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International Affairs

1. 21st India-Russia Annual Summit:
- The 21st annual **India-Russia summit** was concluded recently. It was attended by Prime Minister Narendra Modi and Russian President Vladimir Putin.
- Also, the inaugural 2+2 ministerial meeting was held.
- The meeting concluded with the signing of 28 agreements across sectors from defence to energy to space exploration, science and technology, heavy engineering, to trade and investment.

Key Points:
- Russia's President Vladimir Putin extended an invitation to PM Modi to visit Russia for the 22nd India-Russia Annual Summit in 2022.
- The two leaders expressed satisfaction at the sustained progress in the '**Special and Privileged Strategic Partnership'** between both countries despite the challenges posed by the Covid.
- The role of connectivity through the International **North-South Transport Corridor** (INSTC) and the proposed **Chennai-Vladivostok Eastern Maritime Corridor** figured in the discussions.
- The two leaders looked forward to greater inter-regional cooperation between various regions of Russia, in particular with the Russian Far East, with India's states.
- They agreed that both countries share common perspectives and concerns on Afghanistan and appreciated the bilateral roadmap charted out at the NSA level for consultation and cooperation on Afghanistan.

India-Russia Relations:
- Russia has been a strong and time-tested partner of India. Both the countries have a long history of strong strategic, military, economic and diplomatic relationship.
- Russia dominates the Indian defense inventory. **S-400 Triumf** air defence system is the latest addition.
- Russia remains the only partner that is still willing to give India critical technologies, such as a nuclear submarine.
- The emerging Russia-China strategic relationship has important security consequences for India.
- Russia also reaffirmed its "unwavering support" to India for a permanent seat in an expanded UN Security Council.
- Russia expressed its support for India's membership of the **Nuclear Suppliers Group.**
- Both countries have mutual benefits in supporting struggle against terrorism, Afghanistan, climate change; organisations like SCO, BRICS, G-20 and ASEAN.

International North-South Transport Corridor (INSTC):
- The International North-South Transport Corridor (INSTC) is a multi modal transportation established in 2000 for the purpose of promoting transportation cooperation among the Member States.
- This corridor connects **India Ocean** and **Persian Gulf** to the Caspian Sea via Iran, Islamic Rep., and is then connected to Saint Petersburg and North European via Russia.
- Recently, India proposed that the strategic **Chabahar Port** in Iran be included in the North-South Transport Corridor that has the potential to bridge connectivity barriers.

S-400 Triumf Missile System:
- The S-400 Triumf is a mobile, surface-to-air missile system (SAM) designed by Russia. It is the most dangerous operationally deployed modern long-range SAM (MLR SAM) in the world, considered much ahead of the US-developed Terminal High Altitude Area Defense system (THAAD).
- The system can engage all types of aerial targets including aircraft, unmanned aerial vehicles (UAV) and ballistic and cruise missiles within the range of 400km, at an altitude of up to 30km.
- The system can track 100 airborne targets and engage six of them simultaneously.

Significance for India:
- From India's point of view, China is also buying the system. In 2015, China signed an agreement with Russia to purchase six battalions of the system. Its delivery began in January 2018.
- China's acquisition of the S-400 system has been viewed as a "game changer" in the region. However, its effectiveness against India is limited.
- India's acquisition is crucial to counter attacks in a two-front war, including even high-end F-35 US fighter aircraft.

2. BRICS in Global Innovation Index:
- Recently, Minister of Science and Technology, Dr Jitendra Singh, chaired the 9th **BRICS** Science and Technology Meet on November 26, 2021.
- The minister called for **BRICS countries** (Brazil, Russia, India, China, and South Africa) to come together and innovate cost-effective, sustainable, affordable, accessible, and scalable scientific solutions, because they face similar and unique challenges.
- He further called for working towards rightful place for BRICS countries, in the Global Innovation Index.
- According to him, this can be made possible by further strengthening cooperation in the fields of Science, Technology & Innovation.

Global Innovation Index (GII):
- GII is an annual ranking of countries by their capacity and success in innovation.
- GII is published by the **World Intellectual Property Organization**, in association with INSEAD, Cornell University, and other organisations and institutions.
- It is prepared on the basis of both subjective and objective data fetched from sources like International Telecommunication Union, World Bank and World Economic Forum. It was first published in 2007 by **INSEAD** and **World Business** magazine.
- India jumps 2 spots to **46th rank** in **Global Innovation Index 2021.**

How is index computed?
- GII is computed by taking the average of scores in two sub-indices namely, **Innovation Input Index** and **Innovation Output Index**. Innovation Input Index is composed of five pillars while Innovation Output Index has two pillars. Each of these pillars describes a credit of innovation. Their score is calculated by weighted average method.

3. 5th World Congress on Disaster Management (WCDM):

- Recently, Defence Minister virtually inaugurated the 5th World Congress on Disaster Management (WCDM)" on November 24, 2021.
- World Congress on Disaster Management (WCDM) is a unique initiative of DMICS to bring researchers, policy makers and practitioners from around the world in the same platform to discuss various challenging issues of disaster risk management. The mission of WCDM is to promote interaction of science, policy and practices to enhance understanding of risks and advance actions for reducing risks and building resilience to disasters.
- While inaugurating the conference, minister noted that, Indian Armed Forces have demonstrated time and again that they care for and stand by India's partners when they need without distinguishing between natural or man-made disasters.
- He reiterated India's vision for the Indian Ocean, summarized by the concept of **SAGAR** (Security and Growth for All in the Region).
- **SAGAR** comprises of both distinct and inter-related elements like:
1. Deepening economic & security cooperation among littoral states
2. Enhancing capacities to safeguard land & maritime territories
3. Working towards sustainable regional development & Blue Economy
4. Promoting collective action for dealing with non-traditional threats such as piracy, terrorism and natural disasters.
- He also appreciated the Armed Forces for being first responders in region for Humanitarian Aid and Disaster Relief (HADR) operations.
- He highlighted, India's unique position in the IOR along with the capability of Armed forces, enables it to contribute significantly during HADR situations.

India's assistance in IOR:

- One of the notable HADR missions in IOR that India undertook in recent years was **Operation Rahat** in Yemen in 2015. In this operation, India rescued and evacuated over 6700 persons, comprising of more than 1940 citizens from 40 other countries.
- India also provided assistance during 2016 cyclone in Sri Lanka, 2019 earthquake in Indonesia, flooding & landslides in Madagascar in January 2020 and Cyclone Idai in Mozambique. India also responded promptly during Oil Spill in Mauritius in August 2020 as well as Oil tanker fire in September 2020 in Sri Lanka.

4. 'Dosti': Trilateral Coast Guard Exercise:

- Recently, India, The Maldives and Sri Lanka are holding the 15th edition of the biennial trilateral coast guard exercise 'Dosti', in the Maldives.
- Year 2021 marks the 30th year of **Dosti Trilateral Coast Guard Exercise**.
- The tri-lateral exercise 'Dosti' was organised with the aim to further fortify the friendship, to build cooperation between Coast guards of three countries and to enhance mutual operational capability & exercise interoperability. This exercise is significant for India because Maldives & Sri Lanka are of strategic importance to India & its maritime security interests.
- The Dosti Coast Guard Exercise was first launched in 1991. These exercises were bilateral earlier, involving Indian coast guard and Maldives Coast Guards. Sri Lanka joined these exercises in 2012 for the first time. Since then, it has become trilateral exercise.
- Collaborations like 'Dosti ' may help at the time of maritime accident or ecological disaster like oil spill. These exercises help in developing a better understanding of coast guard of other nation. It will also help in enhancing coordination during different missions.

5. Russia stresses Two-State Solution to Israeli-Palestinian conflict:

- Recently, Russian President Vladimir Putin said that his country adheres to the "two-state solution" regarding the Israeli-Palestinian conflict.

What is Israeli-Palestinian Conflict?

- Britain took control of the area known as **Palestine** after the ruler of that part of the Middle East, the Ottoman Empire, was defeated in World War First.
- The land was inhabited by a **Jewish** minority and **Arab** majority.

- Tensions between the two peoples grew when the international community gave Britain the task of establishing a "national home" in Palestine for Jewish people. For Jews it was their ancestral home, but Palestinian Arabs also claimed the land and opposed the move.
- Between the 1920s and 1940s, the number of Jews arriving there grew, with many fleeing from persecution in Europe and seeking a homeland after the Holocaust of World War Two.
- Violence between Jews and Arabs, and against British rule, also grew.
- In 1947, the **UN voted for Palestine** to be split into separate Jewish and Arab states, with Jerusalem becoming an international city.That plan was accepted by Jewish leaders but rejected by the Arab side and never implemented.

Israel's boundaries today

Legend: Palestinian civil control ■ Built-up Palestinian area ■

Map labels: LEBANON, SYRIA, West Bank, Jerusalem, Gaza, ISRAEL, JORDAN, EGYPT, SAUDI ARABIA

- In 1948, unable to solve the problem, British rulers left and Jewish leaders declared the creation of the state of Israel.
- Many Palestinians objected and a war followed. Troops from neighbouring Arab countries invaded.
- Hundreds of thousands of Palestinians fled or were forced out of their homes in what they call Al Nakba, or the "Catastrophe".
- By the time the fighting ended in a ceasefire the following year, Israel controlled most of the territory.
- Jordan occupied land which became known as the West Bank, and Egypt occupied Gaza.
- Jerusalem was divided between Israeli forces in the West, and Jordanian forces in the East.
- Because there was never a peace agreement - with each side blaming the other - there were more wars and fighting in the following decades.
- In another war in 1967, Israel occupied East Jerusalem and the West Bank, as well as most of the Syrian Golan Heights, Gaza and the Egyptian Sinai peninsula.
- Most Palestinian refugees and their descendants live in Gaza and the West Bank, as well as in neighbouring Jordan, Syria and Lebanon.

Current situation:
- Israel still occupies the West Bank but pulled out of Gaza. UN still recognise that piece of land as part of occupied territory.
- Israel claims whole Jerusalem as its capital, while Palestine claim East Jerusalem as the capital of future Palestinian state.
- As a result, tensions are often high between Israel and Palestinians who are living in Gaza, West Bank and East Jerusalem.

6. US invited Taiwan to its Summit for Democracy:
- Recently, US President Joe Biden has invited Taiwan, along with more than 100 countries, for a virtual summit.
- The Summit for Democracy was a virtual summit hosted by the United States "to renew democracy at home and confront autocracies abroad" on December 9-10, 2021.
- US did not invite China and Russia for this meeting.
- This conference was a campaign pledge by President Biden. He placed the struggle between 'autocratic governments' and democracies at the heart of his foreign policy.
- Even though US does not recognise Taiwan as an independent country, it invited Taiwan. US takes up Taiwan as a model democracy.

Which countries were invited?

- **Turkey** is a NATO ally of the United States was not included on the list. President of Turkey, Recep Tayyip Erdogan was dubbed an "autocrat" by US President.
- In the Middle East, only **Israel** and Iraq have been added to the list.
- Traditional Arab allies of the US namely, Egypt, Jordan, Saudi Arabia, Qatar and the United Arab Emirates, are all absent.
- US has also invited Brazil, which is headed by President Jair Bolsonaro.
- On the African side, Kenya, Congo, South Africa, Nigeria and Niger are invited.

7. Australia signs Submarine Deal with U.S., U.K.:
- Australia signed a submarine deal with new defence alliances, namely United States (US) and United Kingdom (UK) on November 22, 2021.
- The deal seeks to equip Australian Navy with nuclear-powered submarines.
- The deal was signed by Australian Defence Minister Peter Dutton with U.S. and British diplomats.
- This deal allows the exchange of sensitive "naval nuclear propulsion information" between three countries. It is the first agreement on technology to be publicly signed.

About the deal:
- The deal will help Australia to do an 18-month study into submarine procurement. Details of the procurement has not yet decided, including whether Australia will opt for a vessel based on British or U.S. nuclear-powered attack submarines.
- With access to the information delivered under the deal, Australia will be positioned to be reliable and responsible stewards of the naval nuclear-powered technology.
- Defence Alliance
- Australia, UK and US had announced the formation of a new defence alliance between them, called AUKUS. It was created to confront strategic tensions in the Pacific Ocean, where China-US rivalry is increasing.

About AUKUS alliance:
- This is a trilateral security partnership for Indo-Pacific between **Australia, UK and US (AUKUS).** Major highlight of the agreement is sharing of US nuclear submarine technology to Australia.
- The grouping focuses on advancing strategic interests in Indo-Pacific region, making it an alliance against assertive actions of China in South China Sea. Under this initiative, Australia will acquire nuclear-powered submarines with the help of UK and US.

What makes nuclear submarines so important?
- A nuclear-powered submarine is classified as an "SSN" under the US Navy hull classification system, wherein 'SS' is the symbol for submarine, and 'N' stands for nuclear. A nuclear-powered submarine that can launch ballistic missiles is called "SSBN".
- Conventional diesel-engine submarines have batteries that keep and propel — though not very fast- the vessel underwater. The life of these batteries can vary from a few hours to a few days.
- The newer **Air-Independent Propulsion** (AIP) submarines have **additional fuel cells** that allow them to stay underwater for **longer** and **move faster** than the conventional vessels. However, the fuel cells are used only at strategic times, when the endurance to remain submerged is required.
- Both conventional and AIP subs need to come to the surface to recharge their batteries using the diesel engine. The diesel engine also propels the vessel on the surface. However, the fuel cells of AIP can only be **charged at on-land stations**, not while at sea.
- The great advantage of an SSN is that its nuclear-powered propulsion gives the submarine a **near infinite capacity** to stay dived. Since it is propelled by a nuclear-powered engine rather than by batteries, it does not have to emerge on the surface at all, except to replenish supplies for the crew.
- SSNs are also able to move faster underwater than the conventional submarines. Added together, these advantages allow a navy to deploy these submarines quicker and at farther distances.

8. India gets re-elected to UNESCO Executive Board:
- On November 17, 2021, India was re-elected to the executive board of **UNESCO** (United Nations Educational, Scientific and Cultural Organization) for the term of 2021-2025.

- India was re-elected with 164 votes. Among Group IV Asian & Pacific States, Japan, Vietnam, Philippines, Cook Islands and China were also elected.

UNESCO Executive Board:
- **UNESCO Executive Board** is one among the three constitutional organs of the UN agency. It is elected by the General Conference. The board acts under the authority of General Conference.
- It examines the programme of work for organisation and corresponding budget estimates, which is submitted by Director-General. The board comprises of 58 member-states, each having a four-year term of office.

United Nations Educational, Scientific and Cultural Organization:
- UNESCO is a specialised agency of United Nations (UN). It aims to promote world peace & security through international cooperation in education, science, arts, and culture.
- It comprises of 193 member states and 11 associate members besides partners in intergovernmental, non-governmental, and private sector.
- The agency is headquartered at World Heritage Centre in Paris, France. Apart from that, it has 53 regional field offices and 199 national commissions which facilitate its global mandate.
- UNESCO was founded in 1945 by succeeding the League of Nations' International Committee on Intellectual Cooperation. Its constitution establishes the goals, operating framework and governing structure of the agency.

UNESCO's Program:
- UNESCO works across five major program areas namely, education, social or human sciences, natural sciences, culture and communication or information. It sponsors projects to improve literacy, protect independent media, provide technical training & education, and promote cultural diversity.

Main Organs United Nations:
- The United Nations is **neither a supra-State nor a government of governments**. It does not have an army and it imposes no taxes. It depends on the political will of its Member States to have its decisions put into action and relies on the contributions of its Members to carry out its activities.
- The United Nations (UN) has six main organs. Five of them- the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council and the Secretariat- are based at UN Headquarters in New York. The sixth, the International Court of Justice, is located at The Hague in the Netherlands.

9. 21st IORA Annual Council of Ministers' Meeting:
- The 21st **Indian Ocean Rim Association (IORA)** Annual Council of Minister's (COM) Meeting was held in Dhaka on November 17, 2021.
- India took part in the conference in virtual mode.
- India was led by Minister of State External Affairs (MoS), Dr. Rajkumar Ranjan Singh.
- IORA COM was held in hybrid format in Dhaka.
- At the end of this meeting, Dhaka Communique was adopted.

India's affirmation at the summit:
- While addressing the summit, the MoS reaffirmed India's strong commitment of strengthening IORA, which is the largest and pre-eminent organization in Indian Ocean Region (IOR).
- India also reaffirmed the commitment to promote peace, security and prosperity in IOR, as well as in wider Indo-Pacific.
- Minister also noted the contributions made by India as coordinator of the IORA priority areas of Disaster Risk Management (DRM).
- While addressing the "Strategic Dialogue on "Impact of COVID-19 and perspectives of economic recovery in IOR" MoS highlighted India's assistance as the first responder to several countries in Indo-Pacific during Covid-19 pandemic.
- Steps taken by India to strengthen IORA

In order to strengthen IORA, India undertook several initiatives during 2021:
- Assistance to the IORA Secretariat,
- Capacity building workshops in areas including from Yoga, traditional medicines to Remote sensing.
- UNCLOS and Ocean Data Management

- Discussions on various issues under IORA.
- Indian Ocean Rim Association (IORA)
- IORA is an international organisation comprising of 23 states surrounding the Indian Ocean. It is a regional forum, tripartite in nature, to bring together representatives of Government, Academia and Business in order to promote co-operation and closer interaction among them. The Coordinating Secretariat of IORA is at Ebene, Mauritius.

10. IOC advice on Transgender Athlete Rules:
- International Olympic Committee (IOC) published advice on transgender athlete rules, recently.
- This move is aimed at helping sports write eligibility rules for transgender athletes.
- IOC advices to shift the focus from individual testosterone levels.
- It also calls for evidence to prove in case a performance advantage existed.
- IOC maintains that, no athlete should be excluded from competing on the basis of an "unverified, alleged or perceived unfair competitive advantage because of their sex variations, transgender status or physical appearance.
- IOC took this decision after the Tokyo Olympics, in which first openly transgender athlete, weightlifter Laurel Hubbard, competed and defended 800-meter champion Caster Semenya.
- The IOC document is not legally binding yet. It clearly states that, governing bodies should now be responsible for regulating their own sports.

International Olympic Committee (IOC):
- IOC is a non-governmental sports organisation. It is based in Lausanne, Switzerland.
- It was set up in the form of an association under Swiss Civil Code (articles 60–79). The association was founded in the year 1894, by Pierre de Coubertin and Demetrios Vikelas.
- IOC is responsible for organising modern Olympic Games. IOC is the governing body of National Olympic Committees (NOCs) as well as the "Olympic Movement".
- Current president of the IOC is Thomas Bach. He succeeded Jacques Rogge in September 2013.

11. Delhi Declaration on Afghanistan:
- A regional security summit was hosted by India on November 10, 2021. The summit was attended by eight nations including Iran and Russia.
- Conference was represented by the national security advisors of each country.
- During the conference, it was announced that Afghanistan & its territories cannot be used to shelter or train terrorists, or to finance any act of terrorism.
- Countries issued a joint statement, dubbed as "Delhi Declaration on Afghanistan". As per the statement, eight participating nations discussed the evolving Afghan situation including the global ramification in the aftermath Taliban's takeover.
- They paid special attention to issues like Threats from terrorism, current political situation in Afghanistan, radicalisation & drug trafficking.

Who were the participating countries?
- The eight nations, which attended the conference include India, Russia, Iran, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan.

Commitments made by countries:
- Participating countries highlighted the need to offer Afghanistan all possible humanitarian assistance.
- They reaffirmed their firm commitment to tackle terrorism in all forms and manifestations. They also seek to combat terror financing, dismantling of terrorist infrastructure and counter radicalisation in a bid to ensure that Afghanistan will never become a safe haven for terrorism.
- They further emphasised on the importance of ensuring fundamental rights of children, minorities and women.

Joint Declaration:
- The **Joint Declaration (Delhi Declaration)** emphasised on the need to provide urgent assistance to Afghan people. It expressed deep concerns over deteriorating socio-economic and humanitarian situation in Afghanistan. It also noted the need of helping Afghanistan to contain COVID-19.

12. Like Minded Developing Countries (LMDCs):
- Recently, most of the developing nations like China, India and African countries, have asked around US $1.3 trillion per year from wealthy countries in climate finance which will start from 2030.
- This demand is likely to cause further consternation even as countries negotiate on this amount at COP26.
- Group of 24 nations, calling themselves **Like Minded Developing Countries (LMDCs),** and countries from Africa put forward this demand in a proposal to enhance finance flows.
- These countries are pushing for inclusion of proposal in the final decisions which will be agreed at the climate conference in Glasgow.
- **India** is part of the LMDC grouping along with countries like China, Indonesia, Iran, Malaysia, Sri Lanka, Bangladesh and the Philippines.

Like Minded-Group of Developing Countries (LMDC):
- LMDC is a group of developing countries, organised as a block negotiator in international organizations like United Nations and World Trade Organization.
- LMDC represent about 50% of the world's population. Member countries of the Like-Minded Group include Bangladesh, Algeria, Bhutan, Belarus, Cuba, China, India, Egypt, Iran, Indonesia, Malaysia, Nepal, Myanmar, Sri Lanka, Pakistan, the Philippines, Syria, Sudan, Vietnam, and Zimbabwe.

About COP26:
- The COP26 is the 26th United Nations Climate Change conference. It is being held in Glasgow, Scotland, under the presidency of United Kingdom. It started on October 31 and will conclude on November 12. The CoP comes under the United Nations Climate Change Framework Convention (UNFCCC). UNFCCC was established in 1994.

Goals of COP26:
- To secure global net-zero by mid-century and to keep 1.5 degrees within limit.
- To protect communities and natural habitats.
- To mobilise finance and
- To work together to deliver

13. 96 Countries Recognise India's Vaccination Certificate:
- According to the Union Government, about 96 countries have agreed to mutually recognise India's Covid-19 vaccination certificate.
- With this recognition, persons travelling from these countries will be provided certain relaxations as mentioned in Union health ministry's guidelines on international arrivals.
- Government is further communicating with other countries for the recognition so that beneficiaries of the world's largest Covid-19 vaccination programme are accepted and recognised in order to travel for the purposes of education, business and tourism.
- India has so far administered around 109.08 crore jabs.
- The international travel vaccination certificate can be downloaded from CoWIN portal.

CoWIN Portal:
- CoWIN stands for Covid Vaccine Intelligence Network. It is a web portal in India for COVID-19 vaccination registration. It is owned and operated by Ministry of Health and Family Welfare. The portal displays booking slots of COVID-19 vaccine in the nearby areas. People can book their slot using through the portal.
- One can book their slot through portal on the same day or a few days prior.
- This portal has also been integrated with the **Aarogya Setu** and **UMANG Apps**.
- Currently, three vaccines can be registered on the platform namely Covishield, Covaxin and Sputnik V.
- CoWIN started offering Covid-19 vaccines to the Frontline workers in India on January 16, 2021. From March 2021 onwards, vaccination was offered to all residents aged over 60. Eligibility was extended to all residents aged over 45 from April 1, 2021 and to residents aged over 18 from May 1, 2021.

14. Abu Dhabi: Law on divorce, inheritance for non-Muslims:
- The capital of the United Arab Emirates (UAE), Abu Dhabi, has issued new rules to govern divorce, inheritance & child custody for non-Muslims in Abu Dhabi.

- Abu Dhabi will create a new court for handling these cases.
- Hearing will be held in Arabic as well as English languages in order to make it understandable to vast foreign worker population there. New laws will only be applicable in Abu Dhabi.

