes include: **Lushei, Ralte, Hmar, Paihte and Pawi**.
 - The Mizos are a close-knit society with no class distinction and discrimination on grounds of sex, status or religion.
 - Mizos are agriculturists, practise "**Jhum Cultivation**" or slash- and- burn system of cultivation.
- **Festivals and Dance:** The Mizos have two main festivals- **Mim Kut and Chapchar Kut**.
 - **Mim Kut:** It is a Maize festival that is celebrated during the months of August and September, after the harvest of maize.
 - **Chapchar Kut:** It is a Spring Festival, most popular and celebrated after completion of the task of jungle clearing for "jhum" operations.
 - The most colourful and distinctive dance of the Mizo is called **Cheraw**. Long bamboo staves are used for this dance, therefore many people call it 'Bamboo Dance'.

Goa's Liberation Struggle

Why in News

Recently, the **liberation of Goa** became a **controversial topic** during the political campaign in the election of Goa.

- In **1962**, Goa was liberated from **Portuguese rule**, 15 years after India attained freedom in 1947. Goa, not becoming independent immediately after independence was because of a **variety of complex factors**.
- Goa was liberated on **19th December 1961 (Statehood Day of Goa)** by swift Indian military action that lasted less than two days.



What is the Timeline of Integration of Goa into the Indian Union?

- Relations between **India and Portugal** began amicably in 1947 after India's independence and diplomatic relations were established in 1949.
- Bilateral relations however went into decline after 1950 over Portugal's refusal to surrender its enclaves of **Goa, Daman and Diu and Dadra and Nagar Haveli on India's west coast**.
 - **Daman & Diu and Dadra and Nagar Haveli** were integrated into India in **1961**.
- Portugal had changed its constitution in 1951 to claim Goa **not as a colonial possession, but as an overseas province**.

Note:



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- The move was apparently aimed at making Goa a part of the newly formed **North Atlantic Treaty Organisation (NATO)** military alliance.
- It was intended to invoke the collective security clause of the treaty, in the event of an attack by India.
- By 1955, the two nations had **cut off diplomatic relations**, triggering a crisis which **precipitated the liberation of Goa by Indian military forces**, ending Portuguese rule over **Indian enclaves in 1961**.
- In 1961, after the failure of diplomatic efforts with the Portuguese, the Indian Government launched **Operation Vijay** and annexed Daman and Diu and Goa with the Indian mainland on 19th December.
- It brought an end to **451 years of Portuguese overseas provincial governance in Goa**.

What is the History of Goa's Freedom Movement?

- Goa became a **Portuguese colony in 1510**, when **Admiral Afonso de Albuquerque** defeated the forces of the **sultan of Bijapur, Yusuf Adil Shah**.
- By the turn of the twentieth century, Goa had started to witness an upsurge of **nationalist sentiment opposed to Portugal's colonial rule**, in sync with the anti-British nationalist movement in the rest of India.
- Stalwarts such **Tristão de Bragança Cunha**, celebrated as the father of Goan nationalism, founded the **Goa National Congress at the Calcutta session of the Indian National Congress in 1928**.
- In 1946, the socialist leader **Ram Manohar Lohia** led a historic rally in Goa that **gave a call for civil liberties and freedom, and eventual integration with India**, which became a watershed moment in Goa's freedom struggle.
- At the same time, there was a thinking that civil liberties could not be won by peaceful methods, and a more aggressive armed struggle was needed. This was the view of the **Azad Gomantak Dal (AGD)**.
- As India moved towards independence, however, it became clear that Goa would not be free any time soon, because of a variety of **complex factors like**:
 - Trauma of Partition
 - Experience of War with Pakistan
 - India wanted to showcase itself as a peace-abiding nation.
 - Portugal being member of NATO

- These factors kept the Government of India from opening another front in which the international community could get involved.
- Besides, it was **Mahatma Gandhi's** opinion that a lot of groundwork was still needed in Goa to raise the consciousness of the people, and the diverse political voices emerging within should be brought under a common umbrella first.
- The dichotomies within the groups fighting (**Satyagraha vs Military Action**) for freedom in Goa, also led to delay in liberation of Goa.
 - The idea of satyagraha emphasised the **power of truth and the need to search for truth**.
 - It suggested that if the cause was true, if the struggle was against injustice, then **physical force was not necessary** to fight the oppressor.

What are the Salient Features of Goa's Geography?

- **About:**
 - Goa is located on the **southwestern coast of India** within the **region known as the Konkan**, and geographically **separated from the Deccan highlands by the Western Ghats**.
- **Capital:**
 - Panji.
- **Official Language:**
 - Konkani which is one of the 22 languages from the **Eight Schedule**.
- **Borders:**
 - It is surrounded by **Maharashtra** to the north and **Karnataka** to the east and south, with the **Arabian Sea** forming its western coast.
- **Geography:**
 - The **highest point of Goa is Sonsogor**.
 - Goa's seven **major rivers** are the **Zuari, Mandovi, Terekhol, Chapora, Galgibag, Kumbarjua canal, Talpona and the Sal**.
 - Most of Goa's **soil cover is made up of laterites**.
- **Wildlife Sanctuaries and National Parks:**
 - Dr. Salim Ali Bird Sanctuary
 - **Mhadei Wildlife Sanctuary**
 - **Netravali Wildlife Sanctuary**
 - **Cotigao Wildlife Sanctuary**
 - **Bhagwan Mahaveer Sanctuary**
 - Mollem National Park



Note:

Geography

Highlights

- Tectonic Evolution of Greater Maldivé Ridge

Tectonic Evolution of Greater Maldivé Ridge

Why in News?

In a recent study, an Indian researcher traced the **tectonic evolution** and the nature of the Greater Maldivé Ridge (GMR).

- It is a **very crucial geodynamic feature in the western Indian Ocean** whose origin has been the centre of many a scientific debate.
- The study was conducted by the **Indian Institute of Geomagnetism**, Mumbai, an autonomous institute of the **Department of Science & Technology**, Govt. of India.

What is a Tectonic Plate?

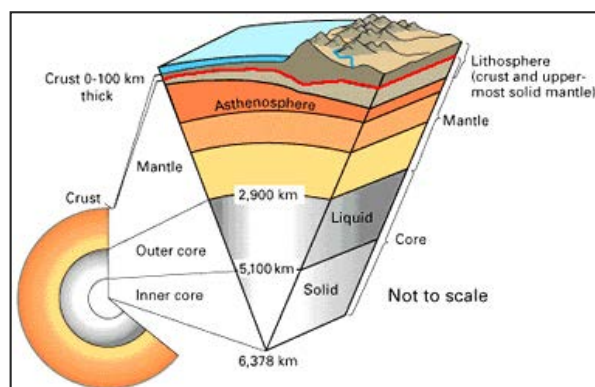
- A tectonic plate (also called lithospheric plate) is a **massive, irregularly-shaped slab of solid rock, generally composed of both continental and oceanic lithosphere**.
 - The lithosphere **includes the crust and top mantle** with its thickness range varying between 5-100 km in oceanic parts and about 200 km in the continental areas.
 - The concept of Tectonic Plates was **first introduced in 1967**.
- A tectonic plate may be a continental plate or an oceanic plate, depending on which of the two occupies the larger portion of the plate.
 - The **Pacific plate is largely an oceanic plate whereas the Eurasian plate is a continental plate**.
- The **tectonic plates are not fixed but constantly move horizontally over the Asthenosphere** as rigid units.
 - Sometimes these plates collide, move apart, or slide next to each other which leads to Earthquakes or Volcanic Eruptions.

What is a Mid-Ocean Ridge?

- A mid-ocean ridge or mid-oceanic ridge is an **underwater mountain range**, formed by plate tectonics.

What is the Mohorovičić Discontinuity?

- The Mohorovicic Discontinuity, or "Moho," is the **boundary between the crust and the mantle**. The red line in the diagram shows its location.
- In geology the word "**discontinuity**" is used for a **surface at which seismic waves change velocity**.
- One of these surfaces exists at an average depth of **8 kilometres beneath the ocean basin** and at an average depth of about **32 kilometres beneath the continents**.
- At this discontinuity, **seismic waves accelerate**. This surface is known as the Mohorovicic Discontinuity or often simply referred to as the "Moho."
- The Mohorovicic Discontinuity was **discovered in 1909 by Andrija Mohorovicic**, a Croatian seismologist.



What is the Greater Maldivé Ridge ?

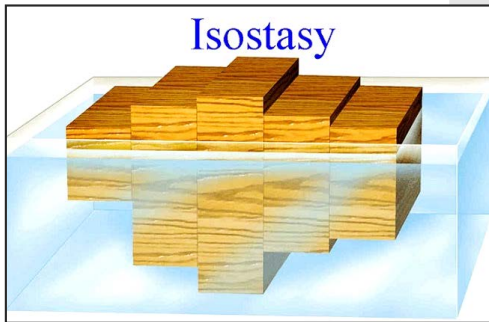
- The Maldivé Ridge is an **aseismic ridge that is not associated with earthquake activities**. This ridge, located in the western Indian Ocean, southwest of India, is not well investigated.

Note:

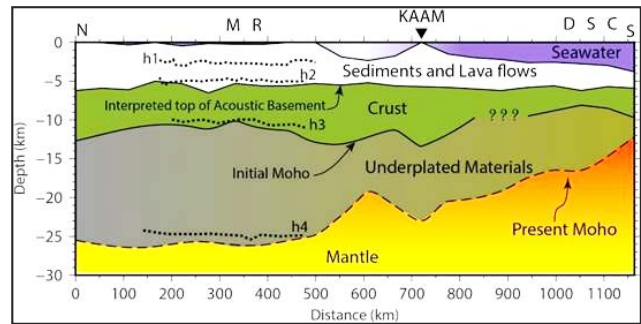
- It is of **paramount importance to gain knowledge on the structure and geodynamics of aseismic ridges** (as it provides valuable inputs towards understanding the evolution of ocean basins).

What is the Study About?

- It has **chalked the possible geological cross-sections along the GMR for the first time** with the help of satellite-derived high-resolution gravity data.
 - Satellite-derived gravity anomalies are very **helpful in deciphering the crustal architecture** where traditional shipborne geophysical data are either not available or scanty.
- The researchers postulated that the **GMR may be underlain by an oceanic crust**.
- It **provides the crustal architecture and the state of gravitational equilibrium** between Earth's crust and mantle (**isostasy**) of the Greater Maldive Ridge segment of the larger Chagos-Laccadive Ridge (CLR) system.
- **Isostasy** is the **rising or settling of a portion of the Earth's lithosphere** that occurs **when weight is removed or added in order to maintain equilibrium** between buoyancy forces that push the lithosphere upward and gravity forces that pull the lithosphere downward.



- Their study, based mainly on the interpretation of gravity anomalies (small differences in the pull of gravity caused by the lateral variations of density within the subsurface) with broadband seismic and refraction seismic data, provided for the first time a three-dimensional picture of the variation of Moho along the Greater Maldive Ridge and the adjoining ocean basins.
- The depth to the boundary between the earth's crust and the mantle or the **Mohorovicic discontinuity (Moho)** over the GMR was systematically mapped along with the finer variation of effective elastic thickness (T_e) at the place.
- The study found that **Moho is deeper over the MR segment and shallows southwards in the Deep Sea Channel region (DSC)**.



- However, the **effective elastic thickness** (a proxy for the strength of the lithosphere) **values were lower over the MR compared to the DSC region**.
- The MR and DSC region may probably be oceanic in nature with the presence of underplated materials associated with the **Reunion hotspot volcanism**.
 - Most of the volcanic activities are concentrated along or adjacent to plate boundaries, but there are **some important exceptions in which this activity occurs within plates**, called the **Hotspots**.
 - There are about **40 to 50 hot spots** estimated to be around the world.
- The research **suggests that MR might have formed in the close vicinity of the Mid-Oceanic Ridge** (where creation of a new ocean floor occurs due to divergent motion of lithospheric plates or spreading centre).
- Meanwhile, the **DSC region was under a long transform fault** (offset between the spreading centres, which neither create nor destroy lithosphere), which hindered melt production and gave rise to the gap between Chagos and MR during the **Plume-ridge interaction**.
 - A mantle **plume** is an area under the crust of Earth, **where magma is hotter than surrounding magma**.
 - A **transform fault**, in geology and oceanography, is a type of fault in which two tectonic plates slide past one another.

What is the Significance of the Study?

- The study **can help reconstruct the original Gondwanaland break up and dispersal that led to present-day configuration of continents**, continental fragments, and formation of ocean basins in the Indian Ocean.
- The results from their study **can provide additional constraints in understanding the plate-tectonic evolution** of the Indian Ocean, better.



Note:

Art and Culture

Highlights

- *Devayatanam: Conference on Temple Architecture*

Devayatanam: Conference on Temple Architecture

Why in News?

Recently, the **Union Culture Minister** inaugurated **Devayatanam**, a one-of-a-kind conference on temple architecture of India, at **Hampi**, Karnataka.

- It is a part of the celebration under **Azadi Ka Amrit Mahotsav** and is being organized on 25th-26th February by the **Archaeological Survey of India (ASI)** of the Ministry of Culture.
- The **temples of Hampi** are already featured in the **World Heritage List of UNESCO** for their Sheer brilliance, Scale of imagination, and Scintillating architecture.
 - Approximately **10 of India's 40 UNESCO World Heritage Inscriptions** are Hindu Temples in different architectural styles, patterns and symmetry.
 - In 2021, **Rudreswara Temple**, (also known as the Ramappa Temple) at Mulugu district, Telangana has been inscribed on UNESCO's World Heritage list.

What is the Significance of the Conference?

- The conference **provides a platform to discuss, deliberate and disseminate** to the world the grandeur of Indian temples, art and architecture.
- This was in line with the **overall vision of the Prime Minister** which is based on **5 V's**, i. e. Vikas (development), Virasat (heritage), Vishwas (trust), Vignan (knowledge), which lead us to becoming a **vishwaguru** so that India shows the world the way.
- Devayatanam, the house of god is **not only a place to worship** and perform rituals but also a centre for education, fine arts, music, science & technology, rituals & traditions or activities shaping the society.

How Has the Government Promoted Temple in Recent Times?

- The Union Government has proposed **Hoysala temples of Belur and Somnathpur** to the **UNESCO World Heritage List**.

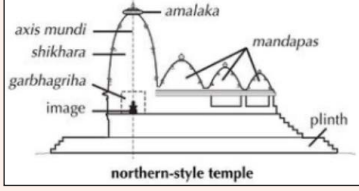
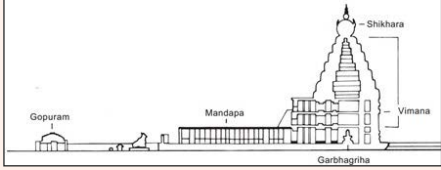
- A **grand temple of Lord Ram** that is being built in Ayodhya.
- After close to 250 years, the **spiritual capital of India - Kashi**, has been rejuvenated and has more accessibility with amenities and better infrastructure for devotees.
- The state of **Telangana has built 2 large stone carved temples worth Rs. 1,000 crores**.
- The focus is to **make existing spiritual places accessible to devotees** through better infrastructure and world class amenities.
 - **PRASHAD and SWADESH DARSHAN Scheme** to facilitate tourism infrastructure and provide better accessibility and experience at spiritual places with a budget of approximately Rs. 7,000 crores has been conceived.

What is the Significance of Indian Temples?

- Temples have been **centres of Indian art, knowledge, culture, spirituality, innovation and education**.
- There have been **three major styles of setting up temples in India** known as **Nagara, Dravidian and Vesara**.
 - **Dashavatar temple** in Devgarh is of Nagara style which is prevalent between the **Himalayas and the Vindhya mountains**.
 - The **Kailasanathar temple in Kanchi** is a Dravidian style temple, developed on the land of Krishna and Kaveri River.
 - Papanatha temple is one of the examples of Vesara style. **Vesara** is a **hybrid form Nagara and Dravidian style**.
- A **Hindu temple is a combination of art and science** which includes Shilpa sastra, vasthu sastra, geometry and symmetry.
- The temples promote **unity, integrity, and civilization**.
 - It was during the freedom struggle that all the freedom struggles were resolved before temple fire to fight for freedom of the country.

Note:

What is the difference between Nagara and Dravidian Style Temples?