What changes have been made?
- Rule related to child custody has changed. New rule will allow parents to share joint custody of their children.
- Law also introduced the idea of civil marriage.
- It also allows wills to be drawn up granting inheritance to anyone a person chooses.
- Rules also deal with paternity issues.
- The new laws were enacted in accordance with the goal of authorities to overhaul the Islamic personal laws in Abu Dhabi. These goals included- allowing unmarried couples to cohabitate, criminalizing 'honor killings' and loosening alcohol restrictions. In September 2020, Abu Dhabi also ended its alcohol license system. The UAE announced, in September 2021, its plan to stimulate its economy and liberalize residency rules for foreigners.

About Abu Dhabi:
- Abu Dhabi is one among the seven sheikhdoms of the UAE. It is an oil-rich emirate and the capital of UAE. It is the second-most populous city of UAE, after Dubai. The city is located on an island in the Persian Gulf. It houses local and federal government offices. The city is also home of the Government of United Arab Emirates and Supreme Petroleum Council.

15. UN: 3 million more at edge of Famine:
- A report by the **World Food Programme** (WFP) has revealed that acute hunger has increased across the world. As a result, 45 million people are living on the edge of famine across 43 countries.

Key Points:
- In its earlier report in 2021, WFP had estimated this number at 42 million. But, recent assessment of food security reveals that another three million people facing famine in Afghanistan.
- As per report, fuel prices & food prices are increasing and fertiliser is more expensive. All these factors feed into the new crises of starvation like unfolding in Afghanistan, Yemen and Syria.
- Report highlights that, to curb this situation worldwide, seven billion dollars will be needed, which earlier was estimated as 6.6 billion.
- 5 million Syrians are witnessing an acute hunger, as per report.
- In countries like Haiti, Ethiopia, Kenya, Somalia, Angola and Burundi, acute hunger has been increasing.

What are the impacts of food insecurity?
- The food insecurity in some areas is forcing parents to make choices like marrying off their children early. Parents are pulling children out of school, or they are feeding them locusts, cactus or wild leaves. In Afghanistan, families are reportedly being forced to sell their children to survive.

Acute hunger (famine):
- Acute hunger is defined as undernourishment over a defined period. It is the most extreme form of hunger. It arises frequently because of situations like droughts, wars and disasters.

World Food Programme (WFP):
- WEP is the food-assistance branch of United Nations and the world's largest humanitarian organization. It is dubbed as the largest organisation to focus on hunger & food security. It is the largest organisation to provide school meals. It was founded in 1961. It is headquartered in Rome and runs offices across 80 countries.

16. 13th ASEM Summit:
- 13th edition of the Asia-Europe Meeting (ASEM) Summit is scheduled to held on November 25 and November 26, 2021.
- In the summit, the Indian delegation will be led by Vice President M Venkaiah Naidu.
- The summit is titled as "Strengthening Multilateralism for Shared Growth".
- It will be held in virtual mode, by including all 51 member countries. Apart from members, ASEAN and the European Union will also take part.

Asia-Europe Meeting (ASEM):

- ASEM is an Asian–European political dialogue forum, that works to enhance relations and several forms of cooperation between its partners. It was established on March 1, 1996 at 1st ASEM Summit (ASEM1) in Bangkok, Thailand. It was established by the 15 Member States of the EU & European Commission and 7 Member States of the ASEAN, besides individual countries of Japan, China, and South Korea.

Members of ASEM:
- Several EU Member States, India, Pakistan, Mongolia and the ASEAN Secretariat joined ASEM in 2008. In 2010, Australia, New Zealand and Russia joined. While, Bangladesh, Norway, and Switzerland joined in 2012. In 2014, Croatia & Kazakhstan joined ASEM. Turkey is the newest member of ASEM, that joined in 2021.

ASEM Summit:
- ASEM Summit is a biennial event, that is alternatively held between Asian and European countries. It is the most significant event in ASEM process of setting priorities for dialogue & cooperation between Asia & Europe on issues of mutual interest in the fields of economics, politics, finance, education, social and culture.

17. UN on Africa's Sahel Crisis:
- On November 12, 2021, UN peacekeeping chief warned that crisis in Africa's Sahel region is volatile because Insecurity & instability are undermining prospects for development and many lives are being lost every day because of terrorist attacks.
- As per the chief, millions of people are displaced, children are not able to go to school, and primary health care is inaccessible for many amid the Covid-19 pandemic.
- He underlined the concerns while speaking at UN Security Council meeting on G5 Sahel force.

G5 Sahel force:
- G5 Sahel force was set up by five African nations namely, Chad, Burkina Faso, Mali, Niger and Mauritania. The force was set up in 2017 for fighting the growing terrorist threat in vast Sahel region.

Why Africa is hardest hit by terrorism?
- According to UN experts, Africa became the region hardest hit by terrorism in first half of 2021 in the aftermath of increasing influence of Islamic State and al-Qaida extremist groups.

The Sahel:
- Sahel region of Africa is located between Sahara in the north and Sudanian savanna in the south. It is having a semi-arid climate and stretches across south-central latitudes of Northern Africa in between **Atlantic Ocean** and **Red Sea**.
- The region includes areas **from west to east** parts of northern Senegal, southern Mauritania, northern Burkina Faso, central Mali, extreme south of Algeria, extreme north of Nigeria, Niger, extreme north of Cameroon and Central African Republic, Central & southern Sudan, central Chad, extreme north of South Sudan, extreme north of Ethiopia and Eritrea.

Sahel region, Africa
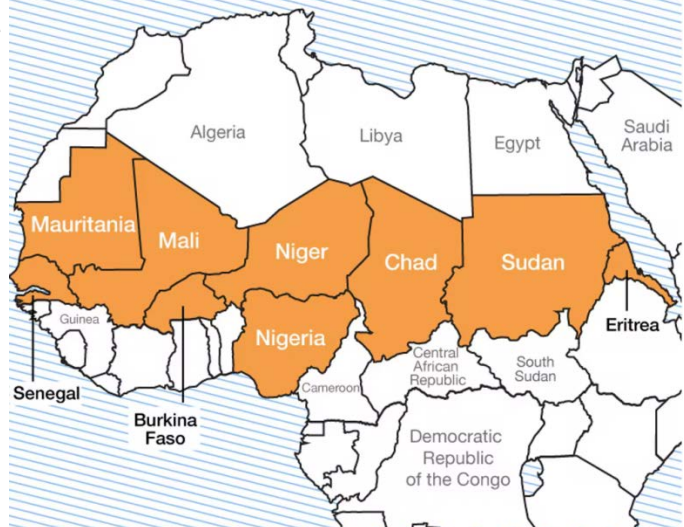
18. India and Sri Lanka revive Parliament Friendship Association:
- India and Sri Lanka have revived their "Parliamentary Friendship Association" for which Minister Chamal Rajapaksa has been selected as its president.
- This association was there in the past.

- It is being revived for current Parliament which was elected in August 2020.
- At the revival event, Sri Lanka's Foreign Minister G.L. Peiris noted the "close civilisational ties" between India & Sri Lanka. He observed that greatest gift of India to Sri Lanka was Buddhism.
- This association will help in "reinvigorating" Parliamentary exchanges and strengthening bilateral ties between both the countries.

Background:
- Sri Lanka formed India-Sri Lanka Parliamentary Friendship group, after deciding to buy fertiliser from India on November 11, 2021. The Indian Parliament proposed to form Parliamentary Friendship Group with the friendly nations to strengthen the bilateral relations.

India-Sri Lanka Parliamentary Friendship group:
- This association comprises of senior members of Lankan parliament to rejuvenate ties in spite of its close relations with China.
- This association was established for 9th Parliament of Sri Lanka.
- It was established at the Parliament complex in the presence of Mahinda Yapa Abeywardena, the Speaker of Parliament.

19. India-Bhutan Trade Entry and Exit Points:
- India and Bhutan are set to have seven additional entry and exit points for trade in order to increase trade connectivity.
- This decision was taken in a commerce secretary-level meeting, that was held between the issue of trade and transit between both the countries.
- Indian side was led by BVR Subrahmanyam, Secretary of Department of Commerce under the Ministry of Commerce & Industry while the Bhutanese side was led by Dasho Karma Tshering, Secretary of Ministry of Economic Affairs, in Government of India.
- During the meeting, extensive discussions on the current trade and transit issues were discussed.
- They also discussed issues of mutual interests and measures to strengthen the bilateral trade relations.
- Discussions were held to increase trade connectivity between both the countries.
- Both sides also formalised seven additional entry or exit points, through a Letters of Exchange.

What are seven entry or exit points?
1. Nagarkata Land Customs Station without commodity restriction.
2. Agartala Land Customs Station as an entry /exit point.
3. Pandu port (Guwahati Steamerghat) as an entry /exit point, subject to cross border control at Dhubri.
4. Jogighopa port as an entry/exit point, subject to cross border control at Dhubri.
5. Asian Highway 48 connecting Torsha Tea Garden in India and Ahllay in Bhutan as an additional route corresponding to the Land Custom Station at Jaigaon.
6. Kamardwisa as an entry/exit point.
7. Birpara as an entry/exit point.

India-Bhutan relations:
- India has been extending economic assistance to Bhutan's socio-economic development since the early 1960s when Bhutan launched its Five Year Plans.
- For Bhutan, hydro-power development continues to be a vital catalyst for socio-economic development. Four hydro-electric projects (HEPs) totaling
- 2136 MW are already operational in Bhutan and are supplying electricity to India.
- India is Bhutan's largest trading partner.
- India is the most popular educational destination for Bhutanese students.
- There are vibrant cultural exchanges between the two countries. A number of Bhutanese pilgrims travel to holy Buddhists sites in India.

20. G-20 Summit adopts Rome Declaration:
- The two-day G-20 Summit was concluded on October 31, 2021. During the summit, Rome Declaration was adopted.

- During the summit, leaders elaborated deliberations on issues of global importance like fighting covid-19 pandemic, improving health infrastructure, strengthening economic cooperation and furthering innovation.
- They also adopted the 'Rome Declaration' and under the health section communique gives a very strong message. Countries agreed on the fact that, Covid-19 immunisation is a global public good.
- During the summit, countries also agreed that the World Health Organisation (WHO) will be strengthened to fast-track the process for emergency use authorisation of Covid-19 vaccines.
- Main focus of the session was on energy and climate.
- Several developing countries called for safeguarding the interest of developing world.

Rome Declaration:
- The Rome Declaration consists of 16 mutually agreed principles, which aims to guide joint action for preventing future health crises and to build a safer, equitable and sustainable world. 16 principles are as follows:
1. Supporting and enhancing the existing multilateral health architecture for detection, response, prevention and preparedness.
2. Working towards monitoring & implementation of multi-sectoral, evidence-based One Health approach in a bid to address risks emerging due to interface between human, animal & environment.
3. Fostering all-of-society and health-in-all policies.
4. Promotion of multilateral trading system
5. Enabling equitable, affordable and global access to high-quality, safe & effective health systems.
6. Supporting low and middle-income countries in a bid to build expertise, and develop local & regional manufacturing capacities.
7. Focus on data sharing, capacity building, voluntary technology and licensing agreements.
8. Enhancing support to existing preparedness and prevention structures.
9. Investing in worldwide health & care workforce
10. Investing in adequate resources, training, and staffing of diagnostic public & animal health laboratories.
11. Investments for developing and improving inter-operable early warning surveillance, information, and trigger systems
12. Investments in domestic, international & multilateral cooperation for the purpose of research, development & innovation
13. Increasing effectiveness of preparedness & response measures by extending support and promoting meaningful & inclusive dialogue
14. Ensuring effectiveness of financing mechanisms
15. Coordination on pharmaceutical and non-pharmaceutical measures and emergency response with respect to sustainable and equitable recovery
16. Addressing the need of streamlined, enhanced, sustainable and predictable mechanisms for financing pandemic preparedness, prevention, detection and response in long term.

G20 or Group of Twenty:
- 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, 80% of global investment and over 75% of global trade.
- Members: 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.

Significance of G20:
- Together, the G20 members represent-
- Two thirds of the world population.
- 85% of the global gross product.
- 75% of international trade.
- 80% of global investments in research and development.

India and G20:
- 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.
- The global economic agenda making forum is to be presided over by India in 2022, it's a challenge as well as an opportunity for India to foster its presence in the international arena.
- But due to the rising toll of unemployment rates and poverty in the domestic portion, it's hard to take the lead effectively.

21. Yahoo pulls out of China:
- Recently, Yahoo Inc. has pulled out of China (November 2, 2021) because of an increasingly challenging business and legal environment.
- Yahoo took this decision in line with its commitment for rights of users and a free & open internet.
- This decision coincides with the implementation of Personal Information Protection law in China.

Censorship in China:
- Chinese authorities maintain a sharp grip on internet censorship. It requires companies operating in China to censor the keywords and content that are politically sensitive or inappropriate.
- China has also implemented its "Personal Information Protection Law", which set limits to what information companies can gather. It also sets standards on how information must be stored.
- Under Chinese laws, companies operating in the country are required to hand over data if authorities make such request.

Background:
- In 2007, Yahoo was criticized by lawmakers after it handed over data on two Chinese dissidents to Beijing. It led to the imprisonment of Chinese dissidents. Yahoo had previously stopped its operations in China. In the year 2015, it closed down its office in Beijing.
- Yahoo withdrawal from China is largely symbolic because China had already blocked Yahoo services & its web portal.
- China also stopped music and email services of Yahoo on its mainland during 2010s. China does not allow international social media sites and search engines like Facebook & Google to operate there. Users in China access these services by using a virtual private network (VPN).

Polity and Governance

1. Farm Laws Repeal Act, 2021:
- The Farm Laws Repeal Act, 2021 received the assent of the President of India on November 30.

Farm Laws Repeal Bill, 2021:
- The Farm Laws Repeal Bill, 2021 was passed with the aim of repealing the three farm laws namely,

1. Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020
2. Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020
3. Essential Commodities (Amendment) Act, 2020.
- The bill also seeks to amend the Essential Commodities Act, 1955.

Sub-section 1A of 3 of the Essential Commodities Act:
- Central government had inserted sub-section (1A) in section 3 of the Essential Commodity Act, 1955. This provision empowers the government to control production, supply and distribution, etc of essential commodities.
- It provides a mechanism to regulate supply of foodstuffs like pulses, cereals, potato, onions, oils and edible oilseeds under "extraordinary circumstances" like famine, war, extraordinary price rise and natural calamity.

How is a Law Repealed in India?
- Repealing a law is one of the ways to nullify a law. A law is reversed when Parliament thinks there is no longer a need for the law to exist.
- Legislation can also have a "sunset" clause, a particular date after which they cease to exist. For example, the anti-terror legislation Terrorist and Disruptive Activities (Prevention) Act 1987, commonly known as TADA, had a sunset clause, and was allowed to lapse in 1995.
- For laws that do not have a sunset clause, Parliament has to pass another legislation to repeal the law.
- Article 245 of the Constitution gives Parliament the power to make laws for the whole or any part of India, and state legislatures the power to make laws for the state. Parliament draws its power to repeal a law from the same provision.

What is the process for repealing a law?
- Laws can be repealed in two ways - either through an ordinance, or through legislation.
- In case an ordinance is used, it would need to be replaced by a law passed by Parliament within six months. If the ordinance lapses because it is not approved by Parliament, the repealed law can be revived.
- In case of a legislation to repeal the farm laws. It will have to be passed by both Houses of Parliament, and receive the President's assent before it comes into effect. All three farm laws can be repealed through a single legislation. Usually, Bills titled Repealing and Amendment are introduced for this purpose.

2. Face Recognition Technology for Pensioners:
- Recently, the Minister of State for Personnel launched a "unique" face recognition technology. The face recognition technology would act as a proof of life certificate' for pensioners.
- It will also ensure ease of living for retired & elderly citizens.
- All pensioners are required to submit their life certificate annually in order to receive pension.
- Ministry of Personnel, Public Grievances & Pensions has also implemented a facility to give certificate digitally.
- The Central government has been sensitive towards the needs of pensioners as well as to ensure ease of living for them. In 2014, when government came to power, it decided to introduce and implement digital life certificate for the pensioners, in order to receive pension easily.
- The initiative is a historic and far-reaching reform because it will touch the lives of 68 lakh central government pensioners as well as those covered under the EPFO and state governments.
- This face recognition technology has been devised by Ministry of Electronics and Information Technology in collaboration with the **UIDAI** (Unique Identification Authority of India).
- The initiative to provide digital life certificates was launched by the Department of Pension and Pensioners' Welfare (DoPPW).

Unique Identification Authority of India (UIDAI):
- It is a statutory authority established on 12th July 2016 by the Government of India under the jurisdiction of the Ministry of Electronics and Information Technology, following the provisions of the Aadhaar Act 2016.
- The UIDAI is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.
- The UIDAI was initially set up by the Government of India in January 2009, as an attached office under the aegis of the Planning Commission.

3. Participation of Female Voters in India Exceeds Men:
- Recently, the Chief Election Commissioner (CEC) revealed that women's participation in Indian elections "exceeded that of men and stood at more than 67% in the 2019 General Election", and that the Gender gap, which was -16.71% in 1962, has not only closed but reversed to +0.17% in 2019.
- India has witnessed a 235.72% increase in female electors since the 1971 elections.
- The Election Commission conducts various initiatives to enhance women's participation in elections and make electoral practice more accessible and inclusive.

Initiatives taken by ECI to increase women participation:
1. Associated more women as polling booth officials,
2. Large number of All Women Managed Polling Stations
3. Creche facility at Polling Stations
4. Separate toilets and waiting area at the polling booths
5. Ease of registration with women Block level Officers etc.

Absentee Voter Facilitation:
- The ECI introduced the Absentee Voter Facilitation in 2020 to ensure voting facility at the doorstep. It was introduced for 80-plus senior citizens, PwDs and COVID-affected voters. Such postal ballot facility was successfully implemented in six state assembly elections including Assam, Bihar, Tamil Nadu, West Bengal, Kerala and the Union Territory of Puducherry.

4. Chhattisgarh-PESA Act:
- Recently, the Chhattisgarh government has formulated draft rules under Panchayat Extension to Scheduled Areas (PESA) Act, 1996, terming it the Chhattisgarh Panchayat Provisions (Extension of the Scheduled) Rules, 2021.
- Tribals in Chhattisgarh have been demanding the enactment of PESA rules for some time, as it would give them more power over their resources.
- The bill envisages instituting devaluation of power, and strengthening the gram sabhas at the village level.
- Six states (Himachal Pradesh, Andhra Pradesh, Telangana, Rajasthan, Gujarat, Maharashtra) have formed the PESA laws, and Chhattisgarh would become the seventh state if the rules are enacted.

About PESA Act 1996:
- PESA Act stands for "Panchayat (Extension of the Scheduled Areas) Act, 1996". This act was enacted by Central government to ensure self-governance through gram sabhas for people in scheduled areas.
- Role of State Government: PESA, was enacted by the Centre to ensure self-governance through gram sabhas (village assemblies) for people living in scheduled areas.
- State governments were required to amend their respective Panchayat Raj Acts without making any law that would be inconsistent with the mandate of PESA.
- PESA Act legally recognises the right of tribal communities, residents of the scheduled areas, to govern themselves through their own systems of self-government.
- It acknowledges their traditional rights over natural resources.

Importance of Gram Sabha in PESA Act:
- **Democratic Decentralisation:** PESA empowers gram sabhas to play a key role in approving development plans and controlling all social sectors. **This includes management of :**
1. Resources over jal, jangal, zameen (water, forest and land)
2. Minor forest produce
3. **Human resources:** Processes and personnel who implement policies

4. Managing local markets
5. Preventing land alienation
6. Regulating intoxicants among other things
- **Preserving Identity:** The powers of gram sabhas include maintenance of cultural identity and tradition, control over schemes affecting the tribals, and control over natural resources within the area of a village.
- **Conflict Resolution:** The PESA Act thus enables gram sabhas to maintain a safety net over their rights and surroundings against external or internal conflicts.
- **Public Watchdog:** The gram sabha would have the powers to monitor and prohibit the manufacturing, transport, sale and consumption of intoxicants within their village limits.

5. Personal Data Bill Adopted by JPC:
- Recently, the Joint Committee of Parliament (JCP) on the Personal Data Protection Bill tabled its report in both Houses of Parliament.

What are the major recommendations?
- **Non-Personal Too:** The key recommendations that changes the nature of the Bill itself is for inclusion of non-personal data within the larger umbrella. This means that all issues under the new legislation will be dealt with by a single Data Protection Authority (DPA) instead of separate ones for personal and non-personal.
- **Transition Period:** To ensure that all such data aggregators get ample time to comply with the rules under the new Bill, the JCP suggested that up to 24 months be given from the date of notification of the Act.
- **Social Media Liability:** A third major recommendation is that social media platforms that do not act as intermediaries should be treated as publishers, and therefore be held liable for the content they host.
- **Penalty:** The committee has recommended a fine of up to Rs 15 crore or 4% of the total global turnover of the firm for data breaches, and a jail term of up to 3 years if de-identified data is re-identified.
- **Timely Alert:** In case of any data breach, the data aggregator or fiduciary must notify the DPA within 72 hours of becoming aware of it.

What is a Joint Parliamentary Committee (JPC)?
- A Joint Parliamentary Committee (JPC) is set up to examine a particular bill presented before the Parliament, or for the purpose of investigating cases of financial irregularities in any government activity.
- The JPC is an ad-hoc body.
- It is set up for a given period of time and is aimed at addressing a specific issue.
- Composition:
- In order to set up a JPC, a motion is passed in one House and supported by the other House.
- The committee's members are decided by Parliament.
- The number of members can vary. There are twice as many Lok Sabha members as the Rajya Sabha.

Powers and Functions of JPC:
- A JPC is authorised to collect evidence in oral or written form or demand documents in connection with the matter.
- The proceedings and findings of the committee are confidential, except in matters of public interest.
- The government can take the decision to withhold a document if it is considered prejudicial to the safety or interest of the State.
- The Speaker has the final word in case of a dispute over calling for evidence.
- The committee can invite interested parties for inquiry and summon people to appear before it.
- The committee gets disbanded following the submission of its report to Parliament.

6. UIDAI seeks exception from Data Bill:
- Recently, the Unique Identification Authority of India (UIDAI) has asked for exemption from the Personal Data Protection (PDP) Law.
- In an interaction with the Joint Parliamentary Committee on Data Protection Bill 2019, UIDAI functionaries said the authority is already being governed by the Aadhaar Act and there cannot be duplicity of laws.
- Under the Aadhaar Act 2016, UIDAI is responsible for
1. Aadhaar enrolment and authentication
2. Developing system for issuing Aadhaar numbers

3. Perform authentication
4. To ensure the security of identity information

Personal Data Protection (PDP) Law:
- The law is a comprehensive piece of legislation that seeks to give individuals greater control over how their personal data is collected, stored and used.
- The Bill also establishes a Data Protection Authority for the same.

Genesis of the Bill:
- The genesis of this Bill lies in the report prepared by a Committee of Experts headed by Justice B.N. Srikrishna.
- The committee was constituted by the government in the course of hearings before the Supreme Court in the right to privacy case (Justice K.S. Puttaswamy v. Union of India).
- Contentious section 35:
- Section 35, which invokes "sovereignty and integrity of India," "public order", "friendly relations with foreign states" and "security of the state" to give powers to the Central government to suspend all or any of the provisions of this Act for government agencies.