	Nagara or North Indian Temple Style	Dravida or South Indian Temple Style
	 <p>northern-style temple</p>	
Features:	<ul style="list-style-type: none"> ➤ In North India it is common for an entire temple to be built on a stone platform with steps leading up to it. ➤ Further, unlike in South India it does not usually have elaborate boundary walls or gateways. ➤ While the earliest temples had just one tower, or shikhara, later temples had several. ➤ The garbhagriha is always located directly under the tallest tower. 	<ul style="list-style-type: none"> ➤ Unlike the nagara temple, the dravida temple is enclosed within a compound wall. ➤ The front wall has an entrance gateway in its centre, which is known as a gopuram. ➤ The shape of the main temple tower known as vimana in Tamil Nadu, is like a stepped pyramid that rises up geometrically rather than the curving shikhara of North India. ➤ It is common to find a large water reservoir, or a temple tank, enclosed within the complex. ➤ Subsidiary shrines are either incorporated within the main temple tower, or located as distinct, separate small shrines beside the main temple. ➤ Temples became rich administrative centres, controlling vast areas of land.
Subdivisions:	<ul style="list-style-type: none"> ➤ There are many subdivisions of nagara temples depending on the shape of the shikhara. ➤ There are different names for the various parts of the temple in different parts of India; however, the most common name for the simple shikhara which is square at the base and whose walls curve or slope inward to a point on top is called the 'latina' or the rekha-prasada type of shikara. ➤ The second major type of architectural form in the nagara order is the phamsana, which tends to be broader and shorter than latina ones. <ul style="list-style-type: none"> ○ Their roofs are composed of several slabs that gently rise to a single point over the centre of the building, unlike the latina ones which look like sharply rising tall towers. ➤ The third main sub-type of the nagara building is generally called the valabhi type. <ul style="list-style-type: none"> ○ These are rectangular buildings with a roof that rises into a vaulted chamber. 	<ul style="list-style-type: none"> ➤ Just as there are many subdivisions of the main types of nagara temples, there are subdivisions also of dravida temples. ➤ These are basically of five different shapes: <ul style="list-style-type: none"> ○ square, usually called kuta, and also caturasra ○ ectangular or shala or ayatasra ○ elliptical, called gaja-prishta or elephant backed, or also called vrittayata, deriving from wagon vaulted shapes of apsidal chaityas with a horse-shoe shaped entrance facade usually called a nasi ○ circular or vritta ○ octagonal or ashtasra.
Examples:	<ul style="list-style-type: none"> ➤ Khajuraho Group of temples, Sun temple, Konark, Sun temple at Modhera, Gujarat and Ossian temple, Gujarat. 	<ul style="list-style-type: none"> ➤ Kanchipuram, Thanjavur or Tanjore, Madurai and Kumbakonam are the most famous temple towns of Tamil Nadu



Note:

Security

Highlights

- P-8I Patrol Aircraft
- Border Infrastructure and Management
- Inter-Operable Criminal Justice System Project
- Insurgency in Manipur
- Border Infrastructure and Management

P-8I Patrol Aircraft

Why in News?

Aircraft manufacturer Boeing has delivered the 12th **P-8I long-range maritime patrol aircraft** to the Indian Navy. This completes the follow-on clause for four additional P-8I aircraft contracted in 2016.

What are the Key Details of P-8I Aircraft?

- It is a **long-range Maritime Reconnaissance and Anti-Submarine Warfare Aircraft**.
- It is an **Indian variant of the P-8A Poseidon aircraft** that Boeing company developed as a replacement for the US Navy's ageing P-3 fleet.
- With a maximum speed of 907 kmph and an operating range of over 1,200 nautical miles, the P-8Is detect threats and neutralize them if required, far before they come anywhere near Indian shores.
- The **Indian Navy became the first international customer** for the P-8 aircraft in 2009.
 - The Navy had procured eight P-8Is under a USD 2.2 billion deal in 2009. The aircraft are **part of the 312A Naval Air Squadron based at Arakkonam in Tamil Nadu**.
 - In 2016, the Navy exercised the optional clause for four more P-8Is in a deal worth over USD 1 billion.
 - Further in May 2021, the US State Department approved the possible sale of six additional P-8I aircraft and related equipment, to India.
 - The six P-8Is will come installed with encrypted communication systems since India has now signed the foundational agreement **Communications Compatibility and Security Agreement (COMCASA) with the US**.

How are Indo-US Defense Ties?

- This proposed sale (approved in 2021) will help to strengthen the US-Indian strategic relationship.
 - For the US, India continues to be an important force for political stability, peace, and economic progress in the Indo-Pacific and South Asia region.
- Defense purchases from the United States have been increasingly an integral part of growing ties between the two countries.
 - From near zero in 2008, India-US defence trade touched USD 20 billion in 2020, helped along by major policy upgrades.
- The US designated India a Major Defence Partner (in 2016) and then granted it the same access to defence technology as **NATO** allies and Australia, Japan and South Korea under Strategic Trade Authorization-1 (STA) in 2018.

What is the COMCASA Agreement ?

- COMCASA (Communications Compatibility and Security Agreement) is **meant to provide a legal framework for the transfer of communication security equipment from the US to India** that would facilitate "interoperability" between their forces — and potentially with other militaries that use US-origin systems for secured data links.
- It is **one of the four foundational agreements** that the US signs with allies and close partners to facilitate interoperability between militaries and sale of high end technology.
- It is an **India-specific version of the Communication and Information on Security Memorandum of Agreement (CISMOA)**.

Note:

- **Four Foundational Agreements between the US and its Partners:**
- **General Security Of Military Information Agreement (GSOMIA)** - Signed by India in 2002.
 - Allows militaries to share the intelligence gathered by them.
- **Logistics Exchange Memorandum of Agreement (LEMOA)** - Signed by India in 2016.
 - Allows both countries to have access to each other's designated military facilities for refueling and replenishment.
- **Communications and Information Security Memorandum of Agreement (CISMOA)** - Signed by India in 2018.
 - Communications Compatibility and Security Agreement (COMCASA) is the India specific version of CISMOA.
- **Basic Exchange and Cooperation Agreement (BECA)** - India has **signed BECA** in 2020.
 - Allows India and US militaries to share geospatial and satellite data with each other

Border Infrastructure and Management

Why in News?

Recently, the **Ministry of Home Affairs** has approved the continuation of the **Central Sector Umbrella Scheme of "Border Infrastructure and Management" (BIM)** over the **15th Finance Commission** Cycle from 2021-22 to 2025-26, at a cost of Rs.13,020 crore.

What does BIM Envisage?

- The BIM scheme will help in the **creation of infrastructure such as border fence, border flood lights, technological solutions, border roads and Border OutPosts (BOPs) and company operating bases** to secure India's borders with Pakistan, Bangladesh, China, Nepal, Bhutan and Myanmar.
- It will strengthen the border infrastructure for improving border management, policing and guarding the borders.
 - India's border with Pakistan is 3,323 km long, including about 775 km of the **Line of Control**. The length of the border is 4,096 km with Bangladesh, 3,488 km with China, 1,751 km with Nepal, 699 km with Bhutan, 1,643 km with Myanmar.

What are the other Initiatives to Secure Borders?

- **Vibrant Villages Programme:**
 - Border villages with sparse population, limited connectivity and infrastructure often get left out from the development gains. Such villages on the northern border will be covered under the new Vibrant Villages Programme, announced in the **Budget 2022-23**.
 - The activities will include construction of village infrastructure, housing, tourist centers, road connectivity, provisioning of decentralized renewable energy, direct to home access for Doordarshan and educational channels, and support for livelihood generation.
 - The move has been taken **to counter the Chinese 'model villages' close to the LAC (Line of Actual Control)**.
 - It will be an **improved version of the existing border area development programme**.
- **The Border Area Development Programme:**
 - BADP was initiated in the border areas of the western region during the Seventh Five Year Plan (1985-90), for ensuring balanced development of border areas through development of infrastructure and promotion of a sense of security among the border population.
 - The programme aims to meet the special development needs of the people living in remote and inaccessible areas situated near the international border and to saturate the border areas with the essential infrastructure through convergence of Central/State/BADP/Local schemes and participatory approach.
- **Smart Fencing in India (CIBMS):**
 - Two pilot projects covering about 71 Kms on Indo-Pakistan Border (10 Kms) and Indo-Bangladesh Border (61 Kms) of Comprehensive Integrated Border Management System (CIBMS) have been completed.
 - CIBMS involves deployment of a range of state-of-the-art surveillance technologies — thermal imagers, infra-red and laser-based intruder alarms, aerostats for aerial surveillance, unattended ground sensors that can help detect intrusion bids, radars, sonar systems to secure riverine borders, fibre-optic sensors and a command and control system that shall receive data from all surveillance devices in real time.

Note:



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- **BOLD-QIT** (Border Electronically Dominated QRT Interception Technique) under CIBMS on the Indo- Bangladesh border in Dhubri district of Assam is also being used.

➤ **Border Road Organization:**

- Founded in 1960, the organisation plays a **major role in providing defense infrastructure** including

roads, bridges, highways, airports, tunnels, buildings and other such structures.

- BRO. has constructed lifelines of over 53,600 km for the people of Sikkim, Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura, Meghalaya, Ladakh, Jammu & Kashmir, Uttarakhand, Himachal Pradesh and Andaman & Nicobar Islands.

A Gist of Border Infrastructure Development

	Main Threat	What needs to be done?	What has been done?
Pakistan	War, insurgency, smuggling.	C.I.B.M.S. monitoring with a well-trained and larger BOLD-QIT, more than one route connecting far flung areas, especially Jammu and Kashmir	C.I.B.M.S. in some stretches, 3rd route to Leh to be opened by 2023.
China	War	Armored vehicle capable infrastructure, high altitude airfields.	Daulat Beg Oldie airfield running, some bridges and tunnels armored vehicle capable.
Bangladesh	Smuggling, human trafficking	C.I.B.M.S. monitoring with BOLD-QIT throughout including riverine stretches	Brahmaputra river covered, rivulets still remaining.
Nepal	Smuggling, human trafficking	C.I.B.M.S. monitoring with BOLD-QIT	Planning stage.
Bhutan	Smuggling	Armored vehicle capable road connectivity till Bhutan-China border.	B.R.O. working on it.
Myanmar	Smuggling, insurgency, trafficking.	C.I.B.M.S. monitoring with bigger and more efficient BOLD-QIT to tackle insurgency, roads for swift troop movements	Some roads present. C.I.B.M.S. planning stage.

Inter-Operable Criminal Justice System Project

Why in News?

Recently, the central government approved the implementation of Phase II of the **Inter-Operable Criminal Justice System (ICJS)** project by the Ministry of Home Affairs.

- It has been approved at a total cost of **Rs 3,375 crore during the period from 2022-23 to 2025-26.**
- Earlier in 2018, a **Supreme Court** panel had launched a pilot project in Telangana's Warangal district to **integrate two crucial pillars of the criminal justice delivery system- the courts and police stations.**

What is ICJS?

- ICJS is a **national platform for enabling integration of the main IT system used for delivery of Criminal Justice** in the country.
- It seeks to **integrate the five pillars of the system** viz Police (through **Crime and Criminal Tracking and Network Systems**), e-Forensics for Forensic Labs, **e-Courts** for Courts, e-Prosecution for Public Prosecutors and e-Prisons for Prisons.
- The ICJS system would be made available through a dedicated and secure cloud-based infrastructure with high speed connectivity.
- **National Crime Records Bureau (NCRB)** will be responsible for the implementation of the project in association with **National Informatics Centre (NIC).**

Note:



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- The project will be implemented in collaboration with the States and Union Territories.

What are the Different Phases of ICJS?

- In **Phase-I of the project**, individual IT systems have been implemented and stabilised even as search of records have been enabled on these systems.
- Under **Phase-II**, the system is being built on the principle of 'one data one entry' whereby data is entered only once in one pillar and the same is then available in all other pillars without the need to re-enter the data in each pillar.

What is the National Crime Records Bureau?

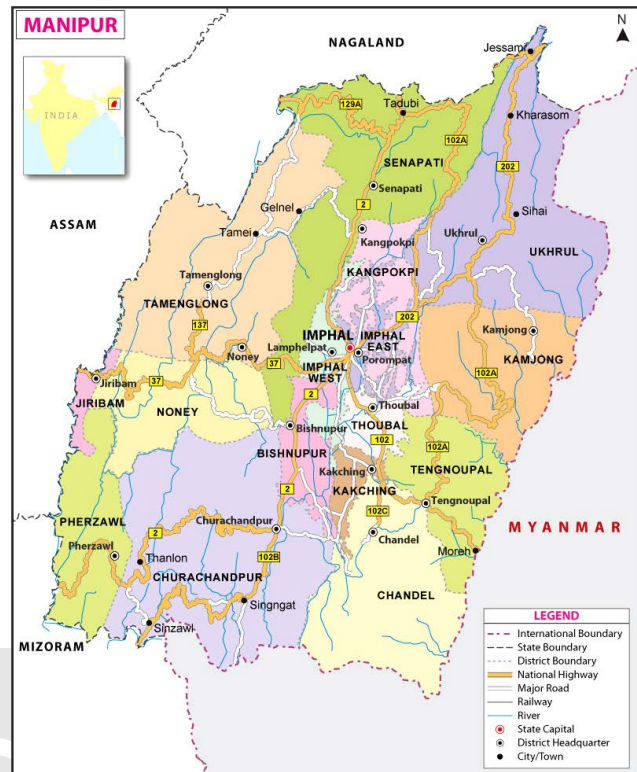
- NCRB, headquartered in New Delhi, was set-up in **1986** under the Ministry of Home Affairs to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators.
- It was set up based on the recommendations of the **National Police Commission (1977-1981)** and the **MHA's Task Force (1985)**.
- NCRB brings out the annual comprehensive statistics of crime across the country ('Crime in India' report).
 - Having been published since 1953, the report serves as a crucial tool in understanding the law and order situation across the country.
- The inaugural function of the **2nd CCTNS Hackathon and Cyber Challenge 2020-21** of NCRB was held in New Delhi.

Insurgency in Manipur

Why in the News?

Recently, the **Centre Government** has announced that it is ready to **hold dialogue with insurgency groups in Manipur** to bring lasting peace to the region.

- The emergence of insurgency in **Manipur dates back to 1964** with the formation of the **United National Liberation Front (UNLF)**, which still remains one of the most formidable militant outfits.



What are the Reasons for Rise of Insurgency in Manipur?

- **Forced Merger:** The rise of separatist insurgency in **Manipur** mainly attributed to perceived discontent over alleged "forced" merger of Manipur with the Union of India and the subsequent delay in granting **it full-fledged statehood**.
 - While the erstwhile Kingdom of Manipur was merged with India on **15th October, 1949**, it became a state only in **1972**.
- **Rise of Militancy:** The later years saw a slew of militant outfits being formed, including the **People's Liberation Army (PLA)**, **People's Revolutionary Party of Kangleipak (PREPAK)**, **Kangleipak Communist Party (KCP)**, and **Kanglei Yawol Kanna Lup (KYKL)**, among others.
 - These valley-based outfits have been demanding an independent Manipur.
- **Spillover Effect of Greater Nagalim Demand:** The **Naga movement** in neighbouring Nagaland spilled over into Manipur's hill districts with the NSCN-IM controlling most of it while pressing for "**Nagalim**" (**Greater Nagaland**), which is perceived in the valley as a "threat" to Manipur's "territorial integrity".

Note:

- **Valley-Hills Conflict:** While the hills account for **nine-tenths of Manipur's geographical area**, they are sparsely populated, with most of the state's population concentrated in the valley.
 - The Meitei community forms a majority in Imphal valley, while the surrounding hill districts are **inhabited by Nagas and Kukis**.
- **Naga-Kuki Conflict:** In the early 1990s, the ethnic clashes between Nagas and Kukis led to the formation of several Kuki insurgent groups, which have now scaled down their demand from a separate **Kuki state to a Territorial Council**.
 - The further continuance of insurgency led to the formation of smaller outfits like the **Zeliangrong United Front (ZUF)**, **People's United Liberation Front (PULF)** and other splinter groups.

What are the Steps Taken by the Government?

- **Military Action:**
 - **AFSPA:** In 1980, the Centre declared the entire **Manipur as a "disturbed area"** and imposed the controversial **Armed Forces Special Powers Act (AFSPA)** to suppress the insurgency movement, which remains in force till date.
 - **Operation All Clear:** Assam Rifles and the army had conducted **operation "All Clear"** in the hill areas, most of the militants' hideouts had been neutralised, with many of them having shifted to the valley.
- **Ceasefire Agreement:**
 - The **NSCN-IM** entered a ceasefire agreement with the Government of India in 1997, even as peace talks between them have still been continuing.
 - The Kuki outfits under two umbrella groups, the **Kuki National Organisation (KNO)** and **United People's Front (UPF)**, also signed the **tripartite Suspension of Operation (SoO)** pacts with the Governments of India and Manipur on August 22, 2008.
 - Many of their smaller outfits have however entered the SoO agreement with the state government, which has launched rehabilitation programmes for such groups.
 - However, major valley-based militant outfits (**Meitei groups**) such as the UNLF, PLA, KYKL etc. are yet to come to the negotiating table.

What are the Challenges in Restoring Peace in Manipur?