7. Legal Metrology (Packaged Commodities) Rules 2011:
- The Union Ministry of Consumer Affairs has amended the Legal Metrology (Packaged Commodities) Rules, 2011, by which companies are now required to print 'unit sale price' on packaged commodities.

Key Points:
1. New amendment will be applicable from April 2022.
2. With this move, it will be easier for consumers to find the cost in unit terms.
3. This amendment was done for consumers to make a conscious purchase decision. It will also lessen compliance burden on industries.

What amendment has been made?
- Under the amendment, companies which are selling packaged commodities with a quantity of more than one kilogram are required to print 'unit sale price' per kg along with its maximum retail price (MRP).
- For instance, a packaged commodity of 2.5 kg should mention a unit sale price per kg along with its total MRP, while a packaged commodity of less than one kg quantity should mention 'unit sale price' per gram along with MRP.
- Rule regarding mentioning of quantity on a packaged commodity was amended. Quantity should either be in 'number' or 'unit' and it should be mentioned as "xxN or xxU" on the pack.

Compliance requirement:
- In order to ease the compliance requirements, ministry has scrapped Schedule 2 of the rules, under which 19 types of commodities were to be packed in quantities by number or measure or weight in a specified manner.
- According to the rule, rice or wheat flour were required to be packed in 100-gram package, 200-gram package, 500-gram package, 1 kg package, 1.25 kg package, 1.5 kg package, 1.75 kg package, 2kg package, 5 kg package and in multiples of 5 kg.
- Amendment has been made on the way MRP is printed on the packaged commodities. Currently, MRP is printed in "maximum or max retail price Rs xx.xx" format. If a company mentioned only in "Rs xx" format, it was considered as violation. Now new amendment has been made under which companies are required to give MRP in Indian rupees and they are now free from any set format.

What is maximum retail price (MRP)?
- The **maximum retail price (MRP)** that is printed on all packaged commodities that consumers purchase was introduced in 1990 by the Ministry of Civil Supplies, Department of Legal Metrology, by making an amendment to the Standards of Weights and Measures Act (Packaged Commodities' Rules) (1976).
- It was meant to prevent tax evasion and protect consumers from profiteering by retailers.
- Before the amendment, manufacturers could print either the maximum retail price (inclusive of all taxes) or the retail price (local taxes extra). When producers opted for the latter method, it was found that retailers often charged more than the locally applicable taxes. Thus, the amendment was made to introduce the compulsory printing of MRP on all packaged commodities.

8. Cryptocurrency and Regulation of Official Digital Currency Bill, 2021:
- Recently, The Union Government is to introduce the Cryptocurrency and Regulation of Official Digital Currency Bill 2021, in the Winter Session of the Parliament.

The Aim of the Proposed Legislation:
- The proposed Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 seeks to create a facilitative framework for the creation of the official digital currency to be issued by the Reserve Bank of India.
- The Bill also seeks to prohibit all private cryptocurrencies in India but with certain exceptions to promote the underlying technology of cryptocurrency and its uses.
- Currently, the Bill is not in the public domain and no public consultations have been held.

Background:
- In 2020, the Supreme Court lifted the ban imposed by RBI on crypto currency. The ban applied only to the use of Indian banking channels for crypto transactions. Thus, individuals continued to trade in cryptocurrencies using peer-to-peer networks.
- As per the court, very little evidence to show that crypto currencies pose a threat to the Indian Banking system.
- Recently, cryptocurrencies have seen an exponential increase in interest with Indian exchanges clocking impressive user additions and a sustained surge in daily trading volumes.
- On February 5, 2021, the Reserve Bank of India instituted an internal panel to suggest a model for the central bank's digital currency.
- The recent move of the Union Government comes after a week of first-ever Parliamentary panel discussion on crypto finance. In this discussion, a consensus was reached that cryptocurrency needs to be regulated, instead of its complete ban.
- The proposed Bill has been prepared after several meetings with stakeholders and discussions on regulating digital currencies.
- RBI and the Securities & Exchange Board of India (SEBI) have raised concerns about the unregulated growth of cryptocurrencies in India, by keeping vulnerable retail investors in focus.

About Cryptocurrency:
- Cryptocurrency or crypto-currency is a collection of binary data which is designed to work as a medium of exchange or form of payment that can be exchanged online for goods and services.
- A cryptocurrency can be defined broadly by two distinctive features, firstly it is based on a distributed ledger meaning that records of its ownership are held across thousands of computers simultaneously, rather than any centralised system.
- Secondly, it is not issued by a centralised authority such as a central bank. For instance, bitcoin is created by computers solving increasingly complex mathematical problems. Thus, it limits the supply of cryptocurrency.
- Cryptocurrencies work using a technology called **blockchain**. Blockchain is a decentralized technology spread across many computers that manage and record transactions. What tempts people with this technology is its security.
- Some public cryptocurrencies are Bitcoin, Ethereum, and Litecoin while Monero, Zcash, and Dash are private cryptocurrencies.

Economic and Social Development

1. NHA Estimates for India for 2017-18:
- Recently, National Health Accounts (NHA) reported that the government has increased the expenditure on health, making the decline of Out-Of Pocket Expenditure (OOPE) to 48.8% in 2017-18 from 64.2% in 2013-14.

- This report was produced by the National Health Systems Resource Centre, designated as the **National Health Accounts** (NHA) Technical Secretariat in 2014 by the Health Ministry.
- The NHA estimates are prepared by using an accounting framework based on the internationally accepted System of Health Accounts 2011, provided by the World Health Organization (WHO).
- The World Health Organization (WHO) was constituted in 1948 for Universal Health Coverage (UHC). To measure UHC, it becomes essential to measure how health systems are being financed. Health systems are measured on the basis of data generated by National Health Accounts.

National Health Systems Resource Centre:
- It was established in 2006-07 under the National Rural Health Mission (NRHM) of Government of India to serve as an apex body for technical assistance.
- Its mandate is to assist in policy and strategy development in the provision and mobilization of technical assistance to the states and in capacity building for the Ministry of Health and Family Welfare (MoHFW).
- NHAs were developed using the System of Health Accounts (SHA), which is defined by OECD. The SHA was developed in 2000.

2. India's 1st Certified Organic Fruit-Kiwi:
- Recently, India's only certified organic kiwi from **Ziro Valley** Farms of Arunachal Pradesh was launched at a mega National Tribal Festival called Aadi Mahotsav. This festival is being held in Dilli Hat, INA in New Delhi.
- The launch ceremony was held in association with support from Arunachal Pradesh Government and **National Agricultural Cooperative Marketing Federation of India Ltd** (NAFED).
- This initiative was undertaken as part of the vision with the aim of transforming India into a self-reliant nation under '**Atma Nirbharta campaign'**.
- Arunachal Pradesh is the **1st Indian state**, that obtained "organic certification of kiwifruit" under the "**Mission Organic Value Chain Development for North East Region** (MOVCD-NER)", which is a Central Government scheme launched for North-eastern states.
- Ziro Valley is a town and district headquarters of Lower Subansiri district in Arunachal Pradesh. This town has been included in Tentative List for UNESCO's World Heritage Site for its Apatani cultural landscape.

Aadi Mahotsav:
- It is a national tribal festival and a joint initiative of the Ministry of Tribal Affairs and the Tribal Cooperative Marketing Development Federation of India (TRIFED). It commenced in 2017 and is held annually.
- It is an attempt to familiarise the people with the rich and diverse craft, culture of the tribal communities across the country, in one place.
- In 2019, the festival was held in New Delhi and featured an exhibition-cum-sale of tribal handicrafts, art, paintings, fabric, jewellery, etc.

3. RBI's new norms for Private Banks:
- Recently, the Reserve Bank of India (RBI) released new norms for Private Banks.
- Under the new norms, RBI has accepted the suggestion to increase cap on stake of promoters in banks from 15 percent to 26 percent. However, it is still examining if industrial houses should be allowed to run banks in accordance with the recommendations of an internal working group (IWG).
- In all, RBI accepted 21 out of 33 recommendations of the IWG.

Internal Working Group (IWG):
- An Internal Working Group (IWG) was constituted by Reserve Bank on June 12, 2020 to review the extant guidelines on ownership and corporate structure for Indian private sector banks.
- It suggested in its report (published on November 20, 2021) that large corporate or industrial houses should be allowed in banking following the amendments to the Banking Regulation Act. This recommendation created an uproar among former governors and deputy governors of RBI. RBI did not accept this suggestion.

RBI's call on recommendations:
- The RBI said that, non-promoter shareholding cap for an individual or non-financial institution should be 10 per cent as opposed to what suggested by IWG to keep it 15 per cent for all kinds of non-promoter

shareholders. However, RBI allowed the financial institutions, public sector undertakings (PSUs), supranational institutions, or government to hold 15 per cent in private banks.
- As per RBI's earlier rules, non-promoter shareholding could increase to 40 per cent for well-diversified, regulated, and listed financial institutions, PSUs, supranational institutions, or government.
- RBI accepted the suggestions on a "reporting mechanism" to pledge shares by promoters.
- It rejected the recommendation to allow payments banks to convert themselves into small finance banks having three years' experience.
- It accepted IWG's recommendation that banks should have higher initial capital of at least Rs 1,000 crore.

4. NHAI proposes Gorakhpur-Siliguri Expressway:
- Recently, the National Highways Authority of India (NHAI) proposed for the alignment of another expressway, that will run from Gorakhpur in Uttar Pradesh to Siliguri in West Bengal via Bihar.
- NHAI will prepare the detailed project report, after the greenfield alignment is approved by Bihar government.
- NHAI had submitted the portion of alignment of Gorakhpur-Siliguri expressway, to the road construction department (RCD) in order to discuss and approve in November itself.
- Out of total length, 450km stretch of expressway of four/six-lane configuration will pass through Bihar.
- This highway is part of Bharatmala project. Estimated cost on this project will be around Rs 6000 crore.
- This project will benefit the people of Bihar. It will ease the vehicular traffic from east to west part in Bihar.
- The proposed expressway will enter Bihar from Gopalganj and exist from Kishanganj. It will crisscross Siwan, Chapra, Muzaffarpur, Sitamarhi, Madhubani, Supaul, Saharsa and Purnia, in that order.

Bharatmala Pariyojana:
- The Bharatmala Pariyojana is an umbrella program for the **highways** sector envisaged by the **Ministry of Road Transport and Highways.**
- It is a centrally-sponsored & funded Road & Highways project. The project will build roads and highways from Maharashtra, Gujarat, Rajasthan, Punjab and Haryana. It will then cover entire Himalayan territories covering Jammu & Kashmir, Himachal Pradesh and Uttarakhand.
- It will also move towards Uttar Pradesh and Bihar alongside Terai, and construct highways in West Bengal, Sikkim, Assam, Arunachal Pradesh, covering up to Indo-Myanmar border across Manipur and Mizoram. The project will interconnect 550 District Headquarters.

5. NITI Aayog report on India's MPI:
- Recently, the NITI Aayog published its report on India's "Multidimensional Poverty Index" (MPI.
- The report was prepared on the basis of National Family Health Survey (NFHS) for 2015-16.
- As per NITI Aayog's report, in year 2015-16, one in every four people in India was multidimensionally poor. It accounts that, 25.01 per cent of the population was multidimensionally poor.
- India's national MPI was prepared using globally accepted and robust methodology developed by **United Nations Development Programme** (UNDP) and **Oxford Poverty & Human Development Initiative (OPHI)**. The index was prepared with the aim of leveraging the monitoring mechanism and methodology of MPI in order to rigorously benchmark national and sub-national performance.

MPI of India for 2021:
- MPI for 2021, was launched by UNDP and OPHI, showed that 27.9 per cent of India's population were multidimensionally poor.
- India was ranked at 62nd position out of 109 nations on the index.
- Index was prepared on the basis of 10 indicators like adequate nutrition, lack of improved drinking water, or at least six years of schooling.
- The report considered a person spending less than Rs 47 per day in cities and spending less than Rs 32 per day in villages as poor. However, this approach of measuring MPI was abandoned by NITI Aayog.

Three Dimensions of MPI:
- The MPI is based on three dimensions namely education, health, and standard of living. Each of the dimension is having a weighting of one-third in the index.

- 12 segments of these dimensions include- nutrition, antenatal care, child & adolescent mortality, school attendance, years of schooling, cooking fuel, drinking water, sanitation, housing, electricity, bank accounts and assets.

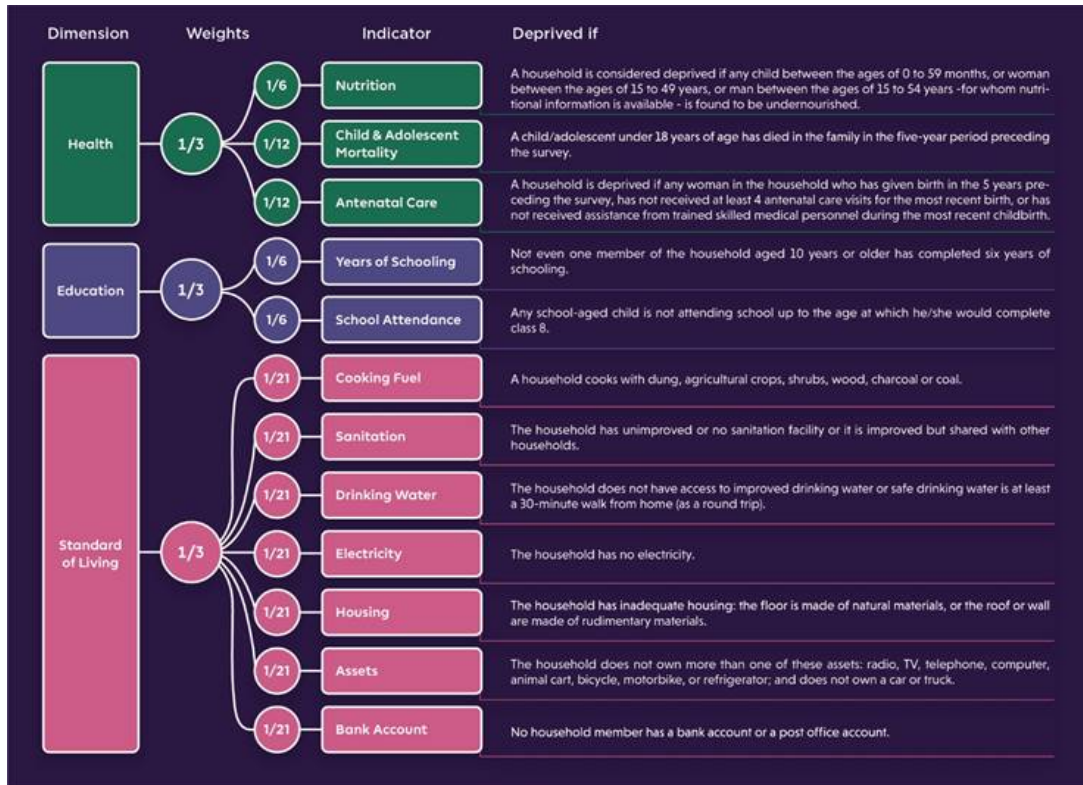| Dimension	Weights		Indicator	Deprived if
Health	1/3	1/6	Nutrition	A household is considered deprived if any child between the ages of 0 to 59 months, or woman between the ages of 15 to 49 years, or man between the ages of 15 to 54 years -for whom nutritional information is available - is found to be undernourished.
		1/12	Child & Adolescent Mortality	A child/adolescent under 18 years of age has died in the family in the five-year period preceding the survey.
		1/12	Antenatal Care	A household is deprived if any woman in the household who has given birth in the 5 years preceding the survey, has not received at least 4 antenatal care visits for the most recent birth, or has not received assistance from trained skilled medical personnel during the most recent childbirth.
Education	1/3	1/6	Years of Schooling	Not even one member of the household aged 10 years or older has completed six years of schooling.
		1/6	School Attendance	Any school-aged child is not attending school up to the age at which he/she would complete class 8.
Standard of Living	1/3	1/21	Cooking Fuel	A household cooks with dung, agricultural crops, shrubs, wood, charcoal or coal.
		1/21	Sanitation	The household has unimproved or no sanitation facility or it is improved but shared with other households.
		1/21	Drinking Water	The household does not have access to improved drinking water or safe drinking water is at least a 30-minute walk from home (as a round trip).
		1/21	Electricity	The household has no electricity.
		1/21	Housing	The household has inadequate housing: the floor is made of natural materials, or the roof or wall are made of rudimentary materials.
		1/21	Assets	The household does not own more than one of these assets: radio, TV, telephone, computer, animal cart, bicycle, motorbike, or refrigerator; and does not own a car or truck.
		1/21	Bank Account	No household member has a bank account or a post office account.

FIGURE 1: INDICATORS IN INDIA'S NATIONAL MPI

6. Base year modified in Wage Rate Index:

- Recently, the government has revised the **base year** for **Wage Rate Index** (WRI) to 2016 which will replace the old series with a base of 1963-65.
- The Wage Rate Index Number measures the relative changes in wage rates over a period of time, high or low Wage Rate Index in an industry does not necessarily indicate high or low wage rate in that industry as compared to other industries.

What Is a Base Year?

- A base year is used for comparison in the measure of a business activity or economic index. For example, to find the rate of inflation between 2013 and 2018, 2013 is the base year or the first year in the time set.
- A base year is the first of a series of years in an economic or financial index and is typically set to an arbitrary level of 100.
- The **Ministry of Labour & Employment** has released a new series of **Wage Rate Index** (WRI) with base year 2016, being compiled and maintained by the Labour Bureau, an attached office of the ministry.
- The new series on WRI has been compiled on a half-year basis (on the first of January and July every year) as against the annual in the existing series.
- The new **WRI basket** (2016=100) has enhanced the scope and coverage in terms of occupations and industries as compared to old WRI series (1963-65=100).
- Of the 37 industries covered in the new series, 16 new ones - including textile garments, footwear and petroleum - have been added under the manufacturing sector.
- In the new series, the oil mining industry has been introduced in the basket in place of mica mines industry, to make the mining sector more representative of the three different kinds of mining namely coal, metal and oil.
- Total 3 plantation industries namely tea, coffee and rubber have been retained in the new WRI basket with enhanced coverage.

- The top five industries - motor vehicles, coal mines, textile garments, iron & steel and cotton textiles together account for 46% of the total weight.

Significance of the new series:
- The revised base will be more representative and play a critical role in determining the minimum wages and national floor wages along with other parameters.
- The government periodically revises the base year for major economic indicators to reflect the changes in the economy and to capture the wage pattern of workers.
- It provides useful tips to employers on deciding on the appropriate human resource strategy.

WRI 2020:
- Highest Wage Rate Index: The highest Wage Rate Index was recorded in Drugs & Medicines, followed by Sugar, Motor Cycles, Jute Textiles and Tea Plantation.
- Lowest Wage Rate Index: The lowest Wage Rate Index was recorded in Rubber Plantation, followed by Paper, Castings & Forgings, Woollen Textiles and Synthetic Textiles.

7. Funds Allotted for MGNREGA Scheme:
- Recently, the Central government allotted more of Rs 10000 crore on November 25, 2021 for Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) Scheme, as an interim measure.
- The Central government has increased the fund allocations for financial year 2021-22 by 18 percent as compared to the last financial year as budget estimate. Ministry had allocated Rs 50,000 crore additional funds for MGNREGA scheme above the Budget Estimate, so far.

Mahatma Gandhi Employment Guarantee Act 2005:
- MGNREGA is an Indian labour law and social security measure, enacted with an aim to guarantee the 'right to work'.
- The act was passed on August 23, 2005. The act aims to enhance livelihood security across rural areas by generating at least 100 days of wage employment to every household for unskilled adult members in a financial year.
- The act was proposed by P.V. Narasimha Rao in 1991. It was accepted in the parliament and implemented across 625 districts of India. After this, the scope of NREGA was increased to cover all the districts of India from April 1, 2008.

Salient Features of MGNREGA:
1. Gives legal guarantee of wage employment to the adult members of rural households who are willing to do unskilled manual labour subject to a maximum of 100 days per household
2. Applicable for all villages in the District
3. Every rural household has the right to register under MGNREGA
4. Job cards issued to every household registered under MGNREGA
5. Job cards issued within 15 days from the date of receipt of application for the job card registration
6. The registered job card holders can seek employment by giving a group / individual application
7. A minimum of 10 job seekers shall apply to sanction a new work under MGNREGA
8. Employment provided by sanctioning one of the works under "Shelf of Works" as identified and prioritized by the village community within 15 days from the date of receipt of applications for providing employment under MGNREGA
9. The village community has the right to choose works under 8 permissible categories of works
10. "Shelf of works" will be identified by the village community for 5 yrs which can be taken up in their villages as per the job demand and entitled persondays
11. The works proposed by the village community cannot be altered by anyone unless they are not in conformity with the guidelines of MGNREGA
12. The work shall be provided within 5 kms jurisdiction from the village
13. If the work provided is beyond 5 Kms, the job seekers shall be given 10% of the minimum wages as additional amount
14. State Govt. to pay 25% of minimum wage for the 1st 30 days as compensatory daily unemployment allowance on failure to provide employment for the families demanding the works under MGNREG Act, and ½ of wage for remaining period of the year

15. Wages are paid according to State Minimum Wage rate notified under Minimum Wages Act 1948. The current wage rate is Rs.117/- for all unskilled work and Rs. 120/- for skilled labour.
16. Equal payment for men and women
17. Wages to be paid within a fortnight
18. 1/3 beneficiaries should be women
19. Work site facilities such as creche, drinking water and shade have to be provided
20. 60:40 wage and material ratio has to be maintained for all works undertaken under NREGA
21. No contractors and machinery allowed
22. Grievance redressal mechanism to be set up for ensuring a responsive implementation process
23. Social Audit is a must for all the works implemented under NREGA. The details of Social Audit conducted during 2010-11 and 2011-12 (up to the month of May)
24. Provisions of RTI Act shall be applicable in Letter & Spirit to ensure transparency and accountability

8. PMGKAY Extended till March 2022:

- Recently, the Union government has extended "Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) for four months.
- Terming it as a pro-people move, PMGKAY was extended from December 2021 till March 2022 as a part of Phase 5 of this scheme.
- PMGKAY is a part of Pradhan Mantri Garib Kalyan Package (PMGKP) to help the poor fight the battle against Covid-19 or an Economic Response to COVID -19 - launched in March 2020.
- Its nodal Ministry is the Ministry of Finance.
- It was initially announced for a three month period (April, May and June 2020), covering 80 crore ration cardholders. Later it was extended till November 2020. However in April 2021, the government had announced its decision to restart the **PMGKAY**.
- The scheme aimed at providing each person who is covered under the National Food Security Act 2013 with an additional 5 kg grains (wheat or rice) for free, in addition to the 5 kg of subsidised food grain already provided through the **Public Distribution System** (PDS).
- The new version of the PMGKAY lacks one of its important components which was there in 2020 PMGKAY i:e free-of-cost 1 kg pulses per month to each household covered under the NFSA.

Public Distribution System (PDS):

- The Public Distribution System (PDS) evolved as a system of management of scarcity through distribution of foodgrains at affordable prices.
- PDS, with its focus on distribution of foodgrains in urban scarcity areas, had emanated from the critical food shortages of 1960s.
- Over the years, PDS has become an important part of Government's policy for management of food economy in the country.
- **PDS is supplemental** in nature and is not intended to make available the entire requirement of any of the commodities distributed under it to a household or a section of the society.
- PDS is operated under the joint responsibility of the Central and the State/UT Governments. The Central Government, through Food Corporation of India (FCI), has assumed the responsibility for procurement, storage, transportation and bulk allocation of food grains to the State Governments. The operational responsibility including allocation within State, identification of eligible families, issue of Ration Cards and supervision of the functioning of Fair Price Shops (FPSs) etc., rest with the State Governments.
- nder the PDS, presently the commodities namely wheat, rice, sugar and kerosene are being allocated to the States/UTs for distribution. Some States/UTs also distribute additional items of mass consumption through the PDS outlets such as pulses, edible oils, iodized salt, spices, etc.

Revamped Public Distribution System (RPDS):

- The Revamped Public Distribution System (RPDS) was launched in June, 1992 with a view to strengthen and streamline the PDS as well as to improve its reach in the far-flung, hilly, remote and inaccessible areas where a substantial section of the poor live.

Targeted Public Distribution System (TPDS):

- In June, 1997, the Government of India launched the Targeted Public Distribution System (TPDS) with focus on the poor. Under the PDS, States were required to formulate and implement foolproof

arrangements for identification of the poor for delivery of foodgrains and for its distribution in a transparent and accountable manner at the FPS level.

9. National Family Health Survey-5:
- The National Family Health Survey 2019-21 (NFHS-5), the fifth in the NFHS series, provides information on population, health, and nutrition for India and each state/union territory (UT).

- The National Family Health Survey-5 (NFHS-5) findings were released on November 24, 2021.

Key Findings of the Survey:
- **NFHS 4 & 5, a Comparison:** There are many pluses in the report card of NFHS-5.
- Improvements have been witnessed in several dimensions such as educational attainment, institutional deliveries, vaccinations, infant mortality etc.
- Irrespective of the pace, the progress shall be appreciated especially given the abysmal state of India's health infrastructure which has been tragically apparent since the COVID-19 pandemic hit.
- **Decline in TFR, a Major Positive:** The Total Fertility Rate (TFR) has been falling over time and has now reached (at 2.0) just below the replacement rate of **2.1.**
- This is true across all States of India which means that the total population has stabilised.
- Difference in Sex Ratio at Birth and at Adulthood: For the first time in India, between 2019-21, there were 1,020 adult women per 1,000 men.
- However, the data shall not undermine the fact that India still has a sex ratio at birth (SRB) more skewed towards boys than the natural SRB (which is 952 girls per 1000 boys).
- Uttar Pradesh, Haryana, Punjab, Rajasthan, Bihar, Delhi, Jharkhand, Andhra Pradesh, Tamil Nadu, Odisha, Maharashtra are the major states with low SRB.
- **Poor Performance in Dealing with Anaemia:** The incidence of anaemia in under-5 children (from 58.6 to 67%), women (53.1 to 57%) and men (22.7 to 25%) has worsened in all States of India (20%-40% incidence is considered moderate). Barring Kerala (at 39.4%), all States are in the "severe" category.
- **Performance of Malnutrition Indicators:** The three indicators of malnutrition, stunting (low height-for-age), wasting (low weight-for-height) and underweight (low weight-for-age), show an overall improvement.
- However, this overall improvement creates an anomaly as in Phase 1 of the NFHS-5, several States revealed a worsening in one or more of these indicators, whereas in Phase 2, none of the States showed a worsening.
- It might be possible that the covid-19 affected the survey in Phase 2, leading to undercounting of incidences.
- Additionally, an increase is witnessed in the proportion of overweight children, women and men which also reflects malnutrition leading to serious health consequences in the form of non-communicable diseases (NCDs).

10. 'Bharat Gaurav' Scheme:
- Recently, Indian Railways has launched a new scheme called "Bharat Gaurav Scheme". Under this scheme, **private tour operators** can take trains on lease from railways and run these trains on any circuit of their choice.
- The private operators would also get the freedom to decide routes, fares and quality of services on the trains. For this purpose, railways have earmarked 3033 ICF coaches, roughly equal to 150 trains.
- Anyone including from trusts, societies, consortia and even state governments can apply to lease these trains and run them on special theme-based tourism circuits.
- **Theme-based tourism circuit means, trains like:**
1. Guru Kripa which goes to all places linked to Guru Nanak
2. Ramayan-themed train which goes to all places related to Lord Ram.
- Any interested party can apply online to lease the train, by registering with a one-time fee of Rs 1 lakh. This arrangement can be made for two to 10 years. Operators will also require to give a security deposit of Rs 1 crore per rake. Size of each train will be 14-20 coaches, including two guard vans. Railways will just look after haulage charges and Right to Use fee.

- Parameters of the **Bharat Gaurav scheme** are that, Operator will have to offer sightseeing, local transport (taxi etc), food, onboard entertainment, hotels at stopover places etc.
- The railways will set up special units across the zones, in order to facilitate and handhold the operators. Railways has also allowed branding and advertisement inside and on the exterior of such trains.

11. NITI Aayog launches SDGs Urban Index 2021-22:
- Recently, the NITI Aayog launched "Sustainable Development Goals (SDGs) Urban Index and Dashboard 2021-22". Shimla has topped the list of cities by scoring highest on the index.
- Coimbatore and Chandigarh have been ranked at second and third position.
- Thiruvananthapuram, Panaji, Pune, Kochi, Tiruchirappalli, Ahmedabad and Nagpur are among top 10 cities on the index.

SDG Urban Index & Dashboard:
- The SDG **Urban Index & Dashboard** (2021-22) was launched by NITI Aayog on November 23, 2021. It ranks 56 urban areas on 77 SDG indicators across targets like zero hunger, ending poverty, quality education, good health and wellbeing, gender equality etc in the SDG framework.
- The index and dashboard will help in strengthening SDG localization as well as institute robust SDG monitoring at the city level. The index highlights strengths and gaps of ULB-level data, monitoring as well as reporting systems.
- Out of total 56 urban areas ranked in the index, 44 are having the population of more than one million. Twelve are state capitals having population of less than one million.
- **Top ten urban areas:** Top ten urban areas in the index are: Shimla, Coimbatore, Chandigarh, Thiruvananthapuram, Kochi, Panaji, Pune, Tiruchirapalli, Ahmedabad and Nagpur, in that order.
- **Bottom 10 urban areas:** Bottom ten urban areas in the index are: Faridabad, Kolkata, Agra, Kohima, Jodhpur, Patna, Guwahati, Itanagar, Meerut and Dhanbad.

12. All India Survey on Domestic Workers:
- Recently, **India's first** survey of domestic workers has been started on November 22, 2021.
- The survey is being carried out by the **Labour Bureau.**
- It is aimed at estimating the number of domestic workers at the national and State levels, those engaged in informal employment, and migrant and non-migrant workers; the proportion of domestic workers who stay at their employers' homes and those who do not; the wages of such workers; and other socio-economic factors.
- The survey would also include details of the number of households with "live-in and live-out" domestic workers and the average number of workers engaged by various kinds of households.

Draft National Policy on domestic workers:
- A draft National Policy on domestic workers is under consideration of the Central Government. The policy, if finalised, will benefit 50 lakh domestic workers in the country including maids and drivers amongst others.

Salient features of the policy:
- Inclusion of Domestic Workers in the existing legislations.
- Domestic workers will have the right to register as workers. Such registration will facilitate their access to rights & benefits accruing to them as workers.
- Right to form their own associations, trade unions.
- Right to have minimum wages, access to social security, protection from abuse, harassment, violence.
- Right to enhance their professional skills.
- Protection of Domestic Workers from abuse and exploitation.
- Domestic Workers to have access to courts, tribunals, etc.
- Establishment of a mechanism for regulation of concerned placement agencies.

Measures already being taken:
- The Central Government has enacted the **Unorganized Workers' Social Security Act, 2008** for providing social security to all unorganized workers including domestic workers.
- **Social security schemes** like National Old Age Pension Scheme (Ministry of Rural Development); National Family Benefit Scheme (Ministry of Rural Development); Janani Suraksha Yojana (Ministry of Health and Family Welfare), Ayushman Bharat (Ministry of Health and Family Welfare).
- **Aam Aadmi Bima Yojana** (AABY) with Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) provide life and disability coverage to the unorganised workers for the age group of 18 to 50 years depending upon their eligibility.
- **Domestic Workers Sector Skills Council** has been established under the Ministry of Skills Development to enable professionalization of domestic workers and enable their career progression.

Labour Bureau:
- Labour Bureau is an attached office under **Ministry of Labour and Employment**, was set up on 1st October 1946.
- Labour Bureau is responsible for the collation, collection and publication of statistics and related information on wages, earnings, productivity, absenteeism, labour turn-over, industrial relations, working and living conditions and evaluation of working of various labour enactments etc.
- It is a storehouse of important economic indicators like Consumer Price Index Numbers for Industrial, Agricultural and Rural Labourers; wage rate indices and data on industrial relations, socio-economic conditions in the organised and unorganised sector of industry etc.
- The functions/activities of Labour Bureau can be classified under three major heads:
1. Labour Intelligence
2. Labour Research
3. Monitoring and evaluation studies under the Minimum Wages Act 1948.

13. FCI laboratory Inaugurated:
- The Food Corporation of India (FCI) under Department of Food & Public Distribution (DFPD) developed its first State-of-art **Quality Control Laboratory** to conduct in house testing of food grain samples.
- The laboratory was set up under the guidance of "Central Food Technological Research Institute in Mysuru, Karnataka.
- Quality Control Laboratory will test food grain samples for chemical parameters.
- The laboratory was inaugurated at **Institute of Food Security** (IFS), FCI, Gurugram (Haryana) on November 21, 2021.

Food Corporation of India (FCI):
- The Food Corporation of India (FCI) is a statutory corporation created and run by the Government of India.
- It is under the jurisdiction of Ministry of Consumer Affairs, Food and Public Distribution, Government of India formed by the enactment of Food Corporation Act, 1964 by the Parliament of India.

Organizational Set-Up of FCI:

- FCI coordinates its functions through a country-wide network of offices with Headquarters at New Delhi with five Zonal Offices, twenty-five Regional Offices and 170 District Offices under its control.

Organizational Set-Up of FCI
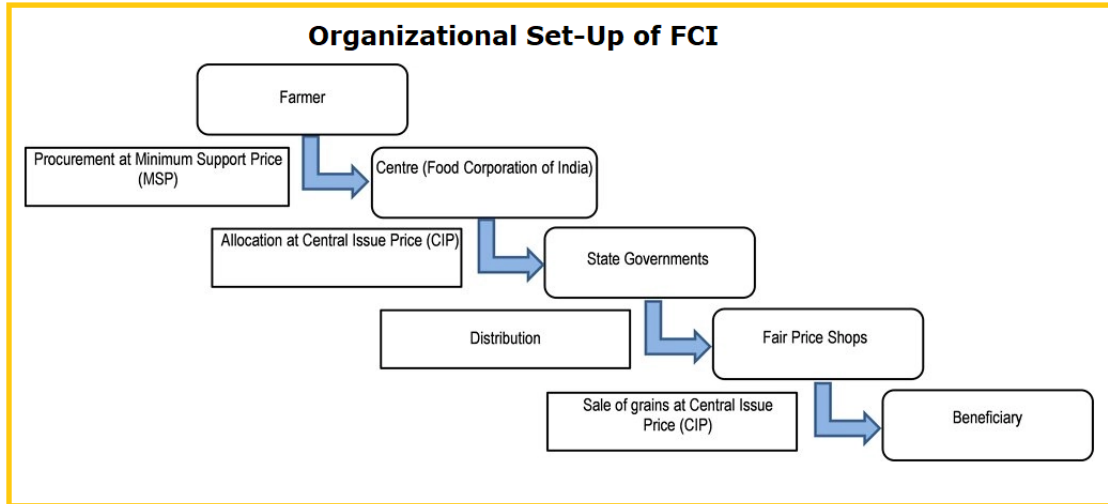
14. Swachh Survekshan -2021 Awards:
- **Swachh Survekshan** is an annual survey of cleanliness, hygiene and sanitation in cities and towns across India.
- It was launched as part of the **Swachh Bharat Abhiyan**, which aimed to make India clean and free of open defecation.
- The first survey was undertaken in 2016 and covered 73 cities. By 2020 the survey had grown to cover 4242 cities and was said to be the largest cleanliness survey in the world.
- In 2021 Survekshan, participated by 4,320 cities, also saw an unprecedented number of citizens' feedback – over 5 crores, compared to 1.87 cores last year.
- The Nodal Ministry is **Ministry of Housing and Urban Affairs** (MoHUA).
- **Less than 1 lakh Population:** Vita, Lonavala, and Saswad cities from Maharashtra have ranked first, second, and third Cleanest Cities respectively.
- **More than 1 Lakh Population:** For the 5th consecutive year, Indore (Madhya Pradesh) was awarded the title of India's Cleanest City under Swachh Survekshan, while Surat and Vijayawada bagged the second and third spots respectively.
- Hoshangabad in Madhya Pradesh emerged as the 'Fastest Mover City' thus securing a place among the top 100 cities at 87th position.

Categories:
- **Best Ganga Town:** Varanasi.
- **Cleanest Cantonment:** Ahmedabad Cantonment, followed by Meerut Cantonment and Delhi Cantonment.
- **More than 100 Urban Local Bodies:**
1. Chhattisgarh has been awarded as the 'Cleanest State' of India for the 3rd consecutive year.
2. Karnataka emerged as the 'Fastest Mover State'.

Less than 100 Urban Local Bodies:
1. Jharkhand won the 'Cleanest State' of India for the second time in this category.
2. Mizoram emerged as the 'Fastest Mover State'.

Prerak Daaur Samman:
1. This is a new performance category introduced under SS 2021, five cities – Indore, Surat, Navi Mumbai, New Delhi Municipal Council and Tirupati were categorized as 'Divya' (Platinum).

Swachh Bharat Mission-Urban 2.0:
- SBM-U 2.0, announced in Budget 2021-22, is the continuation of SBM-U first phase.
- The government is trying to tap safe containment, transportation, disposal of faecal sludge, and septage from toilets. It will be implemented over five years from 2021 to 2026 with an outlay of Rs. 1.41 lakh crore.

- 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.

Report on Trends in Prevalence of Tobacco use:
- World Health Organisation (WHO) published the 4th edition of **Global report on trends in prevalence of tobacco** use 2000-2025.
- As per the report, South-East Asia Region achieved the fastest rate of decline in use of tobacco. Average prevalence of smoking among men decreased to 25% in 2020, as against 50% in 2000.
- In South-East Region, tobacco smoking among women decreased from 8.9% in 2000 to 1.6% in the year 2020.
- India and Nepal are the countries, which is likely to achieve 30% relative reduction in tobacco use in order to meet Global NCD action target plan by 2025.
- WHO report highlights that, if tobacco control efforts continues with the current level, smoking rates in this region can reach as low as 11% in 2025. It will be the second lowest Regional average rate after Africa, that is 7.5% in 2025.
- The South-East Asia Region has highest rates of tobacco use, that is 29 percent of the population. It accounts for 432 million users.
- This region is also the home to 266 million smokeless tobacco users out of 355 million across the globe.

How this progress was achieved?
- This progress was the result of effective implementation of FCTC and MPOWER package of WHO as well as a set of six cost-effective & high impact measures in order to help countries in reducing the demand and supply of tobacco.
- Tobacco use is one among the key risk factors of non-communicable diseases and effective tobacco control is significant to prevent and control NCDs. It is a flagship priority of this region since 2014.

15. ASER 2021 Report:
- 16th **Annual Status of Education Report** (ASER) 2021 (Rural) was published by **Pratham foundation** on November 17, 2021.
- ASER provides report on schooling status of children in the age group of 5-16 age across rural India including the ability to do basic reading & arithmetic tasks.
- This year, ASER followed a phone-based survey format, as field survey was not possible due to covid-19 pandemic. The survey was conducted during September-October 2021.
- It tries to find out how children in aged between 5-16 studied at home since the onset of covid-19 pandemic as well as challenges that schools & households now face in the backdrop of opening up of schools.

Important findings of the ASER 2021 report are as follows:
- As per report, there was an overall increase in proportion of children enrolled in government schools in between 2018 and 2020.
- Enrolment increased from 64.3% to 65.8%. But in 2021, enrolment suddenly increased to 70.3%.
- Enrolment rate in private schools has decreased as compared to last year. In 2020, enrolment rate was 28.8% which decreased to 24.4% in 2021.
- In 2021, 73.1% school respondents received training to implement Covid-19 prevention measures.
- Even though availability of smartphones increased to 67.6% in 2021 as compared to 36.5% in 2018, around 79% of children in private schools had smartphone at home as opposed to 63.7% children in government school.
- Number of school-going children taking tuition increased by 40% during closure of their schools.
- 52% of the respondents cited financial distress caused by covid-19 pandemic as the reason of increase in enrolments in government school.

16. Purvanchal Expressway:
- Recently, the Prime Minister inaugurated the Purvanchal Expressway.

- It is a 340.8 km long, 6-lane wide, access-controlled expressway in Uttar Pradesh. The expressway is expandable to 8-lane. It is the longest expressway in India.
- It connects Chand Saray village in Lucknow district with Haydaria village in Ghazipur district on NH-31.
- The expressway was developed by "Uttar Pradesh Expressways Industrial Development Authority (UPEIDA)".
- It also comprises of a 3.2 km long airstrip at Akhalkiri Karwat village near in Sultanpur district for emergency landing of aircrafts.
- Its construction started by the UPEIDA on in October 2018 and was inaugurated on November 16, 2021.
- Prime Minister Narendra Modi arrived to inaugurate the expressway, in C-130 Hercules.
- Indian Air Force (IAF) fighter jets performed 'touch and go' operation, under which 30 fighter planes touched the expressway airstrip and then took off.
- This project was announced by Chief Minister Akhilesh Yadav in May 2015 as Lucknow-Azamgarh-Ballia Expressway. Later, Yogi Adityanath government changed the routes to Lucknow-Azamgarh-Ghazipur. Foundation stone of the expressway was laid July 14, 2018 by Prime Minister Modi. The total project value is Rs 22494 crore. It includes land acquisition co

17. Study on Antibiotic Consumption:
- The Global Research on Antimicrobial Resistance (GRAM) Project published a study in Lancet Planetary Health. As per study, global antibiotic consumption rates have increased by 46% in last two decades.
- GRAM used a novel approach, by deploying statistical modelling techniques.
- It incorporated several data sources and types like large-scale household surveys in low-income & middle-income countries, antibiotic consumption data from World Health Organisation (WHO) and pharmaceutical sales data.
- GRAM also gathered data from the European Centre for Disease Prevention and Control (ECDC).
- GRAM study provides a comparative analysis of "antibiotic consumption rates" globally. This rate is defined in WHO metric of "defined daily doses (DDD) per 1000 population per day".

Findings of the Study:
- Variation in total antibiotic consumption rates, across the country, ranges from 5 DDD to 45.9 DDD per 1000 population per day.
- In between 2000-2018, global antibiotic consumption rate increased by 46%, accounting for an increase from 9.8 to 14.3 DDD per 1000 population per day.
- In low-income & middle-income countries, anti-biotic consumption rate increased by 76%, accounting an increase from 7.4 to 13.1 DDD per 1000 per day.
- However, in high-income countries, consumption rates were stable.
- Antibiotic consumption rates in South Asia increased by 116%.
- Second largest increase (111%) was witnessed in North Africa and Middle East region.

What is antimicrobial resistance?
- **Antimicrobial Resistance** (AMR) occurs when **bacteria**, **viruses**, **fungi** and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- As a result, standard treatments become ineffective, infections persist and may spread to others.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as "superbugs".
- Antimicrobial resistance is now regarded as a major threat to public health across the globe.
- **Bacteria can also acquire resistance. This can happen in two ways:**
1. by sharing and transferring resistance genes present in the rest of the population or
2. by genetic mutations that help the bacteria survive antibiotic exposure.

AMR in India:
- AMR is of particular concern in developing nations, including India, where the burden of infectious disease is high and healthcare spending is low.
- India is among the nations with the highest burden of bacterial infections.
- Consequently, the impact of AMR is likely to be higher in the Indian setting.
- The National Health Policy 2017 highlights the problem of antimicrobial resistance and calls for effective action to address it.

- The Ministry of Health & Family Welfare (MoHFW) identified AMR as one of the top 10 priorities for the ministry's collaborative work with WHO.
- India's Red Line campaign demands that prescription-only antibiotics be marked with a red line, to discourage the over-the-counter sale of antibiotics.The Food Safety and Standards Authority of India (FSSAI) banned the use of antibiotics and several pharmacologically active substances in fisheries.

18. NBFID to Start Operations:
- The National Bank for Financing Infrastructure and Development (NBFID) is set to start its lending operations with 190-200 big infrastructure projects in roads, railways, and energy sector.
- Highlights
- This announcement was made by newly appointed Chairman of NBFID, K V Kamath.
- Central government had announced the appointment of K V Kamath as the chairperson of the newly set up NBFID.
- NBFID was set up with the aim of catalysing investment in fund-starved infrastructure sector in India.
- Under the National Infrastructure Pipeline (NIP), there are 193 projects above Rs 1,000 crore each.
- NIP with an ambition of USD 1.5 trillion covers key sectors like roads, metro, railways, and energy. It also includes some social projects like irrigation projects.
- NBFID was set up as a corporate body, with an authorised share capital of one lakh crore rupees. It was set up with **following objectives:**
2. To directly or indirectly lend, attract investment or invest for infrastructure projects that are located entirely or partly in India.
3. To facilitate the development of market for loans, bonds, and derivatives for infrastructure financing.
4. Functions of NBFID

Main functions of NBFID are:
1. To extend loans and advances for infrastructure projects.
2. To take over or refinance such existing loans.
3. To attract investment from private sector investors as well as institutional investors for infrastructure projects.
4. To organise and facilitate foreign participation in infrastructure projects.
5. To facilitate negotiations with several government authorities for dispute resolution with respect to infrastructure financing.
6. To provide consultancy services in infrastructure financing.

How NBFID raises Fund?
- **NBFID** raises money in the form of loans or otherwise in Indian rupees and foreign currencies. It also raises money by issuing or selling financial instruments like bonds and debentures.
- It can also borrow money from central government, Reserve Bank of India, mutual funds, scheduled commercial banks besides multilateral institutions like **Asian Development Bank** and **World Bank**.

19. Citizens' Tele Law Mobile App Launched:
- Union Law & Justice Minister, Kiren Rijiju and Minister of State for Law & Justice, SP Baghel launched "Citizens' Tele-Law smartphone app" on November 13, 2021.
- On the occasion, they also felicitated the frontline functionaries of Department of Justice's Tele-Law.
- Ministers honoured around 124 Frontline functionaries, including paralegal volunteers, panel lawyers, village level entrepreneurs, and state coordinators from India.

Citizens' Tele-Law smartphone App:
- The Citizens' Tele-Law mobile app was launched with the aim of broadening access to increased legal information. The app seeks to empower masses to identify their problem and select appropriate forum of dispute redress for claiming their entitlements. It will also help the citizens to identify their rights by connecting the beneficiary directly with the Panel Lawyer or assistance of Para Legal Volunteers and Village Level Entrepreneurs, in case the beneficiary cannot read or write.
- Through this app, free consultation will be provided for individuals qualifying for free legal aid under Section 12 of the Legal Service Authority. Others will require to pay Rs 30 as consultation fee each time.