- **Many Conflicting Demands:** The central government's approach of a **peaceful settlement** with the militant outfits has proved **counterproductive**.
 - Since, the **demands of many of the outfits conflict with each other**, any conventional agreement with one group becomes a cause for agitation by other groups.
- **Proxy Groupings:** Given that peace talks are on with the **insurgents groups**, there has been a tendency for the groups to continue the armed rebellion by another faction, with **merely a change in nomenclature or by forming a new group**.
- **Politician-Insurgents Nexus:** The nexus between the politicians and insurgents and criminals adds to the woes of the state.
 - Some of the outfits operate as criminal gangsters thriving on extortion, kidnapping and contract killings.
 - Nonetheless, miscreants take advantage of the unrest and extort funds, disguising themselves as insurgents.
 - Besides, most of the security issues are **politicised by the political parties to gain mileage** for vote banks by enhancing controversies.
- **Border State:** **Manipur being a border state**, with a **porous international border** in a hostile jungle environment, the inflow of arms and trans-border movement of insurgent outfits who rely on external countries for training and other required logistics support are continuing.

Border Infrastructure and Management

Why in News?

Recently, the **Ministry of Home Affairs** has approved the continuation of the **Central Sector Umbrella Scheme of "Border Infrastructure and Management" (BIM)** over the **15th Finance Commission** Cycle from 2021-22 to 2025-26, at a cost of Rs.13,020 crore.

Note:

What does BIM Envisage?

- The BIM scheme will help in the **creation of infrastructure such as border fence, border flood lights, technological solutions, border roads and Border OutPosts (BOPs) and company operating bases** to secure India's borders with Pakistan, Bangladesh, China, Nepal, Bhutan and Myanmar.
- It will strengthen the border infrastructure for improving border management, policing and guarding the borders.
 - India's border with Pakistan is 3,323 km long, including about 775 km of the **Line of Control**. The length of the border is 4,096 km with Bangladesh, 3,488 km with China, 1,751 km with Nepal, 699 km with Bhutan, 1,643 km with Myanmar.

What are the other Initiatives to Secure Borders?

- **Vibrant Villages Programme:**
 - Border villages with sparse population, limited connectivity and infrastructure often get left out from the development gains. Such villages on the northern border will be covered under the new Vibrant Villages Programme, announced in the **Budget 2022-23**.
 - The activities will include construction of village infrastructure, housing, tourist centers, road connectivity, provisioning of decentralized renewable energy, direct to home access for Doordarshan and educational channels, and support for livelihood generation.
 - The move has been taken **to counter the Chinese 'model villages' close to the LAC (Line of Actual Control)**.
 - It will be **an improved version of the existing border area development programme**.
- **The Border Area Development Programme:**
 - BADP was initiated in the border areas of the western region during the Seventh Five Year Plan (1985-90), for ensuring balanced development of

border areas through development of infrastructure and promotion of a sense of security among the border population.

- The programme aims to meet the special development needs of the people living in remote and inaccessible areas situated near the international border and to saturate the border areas with the essential infrastructure through convergence of Central/State/BADP/Local schemes and participatory approach.
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 - **BOLD-QIT** (Border Electronically Dominated QRT Interception Technique) under CIBMS on the Indo- Bangladesh border in Dhubri district of Assam is also being used.
- **Border Road Organization:**
 - Founded in 1960, the organisation plays **a major role in providing defense infrastructure** including roads, bridges, highways, airports, tunnels, buildings and other such structures.
 - BRO. has constructed lifelines of over 53,600 km for the people of Sikkim, Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura, Meghalaya, Ladakh, Jammu & Kashmir, Uttarakhand, Himachal Pradesh and Andaman & Nicobar Islands.



Note:

Miscellaneous

Highlights

- Rashtriya Vayoshri Yojana
- IVFRT Scheme
- Exercise MILAN 2022
- Bhasha Certificate Selfie Campaign
- Tarapssur Massacre of Bihar
- River Devika Project: Jammu and Kashmir
- Razzaza Lake: Iraq
- Exercise Eastern Bridge VI
- Guduchi
- International Epilepsy Day
- Fintech Open Hackathon
- Similipal Biosphere Reserve: Odisha
- National Means Cum-Merit Scholarship Scheme
- PM Kisan Samman Nidhi Yojana
- India has the Opportunity to Export more Wheat

Rashtriya Vayoshri Yojana

Why in News?

The Ministry of Social Justice and Empowerment will distribute 4,800 daily living aids and assistive devices among 895 senior citizen beneficiaries under **Rashtriya Vayoshri Yojana (RVY)**.

What is Rashtriya Vayoshree Yojana?

➤ About:

- It was launched in 2017 by the Ministry of Social Justice and Empowerment.
- It is a **central sector scheme** funded from the **Senior Citizens' Welfare Fund**. The fund was notified in the year 2016.
 - All unclaimed amounts from small savings accounts, PPF and EPF are transferred to this fund.

➤ Aim:

- It aims to provide aids and assistive living devices to **senior citizens belonging to Below Poverty Line (BPL)** category who suffer from **age-related disabilities such as low vision, hearing impairment, loss of teeth** and locomotor disabilities.
 - The aids and assistive devices, viz walking sticks, elbow crutches, walkers/crutches, tripods/quad pods, hearing aids, wheelchairs, artificial dentures and spectacles are provided to eligible beneficiaries.

- As per the Census figures of 2011, the population of senior citizens in India is 10.38 crore. More than 70% of the population of senior citizens live in rural areas of the country. A sizeable percentage (5.2%) of the senior citizens suffers from some sort of disabilities related to old age.

➤ Implementation:

- The Scheme is being implemented by the **Artificial Limbs Manufacturing Corporation (ALIMCO)**, a PSU (Public Sector Undertaking) under the Ministry of Social Justice and Empowerment.

What are the other Schemes Related to Elderly?

- **SAMPANN Project**
- **SACRED Portal for Elderly**
- **Elder Line: Toll-Free Number for Elderly**
- **SAGE (Seniorcare Aging Growth Engine) Initiative**
- **Integrated Programme for Older Persons (IPOP)**
- **Indira Gandhi National Old Age Pension Scheme (IGNOAPS)**
- **The Pradhan Mantri Vaya Vandana Yojana**
- **Vayoshreshtha**
- **Maintenance and Welfare of Parents and Senior Citizens (MWPCS) Act, 2007**

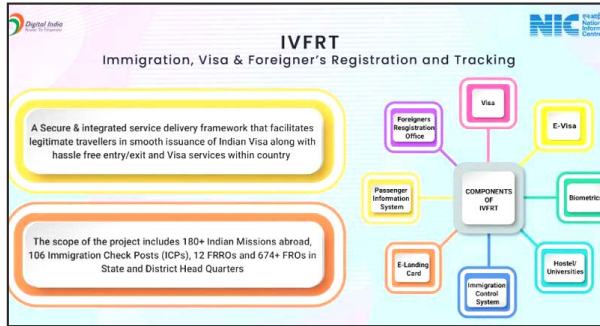
IVFRT Scheme

Why in News?

Recently, the Government has approved the continuation of the **Immigration Visa Foreigners**

Note:

Registration Tracking (IVFRT) Scheme for a period till **31st March 2026** with a financial outlay of **Rs.1,364.88 crore**.



What is the IVFRT Scheme?

- It seeks to **interlink and optimise functions** relating to immigration, visa issuance, registration of foreigners and tracking of their movements in the country.
- Its core objective is **modernisation and upgradation of immigration and visa services**.
- It has been identified and included as one of the **Mission Mode Projects to be undertaken by the Ministry of Home Affairs** under the **National e-Governance Plan (NeGP)**.
- Currently, it covers **192 Indian missions across the globe, 108 Immigration Check Posts in India, 12 Foreigners Regional Registration Officers and offices and more than 700 Foreigners Registration Officers, Superintendents of Police/Deputy Commissioners of Police across the country**.
- After the commencement of IVFRT, the **number of visa and Overseas Citizen of India cards issued increased from 44.43 lakh in 2014 to 64.59 lakh in 2019 at a Compounded Annual Growth Rate (CAGR) of 7.7%**.

Exercise MILAN 2022

Why in News?

The Indian Navy's multilateral **Exercise MILAN 2022** is scheduled to commence from 25th Feb 2022 in the '**City of Destiny**', **Visakhapatnam**.

- The 2020 edition of MILAN was postponed to 2022 due to Covid-19.

What are the Key Points?

- **MILAN 22:**
 - MILAN 22 will witness its largest ever participation, with more than 40 countries sending their warships/ high level delegations.
 - This edition of MILAN will be larger in '**scope and complexity**' with focus on exercises at sea including exercises in surface, sub-surface and air domains and weapon firings.
 - **Theme 2022:** 'Camaraderie - Cohesion - Collaboration'.
- **MILAN:**
 - MILAN is a **biennial multilateral naval exercise** incepted by Indian Navy in 1995 at Andaman and Nicobar Command.
 - Starting with the participation of only four countries, viz **Indonesia, Singapore, Sri Lanka and Thailand**, in the 1995 edition, the exercise has since **transitioned leaps and bounds in terms of number of participants and complexity of exercises**.
 - Originally conceived in consonance with India's '**Look East Policy**', MILAN expanded in ensuing years with India's '**Act East policy**' and **Security And Growth for All in the Region (SAGAR) initiative**, to include participation from island nations in the Western **IOR (Indian Ocean Region)** as also **IOR littorals**.

Bhasha Certificate Selfie Campaign

Why in News?

The **Ministry of Education** launched a campaign '**Bhasha Certificate Selfie**' under **Ek Bharat Shreshtha Bharat (EBSB)**.

- In 2021, the Ministry of Education launched the **Bhasha Sangam initiative** under **EBSB**.

What are the Key Points?

- It was launched to encourage cultural diversity and promote multilingualism and to foster the spirit of EBSB.
- It aims to promote the **Bhasha Sangam mobile app**, developed by the Ministry of Education and MyGov India.

Note:



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- The **Bhasha Sangam** mobile app was launched on **Rashtriya Ekta Diwas 2021 (31st October)**.
- It aims to ensure that people acquire basic conversational skills in Indian languages. To achieve this, a target of 75 lakh people acquiring basic conversational skills has been set.
- The 'Bhasha Certificate Selfie' initiative is encouraging people to upload their selfie with the certificate from their social media accounts.

What is the Bhasha Sangam Initiative ?

- It is an initiative to teach basic sentences of everyday usage in 22 Indian languages (**Eighth Schedule languages**).
- It is developed by the National Council of Educational Research and Training (NCERT).
- The idea is that **people should acquire basic conversational skills in an Indian language** other than their mother tongue.
 - It is available on **DIKSHA, ePathshala** and through 22 booklets.

What is the Ek Bharat Shreshtha Bharat Initiative?

- It was launched in 2015 to **promote engagement amongst the people** of different States/UTs so as to enhance mutual understanding and bonding between people of diverse cultures, thereby securing stronger unity and integrity of India.
- It is an initiative of the **Ministry of Education**.
- Every State and UT in the country would be paired with another State/UT for a time period, during which they would carry out a structured engagement with one another in the spheres of language, literature, cuisine, festivals, cultural events, tourism etc.

What is the Eighth Schedule of the Constitution?

- The **Constitutional provisions** relating to the Eighth Schedule **occur in Article 344 (1) and 351 of the Constitution**.
- The **languages listed under Eighth Schedule** are:
 - (1) Assamese, (2) Bengali, (3) Gujarati, (4) Hindi, (5) Kannada, (6) Kashmiri, (7) Konkani, (8) Malayalam, (9) Manipuri, (10) Marathi, (11) Nepali, (12) Oriya, (13) Punjabi, (14) Sanskrit, (15) Sindhi, (16) Tamil, (17) Telugu, (18) Urdu (19) Bodo, (20) Santhali, (21) Maithili and (22) Dogri.
- Languages are added through **Constitutional Amendments**.

Tarapssur Massacre of Bihar

Why in News

Recently, Bihar **Chief Minister** has announced that **15th February** would be commemorated as "**Shahid Diwas**" in memory of the **34 freedom fighters who were killed by police in Tarapur town** (now subdivision) of Bihar's Munger district 90 years ago.

- The Tarapur massacre was the **biggest carried out by the British police after the one in Jallianwala Bagh** in Amritsar in 1919.

What Happened in Tarapur?

- On 15th February, 1932, a group of young freedom fighters planned to hoist an Indian national flag at Thana Bhawan in Tarapur.
- Police were aware of the plan, and several officers were present at the spot.
- A 4,000-strong crowd pelted the police with stones, injuring an officer of the civil administration.
- The police responded by **opening indiscriminate fire on the crowd**. After about 75 rounds were fired, **34 bodies were found at the spot**, even though there were claims of an even larger number of deaths.
- But only 13 of the dead could be identified:

What Triggered the Protest?

- The hanging of **Bhagat Singh, Sukhdev, and Rajguru in Lahore** on 23th March, 1931, sent a **wave of grief and anger around the country**.
- Following the collapse of the **Gandhi-Irwin Pact**, the **Mahatma** was arrested in early 1932.
 - By this Pact, Gandhiji consented to participate in a Round Table Conference (the Congress had boycotted the first Round Table Conference) in London and the government agreed to release the political prisoners.
- The **Congress was declared an illegal organization**, and Nehru, Patel, and Rajendra Prasad were also thrown into jail.
- In Munger, freedom fighters Srikrishna Singh, Nemdhari Singh, Nirapad Mukherjee, Pandit Dasrath Jha, Basukinath Rai, Dinanath Sahay, and Jaymangal Shastri were arrested.

Note:



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- A call given by the Congress leader **Sardar Shardul Singh Kavishwar** to raise the tricolour over government buildings resonated in Tarapur.

River Devika Project: Jammu and Kashmir

Why in News?

River Devika project, built at the cost of over Rs 190 crore, will be complete by June, 2022.

What is the River Devika project?

- The work on the project was started in March 2019 under the **National River Conservation Plan (NRCP)**.
- Under the project, **bathing “ghats” (places) on the banks of the Devika River will be developed**, encroachments will be removed, natural water bodies will be restored and catchment areas will be developed along with cremation ground.
- The project also includes the **construction of three sewage treatment plants**, sewerage network of 129.27 km, development of two cremation ghats, protection fencing and landscaping, small hydropower plants and three solar power plants.
- On completion of the project, the **rivers will see reduction in pollution and improvement in water quality**.

What is the importance of the Devika River?

- Devika river **originates from the hilly Suddha Mahadev temple** in Udhampur district of Jammu and Kashmir and flows down towards western Punjab (now in Pakistan) where it merges with the **Ravi river**.
- The river **holds religious significance** as it is revered by **Hindus as the sister of river Ganga**.
- In June 2020, **Devika Bridge** was inaugurated in Udhampur. Apart from taking care of traffic congestion, the Devika Bridge was also meant to **help smooth passage of Army convoys and vehicles**.

What is the National River Conservation Plan (NRCP)?

- NRCP is a **centrally funded scheme** launched in 1995 aimed at preventing the pollution of rivers.
- Programs for river conservation are being implemented under **National River Conservation Plan (NRCP)** and **NGRBA (National Ganga River Basin Authority)**.
 - The National Ganga Council, also known as the National Council for Rejuvenation, Protection, and Management of River Ganga, has replaced the NGRBA.

Which Activities are covered under NRCP?

- Interception and Diversion works to capture the raw sewage flowing into the river through open drains and divert them for treatment.
- Sewage Treatment Plants for treating the diverted sewage.
- Low Cost Sanitation works to prevent open defecation on riverbanks.
- Electric Crematoria and Improved Wood Crematoria to conserve the use of wood and help in ensuring proper cremation of bodies brought to the burning ghats.
- River Front Development works such as improvement of bathing ghats.
- Public awareness and public participation.
- Human Resource Development (HRD), capacity building, training and research in the area of River Conservation.
- Other miscellaneous works depend upon location specific conditions including the interface with human population.

Razzaza Lake: Iraq

Why in News?

Iraq's Razzaza Lake was once a tourist attraction known for its beautiful scenery and an abundance of fish that locals depended on. Now, dead fish litter its shores and the once-fertile lands around it have turned into a barren desert.

Note:



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What are the Key Points?

- Razzaza Lake, also known as Lake Milh, Arabic for Salt Lake, is located between Iraq's governorates of Anbar and Karbala.
- It's the **second largest lake in Iraq** and is part of a wide valley that includes the lakes of Habbaniyah, Tharthar and Bahr al-Najaf.
 - Lake Tharthar is the largest.
- The lake was constructed as a measure to control floods in the Euphrates and to be used as a huge reservoir for irrigation purposes.
 - Euphrates River is the **longest river in southwest Asia**. It is one of the two main constituents of the **Tigris-Euphrates river system**. The river rises in **Turkey** and flows southeast across **Syria** and through **Iraq**.
- Iraqis and tourists frequented the lake as a recreational spot to cool down during Iraq's hot summers.
- In recent years, it has been affected not only by the water shortage but by drought, neglect and increased evaporation during Iraq's hot summers. It has also been hit by pollution due to the diversion of sewage water into the lake and the theft of water quotas allocated to it.