Expansion of Tele-Law:

- Law Minister also announced the expansion of Tele-Law across 75,000 Gram Panchayats, as part of the celebration of 75 years of India's independence. He urged lawyers to join 'Tele-Law movement' to provide legal advice & consultation.
- Citizens' Tele-Law Mobile App is a first of its kind. With the help of this app, every citizen will have access to a lawyer on single click. App was launched in accordance with the constitutional obligation of providing an equal opportunity before law.
- Capabilities of the Mobile App will be provided in the form of 'e-tutorial' in all scheduled languages.

20. e-Amrit Portal:
- India launched an electric vehicle awareness web portal called "**e-Amrit Portal**" on November 10, 2021. This portal was launched at the ongoing COP26 Summit in Glasgow, UK.
- **e-AMRIT** portal stands for "Accelerated e-Mobility Revolution for India's Transportation". This web portal was developed by NITI Aayog in association with the UK government as part of India-UK Joint Roadmap 2030.
- The e-AMRIT portal was launched with the aim of creating awareness regarding electric mobility in India. It has been developed as a 'one-stop site' containing all the information regarding adoption of electric vehicles (EVs) in India.
- The web portal can be accessed using different devices like PCs, mobile phones, screen readers and tablets.
- The e-AMRIT portal **aims to** assist electric vehicle users or electric vehicle adopters to:
1. Switch to electric vehicles by offering insights on electric vehicle technologies, insurance options, types of electric vehicles and financing options.
2. Set up electric vehicle or associated enterprise by means of providing details on key initiatives of central and state governments.
3. Assess benefits of electric vehicles with designed tools for determining users' savings with electric vehicles as compared to petrol or diesel vehicles.
4. Get all information regarding Indian electric vehicle market and industry.

21. Ayushman Bharat-Digital Mission:
- The Union Health Ministry has launched digital registration of all medical facilities and all doctors under the Ayushman Bharat-Digital Mission in order to digitise health records.
- Under this initiative, government hospitals have been asked to procure Hospital Information Management System software.

Ayushman Bharat Digital Mission:
- Ayushman Bharat Digital Mission was launched by Prime Minister Narendra Modi on September 27, 2021.
- Under this mission, every Indian will be provided a unique health ID which will also work as a health account, with which personal health records can be linked.
- Mission will create interoperability within digital health ecosystem, on the lines of role played by the Unified Payments Interface in revolutionizing payments.
- Citizens would be able to access healthcare facilities by a single click.

Features of the Mission:
1. **Health ID:** Under this mission, health ID will be issued for every citizen, which will work as their health account. Their health account will contain details of test, disease, doctors visit, medicines taken and diagnosis. It will be provided free of cost and will be voluntary. This card will help in conducting analysis of health data and lead to better planning, budgeting and implementation.
2. **Healthcare Facilities & Professionals' Registry:** This programme will create Healthcare Professionals' Registry (HPR) and Healthcare Facilities Registry (HFR), in order to allow easy electronic access to health infrastructure and medical professionals.
3. **Ayushman Bharat Digital Mission Sandbox:** Under the mission, Sandbox mission will be created. It will act as a framework for technology and product testing
- This mission will be implemented by National Health Authority (NHA) under Ministry of Health & Family Welfare.

22. National Achievement Survey 2021:
- Recently, the Union Government has conducted the **National Achievement Survey** (NAS) across India, assessing about 38 lakh students from 1.23 lakh schools in 733 districts in 36 States and Union Territories.
- The survey was last conducted in 2017 and was scheduled to take place in 2020. However, due to the Covid situation, it was postponed until this year (2021).

Key Points:
1. It is a nationwide survey to assess the learning outcomes and health of the education system.
2. It is the largest, nationwide, sample-based education survey conducted across India.
3. It is undertaken by the Ministry of Education.
4. The Central Board of Secondary Education (CBSE) conducted NAS 2021.
5. The National Council of Educational Research and Training (NCERT) designed an assessment framework and tools for NAS-2021.
6. It provides a system-level reflection on the effectiveness of school education.
7. It collects information on relevant background variables such as school environment, teaching processes, and student home and background factors.
8. It covers the whole spectrum of schools including Government schools (both State and Central government), Government-aided schools, and Private schools across India.
- **Objective:** To provide structured feedback on student learning levels at District, State, and national levels. These inputs are used for policy planning and designing pedagogical interventions to improve quality and ensure equity in learning.

Medium and Grades:
- The NAS 2021 was conducted in 22 mediums of instruction that covered English, Assamese, Bengali, Gujarati, Kannada, Hindi, Malayalam, Marathi, Manipuri, Mizo, Punjabi, Odia, Telugu, Tamil, Bodo, Urdu, Garo, Konkani, Khasi, Bhutia, Nepali, and Lepcha.
- It was conducted in different subjects for different grades. The subject and grades wise break up is below:
1. **Grade 3 and 5:** Language, EVS, and Mathematics
2. **Grade 8:** Language, Science, Mathematics, and Social Science
3. **Grade 10:** Language, Science, Mathematics, Social Science, and English

Significance:
- It will help in assessing the learning interruptions and new learnings during the Covid-19 pandemic which will in turn help to take remedial measures.
- The findings of NAS 2021 will help in diagnosing a systematic understanding of the consequences that prolonged closure of schools has had on the learning of students in terms of their socio-emotional and cognitive development.
- It will help at resolving the learning gaps of students and devising education policies, learning, and teaching practices.
- Through its diagnostic report cards, NAS findings help in capacity building for teachers, officials involved in the delivery of education.

What are the Constitutional Provisions related to Education?
- **Part IV** of Indian Constitution, **Article 45** and **Article 39 (f)** of Directive Principles of State Policy (DPSP), has a provision for state-funded as well as equitable and accessible education.
- The 42nd Amendment to the Constitution in 1976 moved education from the State to the Concurrent List.
- The 86th Amendment in 2002 made education an enforceable right under Article 21-A.
- **Right to Education (RTE) Act, 2009** aims to provide primary education to all children aged 6 to 14 years and enforces education as a Fundamental Right.
- It also mandates 25% reservation for disadvantaged sections of the society.

23. Top Aspirational Districts in Education Sector:
- Recently, the NITI Aayog has announced the top five **Aspirational Districts** in education sector.
- It has ranked the most improved aspirational districts in the education sector for September month.
- As per NITI Aayog's delta rankings in education sector, Bhoopalpalli in Telangana has topped.
- Bhoopalpalli is followed by Chatra & Sahibganj in Jharkhand Nuapada in Odisha and Jaisalmer in Rajasthan.

- In the **Delta ranking 2021** for September month, Baramulla district in north Kashmir has secured 3rd rank among aspirational districts, in a significant development.
- Ranchi and Chatra districts in Jharkhand were ranked at 1st and 2nd position respectively.
- Wayanad in Kerala secured 4th and Shrawasti district in UP secured 5th spot.

What is Delta Ranking?
- The Delta Ranking is released by NITI Aayog. This shows the incremental progress in aspirational districts of the country in developmental areas such as health and nutrition, education, agriculture and water resources, financial inclusion, skill development and basic infrastructure.
- These rankings are a yardstick of incremental progress in developmental indices like health & nutrition, agriculture & financial inclusion and water resource.

Aspirational Districts Programme:
- **Aspirational Districts** are those districts in India, that are affected by **poor socio-economic indicators**.
- These are aspirational in the context, that improvement in these districts can lead to the overall improvement in human development in India.
- The 115 districts were identified from 28 states, at least one from each state.
- At the Government of India level, the programme is anchored by NITI Aayog. In addition, individual Ministries have assumed responsibility to drive the progress of districts.
- The objective of the program is to monitor the real-time progress of aspirational districts.
- ADP is based on 49 indicators from the 5 identified thematic areas, which focuses closely on improving people's Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development, and Basic Infrastructure.
- With States as the main drivers, ADP seeks to focus on the strength of each district, identify low-hanging fruits for immediate improvement, measure progress, and rank districts.

The broad contours of the programme are:
- **Convergence** (of Central & State Schemes) which brings together the horizontal and vertical tiers of the government.
- **Collaboration** (of Central, State level 'Prabhari' Officers & District Collectors) which enables impactful partnerships between government, market and civil society.
- **Competition** among districts driven by a spirit of the mass movement, it fosters accountability on district governments.
- The **Aspirational Districts Programme** (ADP) is one of the largest experiments on outcomes-focused governance in the world.

Impact of Aspirational Districts Programme:
- **Decentralization of Development:** ADP focuses on outcomes, that enables local experimentation based on a firm appreciation of ground realities.
- **Inclusive approach:**
1. The delta ranking of the Aspirational Districts combines the innovative use of data with pragmatic administration, keeping the district at the locus of inclusive development.
2. Through ADP government seeks to uplift those districts which have shown relatively lesser progress in achieving key social outcomes.
- **Improved Implementation:** Spurred by competition based on outcomes, local governments target their efforts and improve programme implementation and design.
- For **Example**, Health outcomes in ADP saw an increase in registering pregnant women into the health system, institutional delivery of babies and anti-diarrheal treatment, etc.

Socio-Economic Indicators:
- Socio-economic indicators provide a background to understanding the health scenario in a country. This section on Socio-economic indicators provides data on education, gender, poverty, housing, amenities, employment and other economic indicators. These indicators for the country as well as states will help in identifying the linkages between socio-economic indicators and achievement of health goals.

24. Incentives approved for Sugar Cane, Cotton, Jute Farmers:
- Recently, the Cabinet Committee on Economic Affairs (CCEA) has approved a slew of measures that will support farmers growing sugar cane, cotton and jute.

Key Points:
- The CCEA increased the price of ethanol extracted from sugar cane juice for blending in petrol. Ethanol blending with petrol is expected to reach 10% next year and 20% by 2025.
- The rate for ethanol extracted from C-heavy molasses has also been increased.
- Oil marketing companies buy ethanol from sugar mills and distilleries at the rate set by the Government.
- Implication of the hike:. The rate hike is expected to reduce pending arrears of the mills in payment to sugar cane farmers.
- The ethanol blending programme also reduced the dependence on crude oil imports.

Price support to CCI:
- The CCEA also approved a committed price support of Rs. 17,408.85 crore to the Cotton Corporation of India (CCI) as reimbursement for its losses in procuring crops from farmers at minimum support prices (MSP) over the past seven years.
- Function of CCI: The CCI is mandated to procure all Fair Average Quality grade cotton from farmers without any quantitative ceiling, as and when prices follow below the MSP rates set by the Centre, in a bid to protect farmers from distress sales.
- Over the last two seasons during the pandemic, the CCI procured a third of the country's cotton production, paying 40 lakh farmers more than Rs. 55,000 crore.

Reservation norms for Jute in packaging:
- The CCEA also approved reservation norms for the mandatory use of jute in packaging this year, stipulating that 100% of foodgrains and 20% of sugar must compulsorily be packed in jute bags.
- Such reservation consumed two-thirds of the total raw jute production last year.
- Support to farmers: As the Centre itself purchases jute sacking bags worth approximately Rs. 8,000 crore a year to pack grains, it also ensures a guaranteed market for the produce of 40 lakh jute farmers, mostly in eastern India, and supports 3.7 lakh jute mill workers, largely in West Bengal.

25. MPLAD Scheme re-stored:
- Recently, the Union Cabinet restored the **Members of Parliament Local Area Development Scheme** (MPLAD) scheme on November 10, 2021, citing economic recovery.
- This scheme was suspended in April 2020 and its funds were subsumed in the consolidated fund of India.
- Till further announcement, MPs will get Rs 2 crore annually, instead of approved Rs 5 crore.

MPLAD Scheme:
- The Members of Parliament Local Area Development Scheme (MPLADS) is an ongoing Central Sector Scheme which was launched in 1993-94.
- The Scheme enables the **Members of Parliament** to recommend works for creation of durable community assets based on locally felt needs to be taken up in their constituencies in the area of national priorities namely drinking water, education, public health, sanitation, roads etc.
- The **Ministry of Statistics and Programme Implementation** has been responsible for the policy formulation, release of funds and prescribing monitoring mechanism for implementation of the Scheme.

Features:
- The **MPLADS** is a Plan Scheme fully funded by Government of India. The annual MPLADS fund entitlement per MP constituency is Rs. 5 crore.
- MPs are to recommend every year, works costing at least 15 per cent of the MPLADS entitlement for the year for areas inhabited by Scheduled Caste population and 7.5 per cent for areas inhabited by S.T. population.
- In order to encourage trusts and societies for the betterment of tribal people, a ceiling of Rs. 75 lakh is stipulated for building assets by trusts and societies subject to conditions prescribed in the scheme guidelines.
- Lok Sabha Members can recommend works within their Constituencies and Elected Members of Rajya Sabha can recommend works within the State of Election (with select exceptions). Nominated Members of both the Rajya Sabha and Lok Sabha can recommend works anywhere in the country.
- All works to meet locally felt infrastructure and development needs, with an emphasis on creation of durable assets in the constituency are permissible under MPLADS as prescribed in the scheme guidelines. Expenditure on specified items of non durable nature are also permitted as listed in the guidelines.

26. **India's Rank in Global Drug Policy Index:**
- The inaugural Global Drug Policy Index was released by the **Harm Reduction Consortium**, on November 7, 2021.

Key Points:
- In this index, Norway, New Zealand, Portugal, the UK and Australia are the five leading countries with respect to humane and health-driven drug policies.
- Five lowest-ranked countries are Brazil, Uganda, Indonesia, Kenya, and Mexico.

India's rank:
- India has been ranked at 18th position out of 30 countries.
- India got an overall score of 46/100.
- On "use of extreme sentencing and responses" criteria, India scored 63/100.
- On health & harm reduction, it scored 49/100.
- On proportionality of criminal justice response, it got 38/100.
- On availability & access of internationally controlled substances for relief of pain & suffering, India scored 33 /100.

What is Global Drug Policy Index?
- The Global Drug Policy Index is a data-driven analysis of drug policies and their implementation across the world. The index comprises of 75 indicators and it run across five broad dimensions of drug policy namely- criminal justice, health & harm reduction, access to internationally controlled medicines, extreme responses, and development.
- This project was developed by 'Harm Reduction Consortium'.
- The Harm Reduction Consortium brings together seven of the leading international and regional harm reduction, drug policy and drug user networks: IDPC, Harm Reduction International (HRI), Youth RISE, the Women and Harm Reduction International Network (WHRIN), the Middle East and North Africa Harm Reduction Association (MENAHRA), the Eurasian Harm Reduction Association (EHRA), and the European Network of People who Use Drugs (EuroNPUD).

LEADS (Logistics Ease Across Different States) 2021 Index:
- The **Logistics Ease Across Different States** 2021 Index was recently published by Ministry of Commerce & Industry. This is the third edition of Index.
- In the index, Gujarat, Haryana and Punjab were emerged as best performing states with respect to mobility of goods and efficiency of logistics chain.
- This index provide ranking to states on the basis of logistics infrastructure.

Topper States:
- Gujarat, Haryana and Punjab are the best performing states (Top 3 slot respectively)
- Tamil Nadu (4th) and Maharashtra (5th) are among top-5 slot.
- Uttar Pradesh, Uttarakhand and Jharkhand have witnessed a significant improvement as compared to 2019 LEADS ranking. These states have emerged as the top improvers.

How States were ranked?
- For representation purposes, states were ranked in three separate classes:
1. North Eastern States
2. Himalayan UTs' and
3. 'Other UTs' group.
- Within Himalayan UTs, Jammu & Kashmir emerged as top ranker.
- In North Eastern States, Sikkim and Meghalaya emerged as topper.
- Delhi was ranked at top position among "other United Territories" category.

Logistic Ease Across Different States (LEADS):
- The Logistic Ease Across Different States (LEADS) index was launched in 2018. It was developed by the Commerce and Industry Ministry. The index ranks states in terms of logistical support to promote goods trade.
- Ranking is done on the basis of parameters like competitiveness of pricing, availability of infrastructure and services.
- It aims to encourage states for providing policy in order to improve their logistics-related infrastructure.

Methodology of the index:
- First edition of the report, LEADS 2018, focused on export-import trade. It assessed the efficiency of logistics ecosystem across state and UT. LEADS 2019 covered international as well as domestic trade. While, the third edition LEADS 2021 has analysed domestic and EXIM logistics ecosystem across the states.

27. HARBINGER-2021:
- Recently, the Reserve Bank of India (RBI) is set to organise its first global hackathon called 'HARBINGER 2021–Innovation for Transformation' focusing on digital payments.

Key Points:
- The global hackathon will be organised under theme of 'Smarter Digital Payments'.
- It will witness participants to identify and develop solutions which can be used:
- To make digital payments accessible to the under-served
- To enhance the ease of payments & user experience
- To strengthen the security of digital payments and
- to promote customer protection.
- The hackathon is inviting innovative ideas in payment & settlement system.
- Registration for the hackathon can be done till November 15, 2021.

What this hackathon is about?
- Through this hackathon, RBI seeks ideas on easy-to-use, innovative, non-mobile digital payment solutions to convert small-ticket cash transactions into digital mode to remove physical act of payment. It also seeks to develop alternate authentication mechanism for digital payments. Under the hackathon, RBI will also seek social media analysis monitoring tool to detect digital payment fraud and disruption.
- The participants of the hackathon will get an opportunity to be mentored by industry experts and exhibit their innovative solutions. Their solutions will be analysed by eminent jury. They will win prizes in each category. Winner will get Rs 40 lakh while runner-up will get Rs 20 lakh.

28. 18 lakh children in India severely Malnourished:
- According to Women and Child Ministry, there are more than 33 lakh malnourished children in India. This figure was reported from **Poshan tracker**, on which numbers are directly entered by anganwadis and are accessed by the Central government.
- The ministry further notes that, more than half of the children are in the severely malnourished category.
- Maharashtra, Bihar and Gujarat are topping the list.
- As per estimate, there are 17,76,902 severely acute malnourished (SAM) children and 15,46,420 moderately acute malnourished (MAM) children in India, as of October 14, 2021. These numbers were registered on **Poshan tracker app**, which was developed in 2020 as a governance tool for monitoring the nutritional outcomes in real-time.
- In between November 2020 and October 14, 2021, 91 per cent increase was seen in the number of Severely acute malnourished children. The number has increased from 9,27,606 to 17.76 lakh now.

SAM and MAM:
- As per World Health Organisation, SAM is defined as very low weight-for-height or the mid-upper arm circumference lesser than 115 mm, or presence of nutritional oedema while MAM is defined as moderate wasting or mid-upper-arm circumference (MUAC) greater than 115 mm but less than 125 mm.
- Children suffering from SAM have low weight for their height. They are nine times more likely to die due to diseases because of their weakened immune system. Children suffering from MAM are at increased risk of mortality and morbidity during childhood.

29. PM launches two RBI initiatives for Investors:
- Recently, the Prime Minister of India launched two customer-centric initiatives of the Reserve Bank of India (RBI) for investors on November 12, 2021.

Key Points:
- The two initiatives are- RBI Retail Direct Scheme and Reserve Bank – Integrated Ombudsman Scheme.
- With the launch of these schemes, India has opened up Government bond market for retails investors.

Significance of the scheme:
- RBI Retail Direct Scheme will act as a safe medium of investment for small investors in government securities.
- Both the innovative customer-centric initiatives will help in increasing investment avenues and thus make accessing capital market easier & safer.
- Under **RBI Retail direct Scheme**, retail investor will get access to the government securities market. It offers a new avenue for investing directly in securities issued by Centre and state governments. Investors will be able to open and maintain government securities account online easily & free of cost, with the RBI.
- RBI **Integrated Ombudsman Scheme** was launched to help in improving grievance redress mechanism to resolve customer complaints against regulated entities of RBI. It will do away with the jurisdictional limitations and limited grounds for complaints.
- This scheme is based on the principle of 'One Nation-One Ombudsman' comprising of "one portal, one email, and one address" for customers to file their complaints.

30. RBI's Revised PCA Framework:
- Recently, the Reserve Bank of India (RBI) modified its prompt corrective action (PCA) framework on November 3, 2021 to exclude the profitability parameter from its triggers list.
- In its 2017 framework, capital, asset quality & profitability were the key areas to monitor.
- In recent modification, round capital, asset quality & leverage will be key areas.
- RBI has also modified the level of shortfall in total capital adequacy ratio. It will push the lender to "risk threshold three" category. Lenders who breach this risk threshold, will be placed under stringent PCA restrictions.

Objective of PCA:
- The objective of the PCA Framework is to enable Supervisory intervention at appropriate time and require the Supervised Entity to initiate and implement remedial measures in a timely manner, so as to restore its financial health.

About PCA Framework:
- The PCA framework was introduced in **December 2002.** It acts as a tool for effective market discipline. These regulations were revised in April 2017, on the recommendations of working group of Financial Stability & Development Council.
- Under this framework, **RBI puts banks with weak financial metrics under watch.**
- It aims to check the **Non-Performing Assets (NPAs)** problems in banking sector of India. It helps in alerting regulator, investors and depositors in case bank heading for trouble.
- PCA framework is applicable only to commercial banks. Co-operative banks and non-banking financial companies (NBFCs) are not covered under it.

What is a Non-Performing Asset (NPA)?
- Any asset which stops giving returns to its investors for a specified period of time is known as Non-Performing Asset (NPA).
- When the borrower stops paying interest or principal on a loan, the lender will lose money. Such a loan is known as Non-Performing Asset (NPA). Indian Banking industry is seriously affected by Non-Performing Assets.
- Generally, that specified period of time is 90 days in most of the countries and across the various lending institutions. However, it is not a thumb rule and it may vary with the terms and conditions agreed upon by the financial institution and the borrower.

Geography
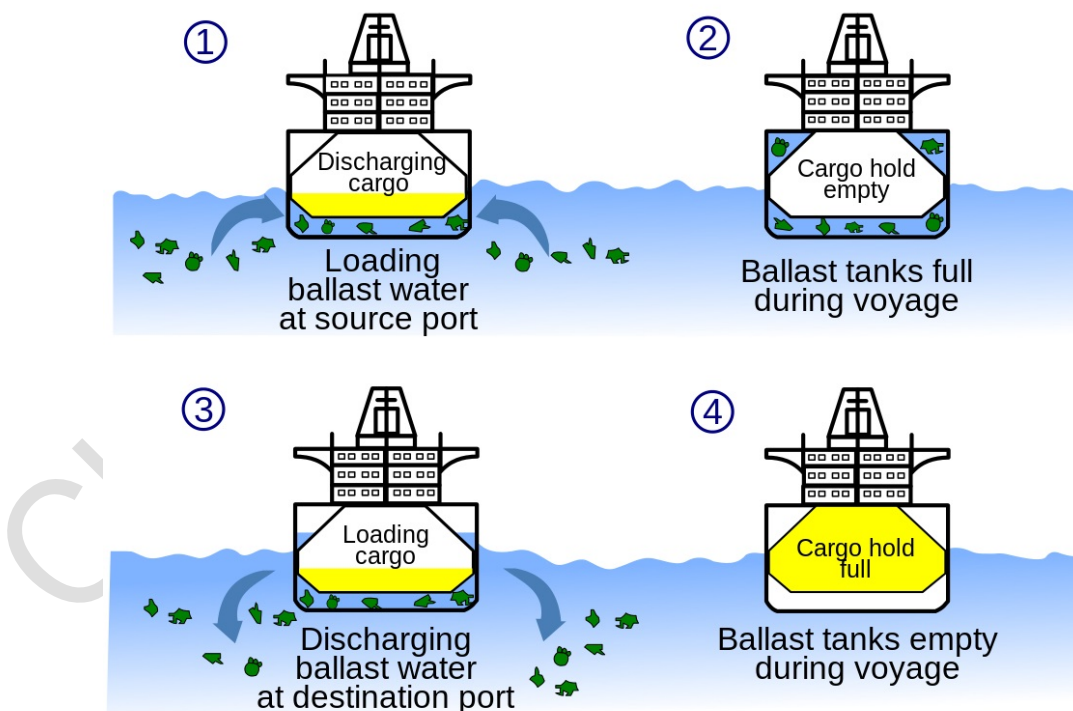
1. Cabinet approves continuation of O-SMART:
- Recently, the Cabinet Committee on Economic Affairs approved the continuation of the 'Ocean Services, Modelling, Application, Resources and Technology (**O-SMART**)' Scheme for the period of 2021-26.

- **O-SMART** is a government scheme that aims at promoting ocean research and setting up early warning weather systems, launched in August 2018.
- It also aims at addressing ocean development activities such as technology, services, resources, science, and observations as well as offering required technological assistance for implementing aspects of the Blue Economy.
- It comprises seven sub-schemes which are being implemented by autonomous institutes of the Ministry of Earth Sciences (MoES).
- **Sub-Schemes are:** Ocean Technology, Ocean Modelling and Advisory Services (OSMAS), Ocean Observation Network (OON), Ocean Non-Living Resources, Marine Living Resources and Ecology (MLRE), Coastal Research and Operation, Maintenance of Research Vessels.

Objectives:
- To generate and regularly update information on Marine Living Resources and their relationship with the physical environment in the **Indian Exclusive Economic Zone** (EEZ).
- To periodically monitor levels of seawater pollutants for health assessment of coastal waters of India, to develop shoreline change maps for assessment of coastal erosion due to natural and anthropogenic activities.
- To develop a wide range of state-of-the-art ocean observation systems for the acquisition of real-time data from the seas around India and to cater to the testing and sea trial activities of ocean technology.
- To generate and disseminate a suite of user-oriented ocean information, advisories, warnings, data and data products for the benefit of society.
- To develop high-resolution models for ocean forecast and reanalysis systems.
- To develop algorithms for validation of satellite data for coastal research and to monitor changes in the coastal research.
- To develop technologies to tap the marine bioresources, generate freshwater and ocean energy and develop underwater vehicles and technologies.

① Discharging cargo — Loading ballast water at source port
② Cargo hold empty — Ballast tanks full during voyage
③ Loading cargo — Discharging ballast water at destination port
④ Cargo hold full — Ballast tanks empty during voyage

- **Ballast Water Discharge**: **Ballast Water Discharge** by ships is responsible for the introduction of **invasive species** in the oceans by taking water from one port and discharging it during the next port call.

- **Polymetallic Nodules (MPN):** India aims to carry out exploration of **Polymetallic Nodules (MPN)** from water depth of 5500 m in a site of 75000 sq. km allotted to India by the United Nations in the Central Indian Ocean Basin, and to carry out investigations of gas hydrates.
- **MPN** is also called manganese nodules. They are rock concretions formed of concentric layers of iron and manganese hydroxides around a core.
- **MPN** contain multiple metals like copper, nickel, cobalt, manganese, iron, lead, zinc, aluminium, silver, gold and platinum etc. in variable constitutions and are precipitate of hot fluids from upwelling hot magma from the deep interior of the oceanic crust.
- Mining for Polymetallic nodules is of strategic importance for India as there are no terrestrial sources of these metals in India.
- Exploration of polymetallic sulphides near **Rodrigues Triple junction** (convergence of Central Indian Ridge, the Southeast Indian Ridge, and the Southwest Indian Ridge) in 10000 sq. km of area allotted to India in International waters by International Seabed Authority.
- Submission of India's claim over continental shelf extending beyond the EEZ supported by scientific data, and the Topographic survey of EEZ of India.

Blue economy:
- The 'Blue Economy' is an emerging concept which encourages better stewardship of our ocean or 'blue' resources. It underpins the thinking behind the Commonwealth Blue Charter, highlighting in particular the close linkages between the ocean, climate change, and the wellbeing of the people of the Commonwealth.
- According to the World Bank, the blue economy is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem."

2. Hubble Telescope Observes Prawn Nebula:
- Recently, the Hubble Telescope has observed "Prawn Nebula", which is a massive stellar nursery located around 6,000 light-years away in Scorpius constellation.
- Astronomers classify the Prawn Nebula as an emission nebula, meaning that its gas has been energized, or ionized, by the radiation of neighbouring stars.
- Radiation from these massive stars catches electrons from the hydrogen atoms of nebula.
- The Hubble Space telescope was launched in 1990 into low Earth orbit. It is named after astronomer Edwin Hubble.

About Prawn Nebula:
- Prawn Nebula is also called as IC 4628. It is an emission nebula located in Sagittarius Arm of the Milky Way. Its distance is around 6,000 light-years from Earth in Scorpius constellation. Nebula forms part of the tail of "False Comet" anchored by bright open cluster NGC 6231. This Nebula is also called as Gum 56, honouring Australian astronomer Colin Gum. Gum had published a catalogue of HII regions in 1955.

What is an emission nebula?
- Emission Nebula is formed of ionized gases which emit light of various wavelengths. Most common source of ionization is high-energy ultraviolet photons which are emitted from nearby hot stars.
- When the energized electrons go from higher-energy state to their lower-energy state by combining with hydrogen nuclei, they emit energy in the form of light, which in turn causes the nebula's gas to glow. In the recent Hubble image, presence of ionized iron emission was indicated in red.

3. Australia declares 'La Nina weather event begins:
- Recently, Australia's weather bureau said that a La Niña weather phenomenon had developed in the Pacific Ocean for the second year in a row that could bring above average rainfall across the country's centre, north and east.
- La Niña is typically associated with greater rainfall, more tropical cyclones, and cooler than average temperatures in the equatorial Pacific Ocean.
- Development of this phenomenon will bring above average rainfall across central, north and east Australia.
- This event could boost wheat yields in Australia.

- In September 2021, India had increased its wheat forecast for this season by 17 per cent to near record levels because of favourable weather.
- This year, climatic models suggest, La Nina pattern will be short-lived, and will be effective until late southern hemisphere summer or early autumn 2022.

What are El Niño and La Niña:

- **El Niño** and **La Niña** are two natural climate phenomena occurring across the tropical Pacific Ocean, influence the weather conditions all over the world.
- While the El Niño period is characterised by warming or increased sea surface temperatures in the central and eastern tropical Pacific Ocean, a La Niña event causes the water in the eastern Pacific Ocean to be colder than usual. Together, they are called ENSO or El Niño-Southern Oscillation.
- These oceanic and atmospheric phenomena typically develop between April and June and gain strength during October and February. Though these events prevail for 9-12 months, they can last for up to two years.
- Under normal conditions, **trade winds** or the **winds guiding the ocean currents** in the **Pacific Ocean** blow **west along the equator**. This causes warm water from **South America to move towards Asia**. Cold water rises from the depths of the ocean to replace the displaced warm water. However, two opposing climate patterns, **El Niño** and **La Niña**, break these normal conditions.
- **El Niño** (means a little boy in Spanish) weakens the trade winds and corresponds to the warmer phase. During this phenomenon, warmer currents are pushed back east, toward the west coast of the America. A large part along the equator experiences above-normal ocean temperature. The heat dissipating from the ocean rises into the atmosphere and causes warmer air temperatures in the Pacific, thereby leading to warmer global air temperatures.
- **La Niña** (means 'a girl' in Spanish) is responsible for an opposite climatic pattern. During this phase, a strong easterly current pushes the water towards the west, which cools the ocean surface. During La Nina period, sea surface temperature across eastern equatorial part of central Pacific Ocean becomes lower than normal by 3–5 °C.

How Does it impact India?

- **La Niña is responsible for bringing cold air from Siberia** and **South China** to the Indian subcontinent, which results in a north-south low-pressure system when it interacts with the tropical heating conditions here.
- The cold conditions associated with these troughs can envelope the southern parts of India as well and can extend till Tamil Nadu. **However, they do not affect Northeast India.**
- In the winter months, the La Nina causes a very cold wave-like jet stream to flow across Afghanistan, Iran and the Hindu Kush mountains. These strong and cold winds impact the degree of cold in India.
- Earlier, the weather phenomenon had led to the unexpected heavy rains in October. It had also caused a **delayed withdrawal of the southwest monsoon** from the country on October 25, which was the seventh-most delayed retreat since 1975.
- In January and February, temperatures in India are likely to touch 3 degrees Celsius in some northern areas before recovering, Bloomberg reported.
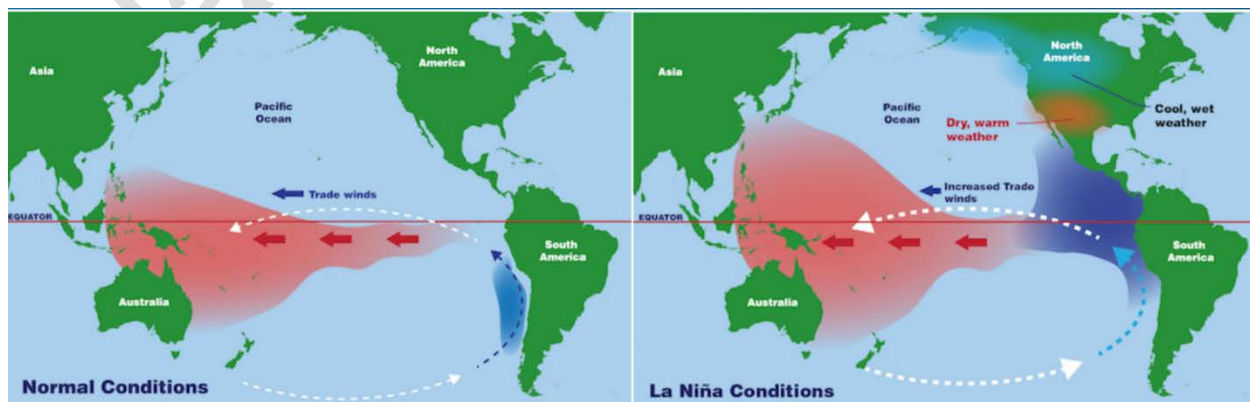
4. Longest Partial Lunar Eclipse of the Century:
- On November 19, 2021 in the morning, several countries witnessed the eclipse of the moon. It was the longest Partial lunar eclipse of the century.
- It was the second lunar eclipse of 2021 and was similar to the last one, that occurred on May 26.
- It was the longest lunar eclipse in 580 years - lasted for about 3 hours, 28 minutes and 23 seconds.
- Which continents observed the eclipse?
- The partial lunar eclipse was visible across Eastern Asia, Australia, North America, South America, and the Pacific Region. In India, a small part of Arunachal Pradesh and Assam will observe the partial eclipse. End part of the eclipse was visible from Bihar, Uttar Pradesh and Jharkhand.

The Umbra:
- Umbra is the innermost and darkest part of a shadow. Here, the light source is completely blocked by occluding body. An observer within the umbra observes a total eclipse. The umbra of a round body which occludes a round light source forms a right circular cone. Distance from the Moon to the apex of its umbra is equal to distance between the Moon and Earth that is 384,402 km. As the diameter of Earth is 3.7 times the Moon's diameter, its umbra extends correspondingly farther, that is around 1.4 million km.
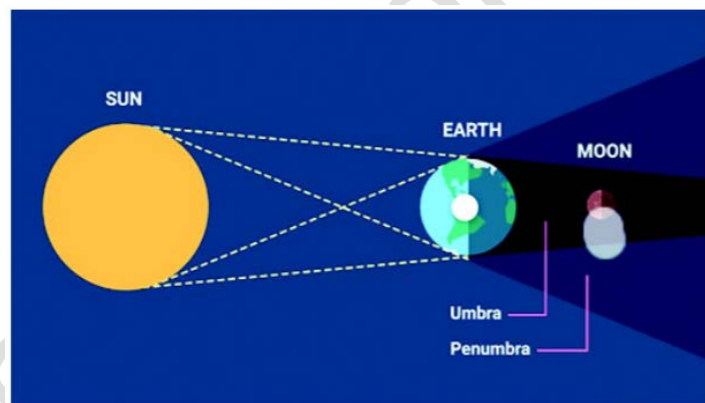
Frost Moon:
- The full moon, that will be observed on November 19, is also known as the frost moon or beaver moon. Full moons in November have been named so, because this is the time of first snowfall and frost, while beavers start building their traps or dams.

Lunar Eclipse:
- The Earth revolves around the Sun on an elliptical path and the moon also revolves on a similar path around the earth.
- When the sun, earth and the moon come in a straight line and the earth is between the sun and the moon, the shadow of the earth falls on the moon, the part of the moon that shines with sunlight loses its luster, without the rays of the sun. This is called Lunar eclipse.
- Whenever the lunar eclipse occurs, it happens only on the full moon day because on this day the earth comes between the sun and the moon.

5. 41ˢᵗ Scientific Expedition to Antarctica:
- Recently, India successfully launched the 41st Scientific Expedition to Antarctica.
- The first batch of Indian contingent arrived at the southern white continent.
- First batch comprises of 23 scientists and support staff. They reached the Indian Antarctic station Maitri recently.
- Four more batches will land in Antarctica by air using DROMLAN facility. They will land by mid-January 2021, onboard chartered ice-class vessel MV Vasiliy Golovnin.

41ˢᵗ expedition comprises of two major programs:
- The **first program** is "geological exploration of Amery ice shelf" at Bharati station. This programme will help in exploring the link between India and Antarctica in past.
- The **second program** is "reconnaissance surveys and preparatory work" to drill 500 meters of ice core near **Maitri**. This programme will help in improving the understanding of Antarctic climate, sea-ice, greenhouse gases from a single climate, and westerly winds.

- Apart from accomplishing scientific programs, 41st expedition will replenish annual supplies of fuel, food as well as provisions & spares for operation & maintenance of life support systems set up at Maitri & Bharti.
- The ice core drilling will be done in association with British Antarctic Survey and Norwegian Polar Institute.

The Indian Antarctic programs:
- Indian Antarctic programs started in 1981. It has completed 40 scientific expeditions. The programs helped in building three permanent research base stations in Antarctica:
1. Dakshin Gangotri in 1983
2. Maitri in 1988 and
3. Bharati in 2012.
- Base stations Maitri and Bharati are fully operational, as of now.
- The entire Indian Antarctic program is managed by "National Centre for Polar and Ocean Research (NCPOR), Goa". NCPOR is an autonomous institute working under Ministry of Earth Sciences.

6. Sela Tunnel:
- The Sela Tunnel is the longest bi-lane road tunnel situated near the Sino-Indian border in Arunachal Pradesh. The Sela tunnel is being constructed by the Border Roads Organisation at an altitude of 13,800ft near the Indo-China border.
- It is being built on the 317km long Balipara-Charduar-Tawang (BCT) road which connects West Kameng, East Kameng and Tawang districts of Arunachal Pradesh to the rest of the country.
- The Sela tunnel will provide all weather connectivity to Tawang. It will also ensure better movement of troops and weaponry to various locations along the Line of Actual Control (LAC) with China.

Sino-Indian border:
- India shares 3488 Km of border with China that runs along the States of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh. State-wise length of the border is as under:
- The border is not fully demarcated and the process of clarifying and confirming the Line of Actual Control is in progress. The area is characterized by high altitude terrain and thick habitation which have resulted in inadequate development of infrastructure in these regions.

		(Length in Km)
Sl. No.	State	Total Length
1.	Jammu & Kashmir	1597
2.	Himachal Pradesh	200
3.	Uttarakhand	345
4.	Sikkim	220
5.	Arunachal Pradesh	1126
	Total	3488

- The **Indo-Tibetan Border Police Force (ITBP)** is the **Border Guarding Force** at Sino-Indian Border.

7. 'Leonids Meteor Shower':
- The Leonids Meteor Shower occurs in the month of November. It turns into a storm every 33 years. This meteor shower is associated with the comet called Tempel-Tuttle.
- The Leonid meteor shower turns into a storm every 33 years. This is because the Tempel – Tuttle takes 33 years to orbit the sun. A meteor storm should have 1000 meteors per hour. The last Leonid storm occurred in 2002.
- The Leonids get their name from their constellation Leo, that is, Tempel-Tuttle originates from Leo. The Tempel-Tuttle takes 33 years to orbit the sun.
- The Leonids travel at faster speeds which is 71 km/hour. But their rates are low, which is, 15 meteors per hour.
- The Leonids are also called Earthgazer meteors or Fireballs. They are called earthgazers as they streak close to the horizon. They are called fireballs as their colours are bright.

The Concept of Meteor Shower:
- The meteor shower is the light produced due to the friction between the earth atmosphere and the meteorite. Comets are snowballs of frozen gases, dust and rocks orbiting the sun. The comet Tempel-Tuttle leaves meteoroids (small bodies moving in the solar system) in its path.

- These meteoroids are disturbed by planets (especially Jupiter) and also by the radiation pressure of the sun. When they encounter the earth's atmosphere heat is generated due to the friction. They burn in the heat releasing enormous amount of light and heat energy. This is seen as meteor shower from the earth.

Why does Leonids create storm once in 33 years?
- Assume that the comet Tempel -Tuttle is orbiting through points A, B and C in the solar system. Say it passed through point B in the year 1966. And it dropped some 1000 meteoroids in point B. These meteoroids are deflected by other planets and sun. Because of this, in 1988, there are only 300 meteoroids in point B. The earth is visiting point B in 1988. It will encounter very less meteor showers. Suppose, if the earth visited point B in 1966 itself, it would have encountered more meteoroids and thus a meteor storm would have occurred.

Defence and Security

1. INS Vela:
- Recently, the Indian Navy is set to commission **INS Vela**, on November 25, 2021, which is the fourth stealth Scorpene class submarine under Project 75.
- INS Vela has been built by Mumbai-based Mazagon Dock Shipbuilders Ltd in association with M/s Naval Group of France.
- Earlier version of INS Vela was commissioned on August 31, 1973, rendering its yeoman service to the nation for 37 eventful years. It was finally decommissioned on June 25, 2010.
- INS Vela is a potent man of war. It is capable of offensive operations which span across entire spectrum of maritime warfare.
- Induction of Vela consolidates position of Indian Navy as a builder's Navy significantly. It will add sharpness and strength to the combat capability of Indian Navy.
- Vela is named after a decommissioned submarine Vela, which served the Navy from 1973 to 2010. The earlier Vela belonged to Foxtrot class submarine of Soviet origin.
- Naval sources said the submarine can take up to eight officers and 35 men. The submarine is equipped with C303 anti torpedo countermeasure system, and can carry up to 18 torpedoes or Exocet anti-ship missiles or 30 mines in place of torpedoes.
- Vela will be commissioned into the Indian Navy's western command, and will be based in Mumbai.

What is Project 75?
- Conceptualised for the acquisition for 25 submarines at the time of the IK Gujral government, P75 evolved into a 30-year plan for building submarines.
- In 2005, India and France signed a $ 3.75 billion contract for building six Scorpene class submarines. The executing company on the Indian side is Mazgaon Docks Ltd, and on the French side, it is DCNS, which is now called Naval Group.
- The project has been dogged by delays and questions over the reluctance of the French government to act on the commitment for "transfer of technology" that was an integral part of the contract. As a result, the first of the six subs, INS Kalvari, was commissioned five years behind schedule, in 2017.
- After Kalvari, two more submarines under the contract, INS Khanderi and INS Karanj, were commissioned. Vela is the fourth, and sea trials are ongoing for Vagir, while the sixth, Vagsheer, is under construction.

2. Sagar Shakti Exercise:
- Recently, the Multi-agency Exercise 'Sagar Shakti' ends in Gujarat.
- It was a four-day mega military exercise which witnessed participation of the Indian Army, Indian Air Force, Indian Navy, Indian Coast Guard, Gujarat Police, Border Security Force, and the Marine Police.
- During the exercise, capability and readiness of India to confront any multidimensional security threat was elaborately tested in creek sector of the **Kutch peninsula**.

- During the exercise, agencies practiced 'comprehensive coordination incorporating contemporary technology for including response mechanism in real-time communication, multi-domain environment' as well as sharing of operational data in order to overcome emerging multi-dimensional threats.
- This exercise was held at the time when India has bolstered its maritime combat capability in light of evolving security scenarios in Indian Ocean Region.

Sir Creek:
- Sir Creek was originally called as Ban Ganga. It is a 96-km tidal estuary in uninhabited marshlands of Indus River Delta, at the border between India and Pakistan. The creek separates **Gujarat** state in India from Sindh province of **Pakistan**. It flows into the **Arabian Sea**.
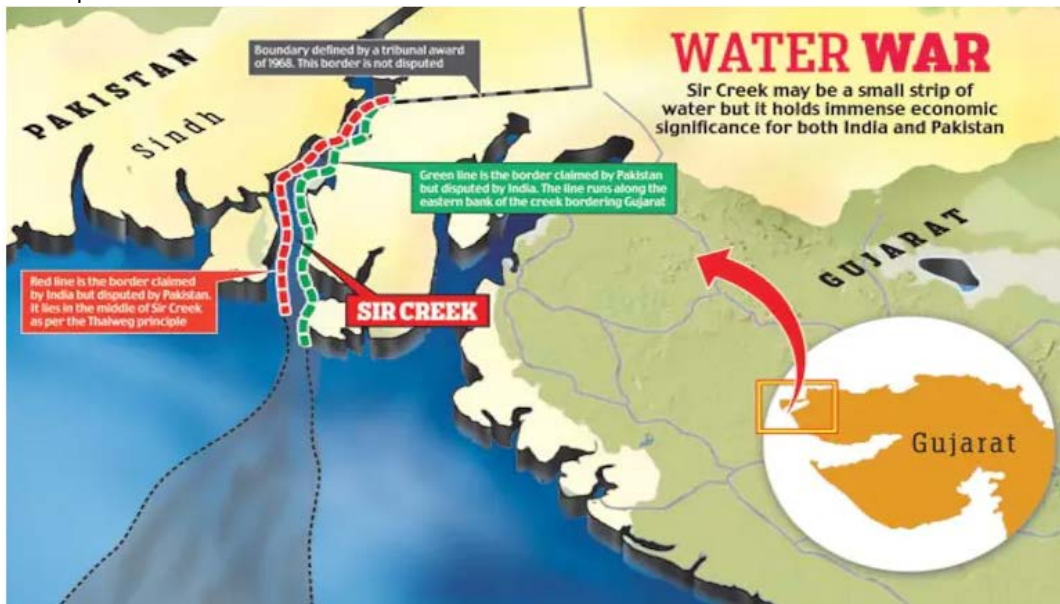
3. Indian Navy commissioned INS Visakhapatnam:
- Recently, Indian Navy formally commissioned INS Visakhapatnam at the Naval Dockyard in Mumbai.
- INS Visakhapatnam is one of the four stealth guided-missile destroyer ships under Project 15B.
- The ship can be regarded as one of the significant potent warships to have been constructed in India. It is propelled by four powerful Gas Turbines, in a Combined Gas and Gas (COGAG) configuration. The warship is capable of achieving speeds of 30 knots. It has been named after the historic coast called Visakhapatnam, in Andhra Pradesh.
- INS Visakhapatnam has enhanced stealth features which results into a reduced Radar Cross Section (RCS). It is achieved through efficient shaping of hull, plated masts, use of radar transparent materials on exposed decks and full beam superstructure design.