Exercise Eastern Bridge VI

Why in News?

Recently, the **Indian Air Force (IAF)** and the **Royal Air Force of Oman** began a five-day bilateral exercise at the Jodhpur air force station. The exercise is named **Eastern Bridge VI**, as is in its sixth edition.

- The exercise seeks to promote professional interaction, exchange of experiences and enhancement of operational knowledge, besides **strengthening bilateral relations between the two countries**.
- The Exercise **Eastern Bridge V** was held in October 2019 at the Air Force Base Masirah, Oman.



What is Oman's Strategic Significance for India?

- **About:**
 - Oman is **India's closest defence partner in the Gulf region** and an important anchor for India's defence and strategic interests.
 - Oman is at the gateway of **Strait of Hormuz** through which India imports one-fifth of its oil imports.
 - Defence cooperation has emerged as a key pillar for the robust **India-Oman strategic partnership**. Defence exchanges are guided by a **Framework MOU which was recently renewed in 2021**.
 - Oman is the **only country in the Gulf region** with which all **three services of the Indian armed forces** conduct regular bilateral exercises and staff talks, enabling close cooperation and trust at the professional level.
 - **Naseem Al-Bahr** is the naval exercise conducted between both the countries.
 - **AL Nagah** is the joint exercise between the armies of two countries.
 - **Eastern Bridge** is the joint exercise between the air forces of two countries.

Note:

- Oman also provides critical operational support to Indian naval deployments in the Arabian sea for anti-piracy missions.
- Oman also actively participates in the **Indian Ocean Naval Symposium (IONS)**.
- India has supplied rifles to Oman. Also, India is considering setting up a defence production unit in Oman.
- **Access to Port of Duqm in Oman:**
 - In a strategic move to expand its footprint in the Indian Ocean region, India has secured access to the key Port of **Duqm** in Oman for military use and logistical support.
 - This is part of India's maritime strategy to counter Chinese influence and activities in the region.
 - The Port of Duqm is situated on the **southeastern seaboard of Oman**, overlooking the Arabian Sea and the Indian Ocean.
 - It is strategically located, in close proximity to the **Chabahar port** in Iran. With the **Assumption Island** being developed in Seychelles and Agalega in Mauritius, Duqm fits into India's proactive maritime security roadmap.

Guduchi

Why in News

Recently, the **Ministry of Ayush** reiterated that **Giloy/Gudduchi (*Tinospora cordifolia*)** is safe and as per available data, and **does not produce any toxic effect**.

- Earlier, certain sections of the media have falsely linked **Giloy/Guduchi to liver damage**.
- The Ministry of Ayush noted that the safety of a **drug depends on how it is being used**. **Dosage** is one of the important factors that determine the safety of a particular drug.



What is Guduchi?

- Guduchi is a climbing shrub that grows on other trees, from the **botanical family Menispermaceae**.
- The plant is **native to India** but also found in China and tropical areas of Australia and Africa.
- People have long used it to treat a **wide range of issues, including fever, infections, diarrhoea, and diabetes**.

What are Medicinal Applications of Guduchi?

- A special focus has been made on its health benefits in treating various metabolic disorders and its **potential as an immune booster**.
- Its use as **antioxidant, anti-hyperglycemic, anti-hyperlipidemic, hepatoprotective, cardiovascular protective, neuroprotective, osteoprotective, radioprotective, anti-anxiety, adaptogenic, analgesic, anti-inflammatory, antipyretic, anti-diarrheal, anti-ulcer, anti-microbial, and anti-cancer** have been well established.
- It is used as a major component of therapeutics for **ameliorating metabolic, endocrinal, and several other ailments**, aiding in the betterment of human life expectancy.
- It is a popularly known herb for its **immense therapeutic applications in traditional systems of medicine** and has been used in the management of **Covid-19**.

International Epilepsy Day

Why in News?

Every year the **second Monday of February** is observed as **International Epilepsy Day (IED)**, and this year it was celebrated on 14th February (2022).

- The day **spreads awareness and educates people about the true facts of epilepsy** and the urgent need for improved treatment, better care, and greater investment in research.
- The day is a **joint initiative** of the **International Bureau for Epilepsy (IBE)** and the **International League Against Epilepsy (ILAE)**. It started in 2015.

What are the Key Points about Epilepsy?

- Epilepsy is a **central nervous system (neurological) disorder** in which brain activity becomes abnormal, causing seizures or periods of unusual behavior, sensations, and sometimes loss of awareness.

Note:



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- Epilepsy is defined as having **two or more unprovoked seizures**.
- Epilepsy is **one of the world's oldest recognized conditions**, with written records dating back to 4000 BCE.
- Around 50 million people worldwide have epilepsy, making it **one of the most common neurological diseases globally**.
 - In **India**, **nearly 60 lakh** people have epilepsy.
- Anyone can develop epilepsy, but **it's more common in young children and older adults**.
- There's **no cure for epilepsy**, but the disorder can be managed with medications and other strategies.
- In 2019, a report **Epilepsy, a public health imperative** was released by the **World Health Organization (WHO)**.
 - It is the **first global report on epilepsy summarizing the available evidence on the burden of epilepsy** and the public health response required at global, regional and national levels.
- The **WHO Mental Health Gap Action Programme (mhGAP)** aims at scaling up services for mental, neurological and substance use disorders for countries especially with low- and middle-income.

Fintech Open Hackathon

Why in News

NITI Aayog, in association with PhonePe (Digital Payment Service Provider), will be hosting the **first-ever open-to-all Fintech Open Hackathon** that aims to showcase path-breaking solutions for the fintech ecosystem.

What is fintech ?

- Fintech describes **an emerging financial services sector in the 21st century**.
- Originally, the **term applied to technology applied to the back-end of established consumer and trade financial institutions**.
- Since the end of the first decade of the 21st century, the term has expanded to include **any technological innovation in the financial sector**, including innovations in financial literacy and education, retail banking, investment and even crypto-currencies like bitcoin.

What is a Fintech Open Hackathon ?

- The Hackathon will provide an opportunity for innovators, digital creators and developers from all over India **to think, ideate and code**. Winning teams stand to win exciting cash prizes **worth Rs 5 lakhs**.
- Participants at the hackathon need to use any open-data **APIs (Application Programme Interface)** like PhonePe Pulse along with frameworks such as **Account Aggregator** as a foundation **to power the following use cases**:
 - Alternate risk models for Lending, Insurance or Investments with focus on **financial inclusion**.
 - Innovative Products that use the power data signals for various demographics and Geos for broader adoption of financial services.
 - Improved Visualization and Derived intelligence based on the **Digital payments** data.
 - The final app that participants come up with must incorporate one of the above.
- Participants can use data sources like **PhonePe Pulse, the Open Government Data Platform and RBI (Reserve Bank Of India) reports on payments to build** on their submission.
- In addition, they can access any other **open data platforms that they are aware of along with the Setu AA Sandbox or the Setu Payments Sandbox to develop their hacks**.
- By the end of the event, participants will be required to present a working prototype of their hack to the judges, post which each hack will be judged based on certain parameters.

Similipal Biosphere Reserve: Odisha

Why in News ?

- Recently the Forest Administration and **SHGs (Self Help Groups)** have started an awareness Campaign to manage fires in **Similipal Biosphere Reserve** this year.
- Earlier, scientists unravel the mystery behind Odisha's **'Black Tigers' in Similipal Tiger Reserve (STR)**.

What are the Key Points ?

- **About:**
 - Similipal derives its name from **'Simul' (silk cotton) tree**.

Note:

- It was formally designated a tiger reserve in 1956 and brought under **Project Tiger** in the year 1973.
- It was **declared a biosphere reserve** by the Government of India in **June, 1994**.
- It has been part of the **UNESCO World Network of Biosphere Reserve** since 2009.
- It is part of the **Similipal-Kuldiha-Hadgarh Elephant Reserve** popularly known as **Mayurbhanj Elephant Reserve**.
- It is prone to forest fires. In **2021**, the Similipal saw a **major fire** between **February-end and early March**.

➤ **Location:**

- It is situated in the **northern part of Odisha's Mayurbhanj district**. Geographically, it lies in the eastern end of the **eastern ghat**.

➤ **Coverage:**

- The biosphere spread over 4,374 sq. km. has 845 sq. km. of core forest (tiger reserve), 2,129 sq km buffer area and 1,400 sq km of transition space.