Project-15B:
- Four Guided missile Destroyers of Project 15B (P 15B) are under construction at M/s Mazagaon Dock Shipbuilders Limited, Mumbai. The contract for construction of these four ships was signed in 2011.
- These ships are amongst the most technologically advanced Guided Missile Destroyers of the world, with state-of-the-art weapon/sensor package, advanced stealth features and a high degree of automation.

4. AK-203 deal with Russia:
- Recently, the Defence Acquisition Council (DAC) has granted permission for mass production of AK-203 rifles, providing fire power to the standard weapon profile of armed forces. DAC has also approved an independent satellite for Indian Air Force (IAF).
- The contract was signed at over Rs 5,000 crore. It will lead to manufacturing of 6,014,427 AK-203s for a period of 10-years.

- In 2019, an Inter-governmental Agreement (IGA) was signed between India and Russia, under which first 70,000 rifles will include Russian components as technology transfers.

What is technology transfers?
- Technology transfer is the movement of data, designs, inventions, materials, software, technical knowledge or trade secrets from one organisation to another or from one purpose to another. The technology transfer process is guided by the policies, procedures and values of each organisation involved in the process.

Defence Acquisition Council:
- The Defence Acquisition Council is the highest decision-making body in the Defence Ministry for deciding on new policies and capital acquisitions for the three services (Army, Navy and Air Force) and the Indian Coast Guard.
- The Minister of Defence is the Chairman of the Council.
- It was formed, after the Group of Ministers recommendations on 'Reforming the National Security System', in 2001, post Kargil War (1999).

5. Exercise SHAKTI-2021:
- 6th edition of biennial Indo–France joint military exercise called "Ex SHAKTI- 2021" was concluded on November 26, 2021 in France.
- It focused on Counter Terrorism operations in backdrop of semi-urban terrain under United Nations Mandate with an aim to enhance military cooperation and inter-operability between the two Armies.
- The biennial exercise between the armies of the two countries had started in 2011.
- It is conducted alternately in India and France.
- The last edition of the Shakti exercise had taken place in Rajasthan in 2019, in which "Counter Terrorism operations in semi-desert terrain were practised".

Defence Exercises between India and France:
1. Varuna - Naval exercise
2. Desert Knight-21 and Garuda (Air exercise)
3. Shakti - Army exercise

Art and Culture

1. Srinagar joins the UNESCO Creative Cities Network:

- Recently, the United Nations Educational, Scientific and Cultural Organization or UNESCO designated Srinagar as a part of its 'Creative Cities Network (UCCN)'.
- Srinagar became the sixth Indian city to achieve this distinction, after Mumbai, Chennai, Hyderabad, Varanasi, and Jaipur.

What is UNESCO Creative Cities Network (UCCN)?

- The UNESCO Creative Cities Network (UCCN) was created in 2004. It aims at promoting cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development.
- UCCN covers 7 creative fields, which can be chosen by the cities according to their preference for a specific creative industry sector to which they devote their talent and energy.
- The member cities come from diverse regions, have different income levels and populations. The Network is first and foremost composed of cities ready to pool their resources, their experiences and knowledge for the common objectives laid out in the Network's Mission Statement. UNESCO Creative Cities are indeed key partners to UNESCO for the local implementation of the UN 2030 Agenda for Sustainable Development.

How to join UCCN?

- To become a member of UCCN, candidate cities must submit an application that demonstrates their willingness, commitment and capacity to contribute to the objectives of the Network.
- Joining the network is a longstanding commitment; it must involve a participative process and a forward-looking approach. Cities must present a realistic action plan including specific projects, initiatives or policies to be executed in the next four years to implement the objectives of the Network.

How many cities are there in the Network at present?

- Currently, there are 295 cities in the network work together towards a common objective: placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively at the international level.

What is UNESCO?

- UNESCO is the United Nations Educational, Scientific and Cultural Organization. It aims to build peace through international cooperation in Education, the Sciences and Culture. Its programmes contribute to the achievement of the Sustainable Development Goals defined in Agenda 2030, adopted by the UN General Assembly in 2015.
- **UNESCO celebrates its 75th anniversary on 12 November 2021.** UNESCO was born on 16 November 1945. At present, it has 195 Members and 8 Associate Members. It is governed by the General Conference and the Executive Board. The Secretariat, headed by the Director-General, implements the decisions of these two bodies. UNESCO's headquarters are located in Paris. Also, it has more than 50 field offices around the world.
- In its mission is to contribute to the building of a culture of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information, UNESCO has been working on a number of overarching objectives:
1. Attaining quality education for all and lifelong learning
2. Mobilizing science knowledge and policy for sustainable development
3. Addressing emerging social and ethical challenges
4. Fostering cultural diversity, intercultural dialogue and a culture of peace
5. Building inclusive knowledge societies through information and communication

2. Janjatiya Gaurav Divas:

- Recently, the Union Cabinet has approved 15th November as **Janjatiya Gaurav Divas** to ensure that the freedom fighters from various tribal communities who fought for India's Independence get their rightful recognition. Notably, November 15 is the birthday of Bhagwan Birsa Munda.
- The Janjatiya Gaurav Divas will be celebrated every year. It will also ensure that the heritage, culture and values of the 705 tribal communities (Scheduled Tribes) that constitute approximately 10% of our population is protected and is made accessible across the nation.

Background of Tribal Movement in India:

- The tribal groups were an important and integral part of Indian life. Before the annexation of India by the British, tribal groups had their own social and economic systems. These systems were traditional in nature and satisfied the needs of the tribals. Each community was headed by a chief who managed the affairs of the community.
- They also enjoyed independence regarding the management of their affairs. The land and forests were their main source of livelihood. The forests provided them with basic items which they required for survival. The tribal communities remained isolated from the non-tribals.
- The British policies proved harmful to the tribal society. British destroyed their relatively self-sufficient economy and communities. The tribal groups of different regions revolted against the British. Their movements were **anti-colonial in nature** because they were directed against the colonial administration.
- The tribals used traditional weapons, mainly bows and arrows and often turned violent. The Britishers dealt severely with them. They were declared criminals and anti-social. Their property was confiscated. They were imprisoned and many of them were hanged.
- The tribal movement in India remained confined to some regions only. But it did not lag behind other social groups as regards participation in the anti-colonial movements.

Major tribal revolts that took place against the British rule:
1. The Santhal Rebellion (1855-57)
2. Munda Rebellion (1899-1900)
3. Jaintia and Garo Rebellion Rebellion (1860-1870s)
4. The Uprising of the Bhils (1818-1831)
5. The Kol Uprising (1831-1832)
6. The Mappila Uprisings (1836-1854)

Birsa Munda:
- Birsa Munda was born on 15th November 1875. He belonged to the Munda tribe.
- He spearheaded an Indian tribal religious Millenarian movement during British rule in the late 19th century across the tribal belt of modern-day Jharkhand and Bihar.
- Birsa understood that the British colonial ruler and the missionaries had converted tribals to Christianity. Hence, he started the faith of 'Birsait'.
- The rebellion (ulgulan) of the Munda tribesmen led by Birsa Munda, occurred during 1899-1900.

3. Dhokra Art form:
- Recently, the Department of Design of IIT-Hyderabad held design workshop for **Dhokra Art** form with the aim of safeguarding 'Dhokra crafts of Ojha Gonds Community' in the state of Telangana.
- Dhokra is the **lost wax casting technique** on non-ferrous metal practice in India since eons by the tribal communities. This casting technique has two methods of casting: solid casting and hollow casting.
- Dhokra is an alloy of brass, nickel and zinc which gives an antique look.
- The oldest specimen using such technique was during Harappan Period (famous Dancing Girl of Mohenjo-daro).
- **Dhokra Tradition** is practised in the following states:
- Odisha, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, West Bengal, Nagaland (Konyak Naga Tribe).

Science and Technology

1. **NASA's Laser Communications Relay Demonstration (LCRD):**
   - Recently, NASA launched its new Laser Communications Relay Demonstration (LCRD) from Cape Canaveral Space Force Station in Florida.
   - LCRD is the first-ever laser communications system of NASA.
   - It will help NASA in test optical communication in space.
   - Presently, most of the NASA spacecraft use radio frequency communications to send data.
   - But the Optical communications will help in increasing the bandwidth by 10 to 100 times as compared to radio frequency systems.
   - LCRD will also demonstrate all of the advantages of using laser systems.
   - With this capability, laser communications can be implemented on more missions in a bid to standardise way to send and receive data.

Features of LCRD:
   - LCRD comprises of two optical terminals-One of the terminals is used to receive data from a user spacecraft, and the other terminal is used to transmit data to ground stations.
   - LCRD also has modems, which will translate digital data into laser signals.These signals will then be transmitted through encoded beams of light.These capabilities of LCRD make it NASA's first two-way, end-to-end optical relay.
   - LCRD payload is hosted onboard the **Space Test Programme Satellite** 6 (STPSat-6) of the US Department of Defense Space. It will be in a geosynchronous orbit, about 35,000 km above Earth.
   - Laser communications and radio waves make use of different wavelengths of light.
   - Laser system uses infrared light and is having a shorter wavelength as compared to radio waves. It will help in transmitting more data in a short time.
   - As per NASA's estimate, it would take around nine weeks to transmit a completed map of Mars back to Earth using the current radio frequency systems. While, with laser systems, it can be accelerated to around nine days.
   - **LCRD** will send data to Earth at 1.2 gigabits-per-second (Gbps), using infrared lasers. With this speed, one can download a movie in less than a minute.
   - Optical communications systems are having smaller size & weight. They require less power as compared to radio instruments.

2. **Gaofen-11 03 Satellite:**
   - Recently, China launched a new satellite called "**Gaofen-11 03**" from the Taiyuan Satellite Launch Centre.
   - The Satellite was launched by a Long March-4B rocket and it entered the planned orbit successfully.
   - Launch of the satellite marked 397th mission of Long March series carrier rockets.
   - This satellite is also called as Chang Zheng 4B, CZ-4B and LM-4B. It is an expendable orbital Launch vehicle of China.
   - **Gaofen** is a series of high-resolution Earth imaging satellite of China, which is used for state-sponsored program China High-resolution Earth Observation System (CHEOS).
   - First Gaofen series satellite, called Gaofen 1 was launched in 2013. Gaofen-11 03 is an Earth observation satellite, which is operated by CNSA. It was separated in the Sun-synchronous orbit, successfully

3. **Main-sequence Radio Pulse' emitters Discovered:**
   - Recently, Astronomers from National centre for Radio Astrophysics (NCRA,Pune) have discovered eight stars which belong to a rare class called Main-sequence Radio Pulse emitters or MRPs.
   - MRPs were discovered using '**Giant Metre-wave Radio Telescope (GMRT)'** located in Pune. This group of scientists discovered the rare class of radio stars which are hotter than the Sun. They have unusually strong magnetic fields and are much stronger stellar wind. As a result of this, these stars emit bright radio pulses like a lighthouse.
   - Team had also discovered three more similar stars in the past using Giant Metre-wave Radio Telescope (GMRT). Thus, there are 15 known MRPs so far. 11 MRPs were discovered with GMRT. Eight of MRPs were discovered in 2021 alone.
   - The first MRP was discovered in 2000. The was discovered as a result of high sensitivity of GMRT.

Giant Metrewave Radio Telescope (GMRT):

- GMRT is located near Pune, at **khodad**. It is an array of thirty fully steerable parabolic radio telescopes. It is having a diameter of 45 metre, observing at metre wavelengths. This telescope is operated by National Centre for Radio Astrophysics (NCRA), which is a part of Tata Institute of Fundamental Research, Mumbai. It was conceived and built during 1984 to 1996. GMRT was recently upgraded with new receivers, following which it is known as Upgraded Giant Metrewave Radio Telescope (uGMRT).
- NCRA is a research institution, working in the field of radio astronomy. It is located in Pune University Campus. NCRA has an active research program in several areas of Astronomy and Astrophysics like studies of the Sun, pulsars, Interplanetary scintillations, Active galaxies, Interstellar medium etc.

4. First LIGO project in India:
- Recently, Hingoli income division handed around 225 hectares of land right in Maharashtra to the authorities of Laser Interferometer Gravitational-Wave Observatory (LIGO) venture, to organise primary facility within the nation.
- There are currently few such labs in the United States, at Hanford in Washington and Livingston in Louisiana. These labs examine the gravitational waves.
- This venture will provide alternatives to scientists and engineers for digging deeper into concept of gravitational waves.

What is LIGO Project:
- The Laser Interferometer Gravitational-Wave Observatory (LIGO) is a massive observatory to detect cosmic gravitational waves and to carry experiments. Its main objective is to make use of gravitational-wave observations in astronomical studies. This project currently operates three gravitational-wave (GW) detectors. Out of three, two are at Hanford in Washington while one is at Livingston in Louisiana.
- LIGO - India is a planned advanced gravitational-wave observatory to be located in India as part of the worldwide network, whose concept proposal is now under active consideration in India and the USA. LIGO-India is envisaged as a collaborative project between a consortium of Indian research institutions and the LIGO Laboratory in USA, along with its international partners.

What are Gravitational Waves?
- Gravitational waves are 'ripples' in space-time caused by some of the most violent and energetic processes in the Universe.
- Albert Einstein predicted the existence of gravitational waves in 1916 in his **general theory of relativity**. Einstein's mathematics showed that massive accelerating objects (such as neutron stars or black holes orbiting each other) would disrupt space-time in such a way that 'waves' of undulating space-time would propagate in all directions away from the source. These cosmic ripples would travel at the speed of light, carrying with them information about their origins, as well as clues to the nature of gravity itself.

5. Russia's Direct-Ascent Anti-Satellite (DA-ASAT) Test:
- Recently, Russia conducted a direct-ascent anti-satellite (DA-ASAT) test, destroying a defunct Soviet electronic intelligence satellite.
- The system, Kosmos-1408, was launched in 1982 and located in low Earth orbit (LEO) of approximately 650–680 kilometres. The resulting interception created over 1,500 pieces of trackable orbital debris.
- According to a NASA press release, the International Space Station (ISS) Flight Control team was notified of a potentially dangerous satellite breakup and directed the ISS staff to undertake emergency procedures.

Direct Ascent Anti-Satellite Missile Test by Russia:
- Russia's First ever direct ascent anti-satellite missile called PL-19 Nudol, was test-fired on November 18, 2015. Russia tested the Nudol for the second time, in May 2016. Nudol was launched from "Plesetsk cosmodrome test launch facility" which is located 805 kilometres north of Moscow. In 2016, Russia conducted three more launches. Russia conducted a direct ascent anti-satellite missile test in 2020, which was capable of taking-out spacecraft or satellites in low Earth orbit. Its most recent test was in November 2021, that destroyed Kosmos 1408.

Anti-satellite weapons (ASAT):

- ASAT are space weapons, that have been designed to incapacitate or destroy satellites for strategic or tactical purposes. No ASAT system has yet been used in warfare. But, countries like India, US, Russia and China have successfully shot down their own satellites to demonstrate capabilities of their ASAT.

Mission Shakti:

- On March 27, 2019 India conducted Mission Shakti, an anti-satellite missile test, from the Dr. A P J Abdul Kalam Island launch complex. This was a technological mission carried out by DRDO. The satellite used in the mission was one of India's existing satellites operating in lower orbit. The test was fully successful and achieved all parameters and it required an extremely high degree of precision and technical capability.

6. White-Tailed deer & SARS-CoV-2:

- A new study from US shows that white-tailed deer are being infected with SARS-CoV-2, the virus causing COVID-19 in humans.
- During the study, Antibodies were found in 40% of deer. They were tested in between January to March 2021 across Michigan, Illinois, Pennsylvania, and New York state.
- A similar unpublished study also detected virus in 80% of deer in Iowa in between November 2020 to January 2021.
- Considering the high level of infections, researchers concluded that, deer are actively transmitting the virus to one another.
- Researchers also identified different SARS-CoV-2 variants, which suggests that there have been several human-to-deer infections.
- Large numbers of white-tailed deer in North America got infected with the virus because they often live close to people, providing opportunities to the virus to transmit between both the species.

White-tailed deer:

- The white-tailed deer is scientifically called as Odocoileus virginianus. It is also called as whitetail or Virginia deer. The deer is a medium-sized and is native to North America, Ecuador, Central America, Peru, South America, and Bolivia.
- It has also been introduced to New Zealand, Cuba, Puerto Rico, Jamaica and Hispaniola as well as some countries in Europe like Finland, Czech Republic, Romania, France, Germany, and Serbia.

What is an Antibody?

- Antibodies, also referred to as immunoglobulins, are glycoproteins naturally produced in response to invading foreign particles (antigens) such as microorganisms and viruses. As such, they play a critical role in the immune system's defense against infection and disease.
- Immunity is broadly defined as the capacity of the body to recognize materials as foreign to itself and to neutralize, eliminate or metabolize them with or without injury to its own tissues.

Defence Mechanisms in the Body:

- There are four defence mechanisms in our body:
1. Immunity to defend the body from infections.
2. Metabolic defence to metabolize and detoxify foreign chemicals.
3. Stoppage of bleeding (Haeostasis) to prevent to blood loss.
4. Resistance to stress mainly through release of hormone.
- Immunological defence is the most important defence mechanism. It provides protection against various infective agents e.g. virus, bacteria, fungi and parasites and also against the development of a tumour.
- Immunobiology is the study of organization and functioning of immune system. Immune system provides 'immunity' (protection against diseases).

7. Rice Blast Disease:

- Recently, a fungal infection affecting paddy has been detected in Kerala.
- The Rice blast is caused by a fungus named **Magnaporthe grisea** or Magnaporthe oryzae. The disease-affected crops have eye-like pale coloured dots surrounded with greyish outlines on its surface.
- Rice blast can affect most of the rice plant with the exception of the roots. The fungus can infect plants at any growth stage.
- The "Manuvarna rice" variety has been impacted by the infection.

- Manuvarna rice is a brand-new rice selection, that Kerala Agricultural College has launched across more than 250 acres in Wayanad district.
- Magnaporthe grisea also infect other cereals like rye, wheat, barley, and pearl millet. The disease caused by the fungus is called blast disease or blight disease.

8. Norovirus:
- Recently, cases of Norovirus were confirmed in Wayanad district of Kerala.
- Norovirus is a bug similar to the diarrhoea-inducing **rotavirus**.
- Norovirus is an animal-borne disease. It is transmitted through contaminated water and food.
- Norovirus are a group of viruses, causing gastrointestinal illness. Virus causes inflammation in lining of the stomach & intestines, severe vomiting and diarrhoea. The virus does not significantly affect healthy people. However, it can **seriously affect elderly, young children, and people with other comorbidities**.
- The virus spreads very easily and quickly. It spread from infected people to others when direct contacts occur, as well as through contaminated foods & surfaces.
- It also spread through **excrement** and **vomit** of an infected individual. It can be spread for up to two days, after the onset of this disease. Such outbreaks occur often between November to April.
- Common symptoms of Norovirus include abdominal pain, diarrhoea, fever, vomiting, headache, nausea, and body aches.

9. First Chinese Woman to Walk in Space:
- Recently, Astronaut Wang Yaping, a crewmember of China's Shenzhou-13 mission, became the first woman from the country to walk in space, outside the Tiangong space station.
- **Tiangong** means "heavenly palace"- is the latest achievement of China, after landing a rover on Mars and sending probes to the Moon. Its core module entered orbit earlier this year, with the space station expected to be operational by 2022.

What Is the International Space Station?
- The International Space Station is a large spacecraft. It orbits around Earth. It is a home where astronauts live. The space station is also a science lab. Many countries worked together to build it. They also work together to use it. The space station is made of many pieces. The pieces were put together in space by astronauts. The space station's orbit is approximately 250 miles above Earth. NASA uses the station to learn about living and working in space. These lessons will help NASA explore space.
- The first piece of the International Space Station was launched in 1998. A Russian rocket launched that piece. After that, more pieces were added.
- The space station is as big inside as a house with several bedrooms. It has bathrooms, a gymnasium and a big bay window.
- Airlocks on the space station are like doors. Astronauts use them to go outside on spacewalks.

Why Is the Space Station Important?
- It is a home in orbit. People have lived in space every day since the year 2000. The space station's labs are where crew members do research. This research could not be done on Earth.
- Scientists study what happens to people when they live in space. NASA has learned how to keep a spacecraft working for a long time. These lessons will be important in the future.

10. India's first privately built Cryogenic rocket engine:
- Recently, **Skyroot Aerospace** (a Hyderabad-based space technology startup)test-fired India's first privately built cryogenic rocket engine called Dhawan-1.
- The cryogenic rocket engine is 100 per cent 3D printed and 100 percent made in India.
- It has been named after Satish Dhawan, who was the third chairman of ISRO. He pioneered the development of advanced launch capabilities of India.
- The company will use the engine as the upper stage of its Vikram-2 launch vehicle.
- **Vikram Rocket** has been named after pioneering Vikram Sarabhai, who kickstarted the ambitious space program in India. He also conducted advanced nuclear research.

- The rocket uses a combination of **Liquid Natural Gas**, which is more than 90 per cent methane. Liquid Natural Gas is used in combination with Liquid Oxygen. In Combined form, it is called as "**Methalox**", which form **a cryogenic rocket fuel**.
- The combination provides for high performance and is having low cost. The fuel is environmentally friendly. Thus, leading this fuel is dubbed as "Fuel of the future" by the Skyroot Aerospace engineers.
- **Dhawan-1** engine uses environment friendly combinations called LNG and LOX. It is entirely 3D printed. Engine has been named in honour of Satish Dhawan.
- Pixxel 1 satellite will be launched in 2022. It will be the first private satellite in an Earth Observation constellation in low Earth orbit.

Cryogenic Rocket:
- A cryogenic rocket engine is a rocket engine that uses a cryogenic fuel or oxidizer, that is, its fuel or oxidizer (or both) are gases liquefied and stored at very low temperature.
- A Cryogenic rocket stage is more efficient and provides more thrust for every kilogram of propellant it burns compared to solid and earth-storable liquid propellant rocket stages. Specific impulse achievable with cryogenic propellants (liquid Hydrogen and liquid Oxygen) is much higher compared to earth storable liquid and solid propellants, giving it a substantial payload advantage.
- Oxygen liquefies at -183 deg C and Hydrogen at -253 deg C also entails complex ground support systems like propellant storage and filling systems, cryo engine and stage test facilities, transportation and handling of cryo fluids and related safety aspects.

Specific Impulse:
- The gauge for rating the efficiency of rocket propellants is specific impulse, stated in seconds.
- Specific impulse indicates how many pounds (or kilograms) of thrust are obtained by the consumption of one pound (or kilogram) of propellant in one second.
- Specific impulse is characteristic of the type of propellant, however, its exact value will vary to some extent with the operating conditions and design of the rocket engine.

11. Starlink Satellite Internet Services:
- Recently, the Union Indian Government cautioned people not to subscribe to Starlink Internet Services, which is led by Elon Musk-led SpaceX's satellite broadband arm Starlink.
- The government said that the Starlink Internet Services is not licensed to offer satellite-based internet services in India, and cautioned the public not to subscribe to the services that are being advertised by the Elon Musk-backed company.
- Department has also directed Starlink to refrain from booking or rendering the satellite internet services "with immediate effect".
- Starlink internet service provider is planning to explore collaboration with telecom companies in India in order to expand its broadband services here. It has planned to primarily focus on rural areas. However, offering satellite-based services in India needs requisite licence from Central government.

What is a Satellite Broadband Service?
- Broadband essentially means a wide bandwidth, high-capacity data transmission technique, using a broad range of frequencies. In the case of a satellite broadband service, broadband services are delivered directly via satellites instead of optical fibre or mobile networks.