➤ **Vegetation:**

- Similipal has 1,076 flowering species and 96 species of orchids.
- It boasts of having **tropical semi-evergreen forests, tropical moist deciduous forests, dry deciduous hill forests**.

➤ **Tribes:**

- Two tribes, the Erenga Kharias and the Mankirdias, inhabit the reserve's forests and practise traditional agricultural activities.

➤ **Wildlife:**

- Similipal is home to a wide range of wild animals including tigers and **elephants**, besides 304 species of birds, 20 species of amphibians and 62 species of reptiles.

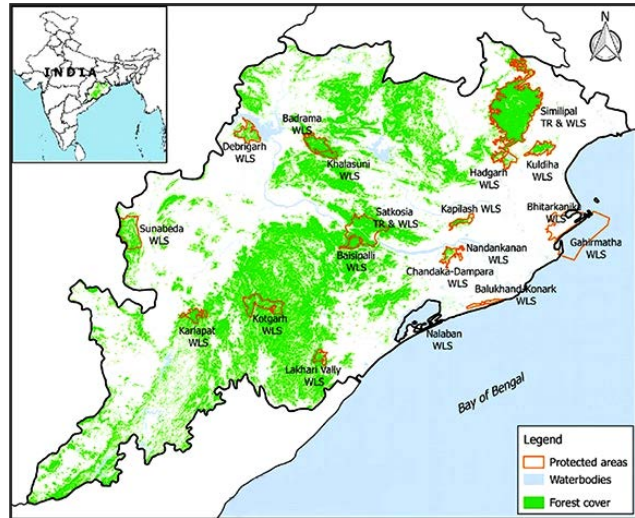
What causes Fires and Mitigation ?

➤ **Forest Fires:**

- **Natural:** Natural causes such as lighting or even soaring temperatures can sometimes result in **forest fires here**.
- **Man Made Factors:** Instances of poaching and hunting wherein the poachers set a **small patch of forest on fire to divert the wild animals**.

➤ **Mitigation Strategies:**

- Forecasting fire-prone days and including community members to mitigate incidents of fire, creating fire lines, clearing sites of dried biomass, and crackdown on poachers.



What are the Other Major Protected Areas in Odisha ?

- **Bhitarkanika National Park**
- **Badrama WLS**
- **Chilika (Nalaban island) WLS**
- **Hadgarh WLS**
- **Baisipalli WLS**
- **Kotagarh WLS**
- **Nandankanan WLS**
- **Lakhar Valley WLS**
- **Gahirmatha (Marine) WLS**

National Means Cum-Merit Scholarship Scheme

Why in News ?

Recently, the Ministry of Education has approved the continuation of **National Means-cum-Merit Scholarship (NMMSS)** over the **15th Finance Commission** cycle for a period of five years i.e. from 2021-22 to 2025-26 with financial outlay of Rs. 1827.00 crore.

What are the Key Points ?

➤ **About:**

- It is a **central Sector Scheme**, launched in 2008-09 to award scholarships to meritorious students of economically weaker sections to **reduce drop-outs in class VIII**.
 - 22.06 lakh scholarships have been sanctioned till 2020-21 involving an expenditure of Rs. 1783.03 crore.

Note:

- It also intends to **encourage students to continue the study** at a secondary stage.
- The scheme envisages **award of one lakh fresh scholarships every year to selected students of class IX** and their continuation/renewal in classes X to XII for study in a State Government, Government-aided and Local body schools under the scheme.

➤ **Details of the Scholarship:**

- **Scholarship of Rs. 12000/- per annum** (Rs.1000/- per month) per student is awarded to selected students every year for study in **classes from IX to XII**.
 - The selection of students awarded the scholarships is made through an **examination conducted by the State Governments**.
 - Scholarships are disbursed by the State Bank of India **directly into the bank accounts of students on a quarterly basis**.

➤ **Eligibility Criteria:**

- Students whose **parental income from all sources is not more than Rs. 3,50,000/-** per annum are eligible to avail the scholarships.
- The students studying in **Kendriya Vidyalaya, Jawahar Navodaya Vidyalayas**, Residential Schools run by the State Government Institutions and private schools are not eligible for the scholarship under this scheme.
- At the time of selection for the award of scholarship the candidate must have scored at least **55% marks or equivalent grade in Class VIII examination**. There will be 5 % relaxation for SC/

What are the other Related Schemes ?

- **National Programme on Technology Enhanced Learning.**
- **Rashtriya Uchchatar Shiksha Abhiyan (RUSA).**
- **Prime Minister's Research Fellowship (PMRF).**
- **Scheme for Promotion of Academic and Research Collaboration (SPARC).**
- **Sarva Shiksha Abhiyan.**
- **NEAT.**
- **PRAGYATA.**
- **Mid Day Meal Scheme.**
- **Right To Education (RTE) Act, 2009.**
- **Beti Bachao Beti Padhao.**

PM Kisan Samman Nidhi Yojana

Why in News?

In the three years, benefits under **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** have been provided to about **11.78 Crore farmers** and funds amounting to **Rs 1.82 lakh crore** in various installments have been released to the eligible beneficiaries of this scheme across India.

What is PM Kisan?

➤ **About:**

- It was launched on 24th February, 2019 to supplement financial needs of land holding farmers.

➤ **Financial Benefits:**

- Financial benefit of **Rs 6000/- per year in three equal installments**, every four month is transferred into the bank accounts of farmers' families across the country through **Direct Benefit Transfer (DBT) mode**.

➤ **Scope of the Scheme:**

- The scheme was initially meant for **Small and Marginal Farmers (SMFs) having landholding upto 2 hectares** but scope of the scheme was **extended to cover all landholding farmers**.

➤ **Funding and Implementation:**

- It is a **Central Sector Scheme** with 100% funding from the Government of India.
- It is being implemented by the **Ministry of Agriculture and Farmers Welfare**.

➤ **Objectives:**

- To supplement the financial needs of the Small and Marginal Farmers in procuring various inputs to **ensure proper crop health and appropriate yields, commensurate with the anticipated farm income** at the end of each crop cycle.
- To protect them from falling in the clutches of moneylenders for meeting such expenses and ensure their continuance in the farming activities.

- **PM-KISAN Mobile App:** It was developed and designed by the National Informatics Centre in collaboration with the Ministry of Electronics and Information Technology.

- **Physical Verification Module:** A mandatory physical verification of **5% beneficiary every year is being done as per the provisions** laid down in the scheme.

Note:



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India has the Opportunity to Export more Wheat

Why in News?

The **Russia-Ukraine conflict** may give India an opportunity to ship more wheat in the global markets.

What are the Key Points?

- More than a quarter of the world's wheat export comes from Russia and Ukraine.
 - **Russia is the world's largest exporter of wheat**, accounting for more than 18% of international exports.
 - In 2019, **Russia and Ukraine together exported more than a quarter (25.4 %)** of the world's wheat.
- The **top five countries that exported** the highest dollar-value worth of wheat include Russia > United States > Canada > France > Ukraine.
- **Egypt is the world's biggest importer of wheat.**
- **Turkey is also a big spender on Russian and Ukrainian wheat** with 74% of its imports coming from those two countries in 2019.
- **India is the second largest producer of wheat** with a share of around 13.5% of world total production.
 - India produces **around 107.59 MT of wheat annually** while a major chunk of it goes towards domestic consumption.

- India accounts for even **less than 1% in world wheat export**. However, its share has increased from 0.14% in 2016 to 0.54% in 2020.
- Presently, India's central pool stands at 24.2 million tonnes, **twice more than the buffer and strategic needs**.

What are the Key Points related to Wheat?

- **About**
 - This is the **second most important cereal crop in India after rice**.
 - It is the main food crop, in north and north-western part of the country.
 - Wheat is a **rabi crop** that requires a cool growing season and bright sunshine at the time of ripening.
 - Success of the Green Revolution contributed to the growth of Rabi crops, especially wheat.
 - Macro Management Mode of Agriculture, **National Food Security Mission** and Rashtriya Krishi Vikas Yojana are few government initiatives to support wheat cultivation.
- **Temperature:** Between 10-15°C (Sowing time) and 21-26°C (Ripening & Harvesting) with bright sunlight.
- **Rainfall:** Around 75-100 cm.
- **Soil Type:** Well-drained fertile loamy and clayey loamy (Ganga-Satluj plains and black soil region of the Deccan).
- **Top Wheat Producing States:** Uttar Pradesh > Punjab > Haryana > Madhya Pradesh > Rajasthan > Bihar > Gujarat



Note:

Key Points

Details

Summary

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Key Points

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