How is it different from existing broadband services?
- In case of the satellite broadband services, the aggregation of all the data generated and transmitted by users accessing the internet happens in the sky or space, that is in the satellite.
- In case of the cellular networks, aggregation happens on the ground, in the base stations. This is the case for any other terrestrial means of providing broadband - be it optical fibre, cable, etc.
- To access satellite services, we will need a dish antenna just like we do in the case of TV services, so a normal mobile handset cannot directly access satellite broadband. For a user to access satellite broadband a clear line of sight to the satellite is needed.

What advantages does it offer?
- The main advantage of satellite services is that you can provide high-speed internet services in remote areas, where terrestrial networks cannot be set up, for instance in the middle of the ocean, in rugged unreachable terrain such as the Himalayas - even as remote as on top of Mount Everest.

- In a country with a wide range of geographies such as India, this is especially pertinent, given that 20-25 per cent of the Indian population resides in areas where it is extremely hard for terrestrial operators to set up shop.

Who is offering it and when will it be available in India?

- Currently, **VSAT (Very Small Aperture Terminal)** operators offer satellite broadband services at a very limited capacity in India in a few remote locations. The utilisation of satellite services for broadband services is restricted to minimal applications — such as disaster management, defence, scientific locations, etc. Key hurdles are high latency of these services, which means that real-time transmission is hard.
- With the launch of ISRO's high throughput **GEO** (Geostationary Equitorial Orbit) satellites a few years ago, which can beam high-speed internet, up to 300 gigabytes per second. That apart, many global players look to provide satellite broadband services in India by deploying low earth orbit (LEO) satellites.
- They are launching a constellation of satellites very close to the earth's surface in order to reduce the latency of satellite broadband.

**Has it been rolled out in other parts of the world?**

- It is early days. Starlink and OneWeb are still launching satellites that will be a part of their LEO constellation.
- Telesat will start creating its constellation in 2023 and be operational worldwide by 2024. However, as of this year, Starlink is operational in 14 countries, with 1 lakh terminals shipped to North America and Europe.

Concerns:

- As satellite systems develop, questions are being raised around who exactly should govern an Internet in international space.
- While improved global access to information and communication is certainly positive, concerns around managing content regulation, hate speech and illegal or harmful materials are coming to the fore.
- Understanding who is best placed to govern these systems is complicated because low-Earth orbit (LEO) satellites might make use of ground-based infrastructure in different countries and customers can be anywhere around the world. This leaves uncertainty over which country's laws apply where and which regulatory bodies can – or should have a mandate to – enforce them.

12. Russian Docking Module Arrives at ISS:

- A new Russian docking module arrived safely at the **International Space Station** on Nov. 26. Docking specifically refers to **joining of two separate** free-flying space vehicles.
- The new spherical module is named Prichal (Pier) was docked with the orbiting outpost. It comprises of six docking ports.
- The module will allow potential future expansion of Russian segment of the space station.
- It has secured to the docking port of new Russian Nauka (Science) laboratory module.
- The Soyuz rocket took off on November 24, from the Russian launch facility in Baikonur, Kazakhstan. It carried the **Progress cargo ship** with Prichal attached to it. After entering space, cargo ship went into orbit with the module.

- Progress cargo ship is also delivering 700 kilos of several cargoes to the space station. The ship is expected to undock from ISS on December 22.
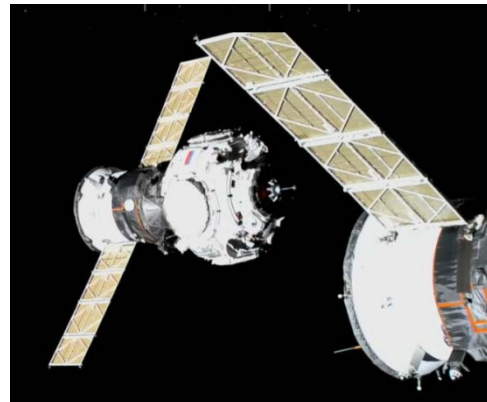
First Soyuz spacecraft:

- The first Soyuz spacecraft is expected to dock on March 18, 2022, at the new module, with a crew of three cosmonauts.
- Soyuz is a series of spacecraft which has been in service since the 1960s, having made more than 140 flights. It was designed for the Soviet space program.

- Currently, the space outpost is operated by NASA astronauts namely, Kayla Barron, Thomas Marshburn, Raja Chari, & Mark Vande Hei as well as Russian cosmonauts Anton Shkaplerov & Pyotr Dubrov and Matthias Maurer from European Space Agency.

About Prichal nodal module:
- Prichal nodal module is a Russian spacecraft and a part of International Space Station. The module was approved in 2011 and was finally launched on November 24, 2021 onboard "Progress M-UM". Its operations will start in 2022.

Environment and Ecology

1. Cherry Blossom Festival:
- Shillong's famous Cherry Blossom Festival 2021 was held from November 25 to 27, 2021 in Meghalaya.
- The **International Cherry Blossom Festival** is a three-day Festival hosted in Shillong, Meghalaya annually in mid-November. The festival includes live music and other activities like pageants, dance competitions, several stalls representing their region through the cuisine, arts & craft and wine.
- Cherry Blossom is a flower of many trees of genus Prunus or Prunus Cerasus.
- These flowers are also known as **Japanese cherry** and **Sakura**. They usually refer to ornamental cherry trees. However, it should not to be confused with **cherry trees** producing fruit for eating.
- Cherry is the national flower of Japan. South Korea and Paris are also famous for their cherry blossom season. These flowers are also found in Himalayas as well as cover the east & west Khasi hills.

Cherry Blossom in India:
- Cherry blossom is also an attraction in India, most notably in Himalayan states of Uttarakhand, Himachal Pradesh, Sikkim, Jammu & Kashmir, Sikkim, Jalpaiguri & Darjeeling in west Bengal and Tropical highlands of Garo Hills & Khasi Hills.
- In Himachal Pradesh and Uttarakhand, the flower is considered sacred among Hindus and is associated with Vishnu & Shiva.
- During Maha Shivaratri, its leaves are used to make a wreath and are hung at the prayer altar.

2. Kuno National Park:
- The **Kuno National Park** in **Madhya Pradesh** is set to get 13 cheetahs in 2022.
- The Kuno National Park was originally developed as the second home for Asiatic lions in India, apart from Gir National Park. However, that project did not take off.
- But now the park is expecting to get 13 African cheetahs, which is being described as the largest intercontinental animal translocation in the world.
- Of all, 13 cheetahs have been carefully selected. 10 are from South Africa while 3 are from Namibia.
- Significance of the project
- The project is crucial in India. It would mean the introduction of fastest animal on Earth into the wild, after 69 years of last surviving cheetah was recorded to have been hunted down in 1952 in Chhattisgarh.
- There are challenges too in the project, as fence which is being created would prevent the entry of the African Cheetahs.

Background:
- The Supreme Court's expert committee had selected **Kuno National Park** as the habitat for African cheetah in January 2021. The expert committee was constituted by the court for implementing the Cheetah Translocation Project.
- Kuno was preferred over Nauradehi Wildlife Sanctuary in Madhya Pradesh and Mukundara Hills Tiger Reserve in Rajasthan

IUCN Status of Cheetah:

- African Cheetah are listed as "Vulnerable" by the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species, but after a recent study revealed significant population declines, scientists are calling for cheetahs to be up-listed to "**Endangered**."
- Asiatic Cheetah is **Critically Endangered**.
- Asiatic Cheetah is smaller and paler than the African cheetah. Has more fur, a smaller head and a longer neck. Usually have red eyes and they have a more cat-like appearance.

3. Ganga Expressway Project:
- Recently, the State-level environmental impact assessment committee in Uttar Pradesh (UP) has given Environmental Clearance (EC) for construction of ambitious **Ganga Expressway project** of UP government.
- According to a 2006 notification of Union Ministry of Environment, environment clearance for these projects covered under the schedule was mandatory.
- **Uttar Pradesh Expressways Industrial Development Authority** obtained the EC for Ganga Expressway Project was based on the 2006 notification.

Ganga Expressway Project:
- The Ganga Expressway Project is a **greenfield** six-lane expressway project.
- It is being built at an estimated cost of Rs 36,230 crore.
- The expressway connects Meerut in west UP to Prayagraj in east UP.
- It will be around 594 km long and 6-lane wide, which can further be expanded to eight lanes.
- Districts through which expressway will pass
- Ganga expressway will pass through 12 districts in Uttar Pradesh. These districts are: Meerut-Hapur-Bulandshahar-Amroha-Sambhal-Badaun-Shahjahanpur-Hardoi-Unnao-Raebareli-Pratapgarh-Prayagraj, from west to east in that order.
- Uttar Pradesh government received the sanction letter for Rs 5100 crore loan for this project from Punjab National Bank (PNB).

What is Impact Assessment?
- Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.
- UNEP defines Environmental Impact Assessment (EIA) as a tool used to identify the environmental, social and economic impacts of a project prior to decision-making.
- EIA aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.
- By using EIA both environmental and economic benefits can be achieved, such as reduced cost and time of project implementation and design, avoided treatment/clean-up costs and impacts of laws and regulations.
- **The fundamental components of an EIA would necessarily involve the following stages:**
a) **Screening** to determine which projects or developments require a full or partial impact assessment study;
b) **Scoping** to identify which potential impacts are relevant to assess (based on legislative requirements, international conventions, expert knowledge and public involvement), to identify alternative solutions that avoid, mitigate or compensate adverse impacts on biodiversity (including the option of not proceeding with the development, finding alternative designs or sites which avoid the impacts, incorporating safeguards in the design of the project, or providing compensation for adverse impacts), and finally to derive terms of reference for the impact assessment;
c) **Assessment** and evaluation of impacts and development of alternatives, to predict and identify the likely environmental impacts of a proposed project or development, including the detailed elaboration of alternatives;
d) **Reporting** the Environmental Impact Statement (EIS) or EIA report, including an environmental management plan (EMP), and a non-technical summary for the general audience.
e) **Review** of the Environmental Impact Statement (EIS), based on the terms of reference (scoping) and public (including authority) participation.
f) **Decision-making** on whether to approve the project or not, and under what conditions; and

g) **Monitoring**, compliance, enforcement and environmental auditing. Monitor whether the predicted impacts and proposed mitigation measures occur as defined in the EMP. Verify the compliance of proponent with the EMP, to ensure that unpredicted impacts or failed mitigation measures are identified and addressed in a timely fashion.

4. Best Marine District Award:
- On the occasion of World Fisheries Day on November 21, 2021, Balasore district in Odisha received India's "Best Marine District" award.
- The award ceremony was organised by ministry of fisheries, animal husbandry & dairying.
- Award was handed over by Union minister for fisheries, animal husbandry & dairying, Parshottam Rupala to director of fisheries of Odisha government, Smruti Ranjan Pradhan.
- Fisheries sector in Odisha
- In India, Odisha is the fourth largest fish producing state. During 2020-21, it produced 8.73 lakh metric tonnes of fish, contributing around 2.33 per cent to the state economy. In Odisha, fisheries sector has grown at an average annual rate of 13 percent in last five years.

India's fisheries sector:
- Presently India is the **second largest fish producing** and second largest **aquaculture** nation in the world after China.
- The total fish production during 2017-18 (provisional) is registered at 12.61 million metric tonnes (MMT) with a contribution of 8.92 MMT from inland sector and 3.69 MMT from marine sector.

5. Cryptocarya Muthuvariana:
- Recently, a group of scientists has identified a new plant species from the forest area of Idamalakkudy colony in Idukki, where Muthuvar tribal community resides.
- Scientists including from University of Kerala and Jawaharlal Nehru Tropical Botanical Garden & Research Institute (TBGRI), identified the plant.
- New species of the plant has been named as '**Cryptocaria Muthuvariana'**, named after the **Muthuvar** tribal community.
- For the first time, any plant species has been named after a local tribal community in the state.
- Muthuvar Traibal community plays a significant role in conserving the forest.

Muthuvar Tribal Community:
- Muthuvan people were loyal subjects of Madurai dynasty. When this dynasty was deposed, surviving royal members migrated to Travancore in Kerala.
- They carried idols of Madurai Meenakshi, deity of the royal family while migrating. 'Muthuvar word' is used to denote same community in Tamil Nadu.
- Muthuvan people are ancient tribes of this land. This community is independent and reluctant to interact with others. They grow ragi, lemon grass and cardamom.

6. Amazon Deforestation:
- Recently, a report by Brazil's space research agency (Inpe) found that deforestation in Brazil's Amazon rainforest increased by 22% in a year.
- Brazil was among a number of nations who promised to end and reverse deforestation by 2030 during the COP26 climate summit.
- The Amazon is home to about three million species of plants and animals, and one million indigenous people.
- It is a vital carbon store that slows down the pace of global warming.
- According to the latest data, some 13,235 sq km (5110 sq miles) was lost during the 2020-21 period, the highest amount since 2006.

Amazon Rainforest:
- These are the world's largest tropical rainforest occupying the drainage basin of the Amazon River and its tributaries in northern South America.

- Tropical forests are closed-canopy forests growing within 28 degrees north or south of the equator. They are very wet places, receiving more than 200 cm rainfall per year, either seasonally or throughout the year. Temperatures are uniformly high - between 20°C and 35°C.
- Such forests are found in Asia, Australia, Africa, South America, Central America, Mexico and on many of the Pacific Islands.
- The **Amazon** is a vast biome that spans eight rapidly developing countries—Brazil, Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana, and Suriname—and French Guiana, an overseas territory of France.
- The Amazon rainforests cover about 80% of the Amazon basin and they are home to nearly a fifth of the world's land species and is also home to about 30 million people including hundreds of indigenous groups and several isolated tribes.
- The Amazon basin is huge with an area covering over 6 million square kilometres, it is nearly twice the size of India.
- The basin produces about 20% of the world's flow of freshwater into the oceans.
- Comprising about 40% of Brazil's total area, Amazon Rainforests is bounded by the Guiana Highlands to the north, the Andes Mountains to the west, the Brazilian central plateau to the south, and the Atlantic Ocean to the east.

Causes of Deforestation:
1. Cattle Ranching
2. Small-Scale Agriculture
3. Fires
4. Industrial Agriculture Operations:
5. Mining operations

7. Clean Ocean Manifesto:
- Clean Ocean International Expert Group of UN Decade for Ocean Science for Sustainable Development, is going to present its short list of activities & goals as well as "Clean Ocean Manifesto" on November 19, 2021.
- The group has set up two aims, in order to help United Nations in attaining the goal of clean ocean:
- Reducing marine debris by 50-90 per cent and globe circling & high-tech system of monitors.

- The expert group also underline that, this process should aim to define and attract financial support in order to meet the initial set of goals for 2025. It should then be followed by goals of 2030.

Objectives for 2030:
- Enlarge understanding of pathways for spread & fate of pollutants,
- Reduce and remove top-priority forms of pollution up to 90 per cent and
- To prevent recurrence, reduce sources or emission of pollutants.
- Three-day online conference
- The three-day online conference will also highlight around 30 activities in place or in development across the world, which can make significant contributions by 2030 to clean ocean. These include initiatives of:
1. Successfully and consistently monitoring marine debris from space
2. Operating deep sea observatories in Atlantic
3. Observing vast Southern Ocean to provide early warnings of possible

8. Egypt to host COP27 Climate Summit:
- During COP26 conference in Glasgow, it was decided that Egypt will host **COP27** United Nations Climate Change Conference in 2022.
- Egypt will host the conference in Red Sea resort of Sharm El-Sheikh.
- This decision was taken after Egypt's President Abdel Fattah al-Sisi showed in September Egypt's interest in hosting COP27 on behalf of the African continent.
- Apart from that, the United Arab Emirates (UAE) was selected to host **COP28** international climate conference in the year 2023.

Conference of the Parties (COP):
- COP is the apex decision-making authority of **UNFCCC**. It meets every year.
- The first COP meeting was held in March 1995 in Berlin, Germany. COP meets in Bonn, seat if the secretariat.
- The office of the COP President rotates among five United Nations regional groups namely, Asia, Africa, Central & Eastern Europe, Latin America & the Caribbean, and Western Europe & Others. President of COP is usually the environment minister of home country, who is elected by acclamation after opening of COP session.

United Nations Framework Convention on Climate Change:
- The UNFCCC entered into force on 21 March 1994. Today, it has near-universal membership. The 197 countries that have ratified the Convention are called Parties to the Convention.
- Preventing "dangerous" human interference with the climate system is the ultimate aim of the UNFCCC.

9. Sharks and Seahorses found in Thames River:
- During a recent health check of London's famous River Thames, it was found that, it is now home to seahorses, seals, eels, and sharks.
- The survey was conducted by Zoological Society of London (ZSL).
- This news is significant, because, River Thames was declared **'biologically dead'** in 1957.
- The survey showed that, 346-kilometre-long river has three kinds of sharks namely, starry smooth-hound, the tope, and spurdog.
- 115 species of fish and wildlife were also found.
- River Thames is also known alternatively as River Isis in some parts. It is a river flowing through southern England including London. It is the longest river entirely in England. It is also the second-longest river in the United Kingdom, after River Severn.

Greater Thames Shark Project:
- The Greater Thames Shark Project was launched by Zoological Society of London (ZSL) in 2020 for collecting data on endangered shark species, living in outer estuary.

Tope sharks:
- Tope shark is also called as school shark, snapper shark and soupfin shark. It is a hound shark belonging to the family Triakidae.
- It is the only member of genus Galeorhinus. It is found across the world in temperate seas at depths of 800 m.,the shark can grow to nearly 2 m long and live for over 50 years.

- The IUCN classified it as 'critically endangered' in its Red List of Threatened Species.

Spurdog:
- Spurdogs are also known as Squalus. It is a genus of dogfish sharks belonging to the family Squalidae. They are characterized by smooth dorsal fin spines, caudal peduncle with lateral kneels and teeth in upper & lower jaws similar in size.

10. Climate Change Performance Index- India's Rank:
- German-watch in collaboration with Climate Action Network (CAN) and New Climate Institute, published the "Climate Change Performance Index 2022" on November 10.
- Highlights
- Report was released on the side-lines of COP26 to the United Nations Framework Convention on Climate Change (UNFCCC).
- CCPI 2022 finds that, major emitting economies which announced their Net Zero emission release targets poorly in climate change performance over 2021.

India's Rank:
- In the index, India maintained its 10th rank.
- India continued to be among top-performing countries within G20.

World Scenario:
- As per report, while United States has been ranked at 55th position among 66 countries with very low rating, despite USA is improving since it re-entered global climate negotiation process after President Joe Biden came to power.
- China has moved down four places as compared to 2020 ranking. It is ranked at 37th
- European Union is ranked at 22nd position, six places down as compared to 2020 ranking. It has been given 'medium' rating.
- UK is occupying 7th slot.
- Denmark emerged as the topper in the list with 76.92 per cent score.
- Denmark is followed by Sweden and Norway.

What is Climate Change Performance Index (CCPI)?
- CCPI is an independent monitoring tool, playing a leading role in providing information on implementation phase of Paris Agreement. It has provided analysis of climate protection performance of countries since 2005. The index evaluates 60 countries and European Union, which generate about 90 percent of global greenhouse gas emissions. It analyses countries in four categories comprising of 14 indicators:
1. Greenhouse gas emissions (40 per cent of total score),
2. Renewable energy (20 per cent),
3. Energy use (20 per cent) and
4. Climate policy (20 per cent).

11. US joins International Solar Alliance:
- The United States of America (USA) became the 101st member country to join International Solar Alliance (ISA).
- USA joined ISA as member country to accelerate the global adoption of solar energy.
- This announcement was made at UNFCCC COP26 on November 10, 2021.
- Now, USA will catalyse global energy transition through solar-led approach.

International Solar Alliance (ISA) Framework:
- The ISA framework was first circulated in 2016 for the support of countries. It emphasises on delivering global relevance and local benefit through collaborations for all countries. Key interventions of ISA will focus on readiness and enabling activities, innovative financing instrument and risk mitigation in order to facilitate promotion and deployment of solar technologies.

International Solar Alliance (ISA):
- ISA is an alliance of 124 countries. It was initiated by India. Most of the member countries are sunshine countries, lying either partly or completely between Tropic of Cancer and Tropic of Capricorn. This alliance was launched with the objective of working for efficient consumption of solar energy and reduce

dependence on fossil fuels. It was first proposed by Prime Minister Narendra Modi in November 2015. It is a treaty-based inter-governmental organization. It is the largest grouping of states across the world.

- Countries that do not lie within the Tropics can also join ISA and enjoy all benefits as other members. However, they do not get voting rights.
- ISA is headquartered in **Gurugram**, India. Its foundation stone was laid by Narendra Modi, and French President Francois Hollande in 2016.

12. Russia's new Forest Plan:

- Russia has revealed its new **Forest Plan**, in an effort to deal with climate change. This plan highlights a changed mindset of Russia on climate change.
- **Sakhalin Island** in Russia, located north of Japan has become a testing ground for Russia's efforts to reconcile its prized fossil fuel industry with the requirement to do something about climate change.
- Around two-thirds of Sakhalin Island is forested.
- Russian authorities have set an ambitious goal to make the island, carbon neutral by 2025.
- New forest plan was unveiled as tree growth will absorb much of the planet-warming carbon dioxide that half-million residents of the Island & its businesses produce.

About Sakhalin Island:

- Sakhalin is the largest island in Russia. It is the northernmost island of Japanese archipelago. The island is administered as part of the Sakhalin Oblast. It is located in the Pacific Ocean in between Sea of Okhotsk and Sea of Japan.
- The island is located just off Khabarovsk Krai and north of Hokkaido in Japan. The island is home to around 500,000 residents, majority of which are Russians.

13. Toxic Foam in Yamuna River:

- Recently, devotees offered prayers as a part of their four-day Chhath Puja celebrations at the banks of foam-coated Yamuna near Kalindi Kunj.
- The visuals have worried environmentalists and led political war of words between Aam Aadmi Party (AAP) and other state governments.
- Between Wazirabad and Okhla, Yamuna runs for 22-kilometre. It is less than 2 per cent of its length of 1,370 kilometres between Yamunotri and Allahabad. But this stretch accounts for 80 per cent of the total pollution load in the river.

What is froth formation?

- Phenomenon of froth formation takes place on several lakes and streams. These Foam bubbles are produced on the decomposition of organic matter.
- The foam-producing molecules comprises of two ends. Its one end repels water while another attracts water. These molecules work to reduce the surface tension on the surface of water. Foam bubbles are lighter as compared to water. Thus, they float on the surface as a thin film and gets accumulated over time.
- **Major reason** behind froth formation is presence of phosphates and surfactants in untreated sewage generating from Delhi, Haryana and Uttar Pradesh. Phosphates and Surfactants components comprise of 1 percent of the froth, while 99 per cent is air and water.
- Sources of pollution that cause foam formation include-untreated sewage containing soap-detergent particles, organic matter from decomposing vegetation, industrial effluents and presence of filamentous bacteria. Pollution from paper and sugar industries in Uttar Pradesh travel through **Hindon canal** is also a major reason of pollution in the Yamuna.

14. World Economic Forum (WEP) Report:

- World Economic Forum (WEP) published its report titled "Mission 2070: A Green New Deal for a Net-Zero India" to provide a roadmap for India's energy transition.
- The report was published in the backdrop of India's target to achieve net zero emissions by 2070. This target was committed by Prime Minister Narendra Modi at COP26 global climate summit in Glasgow.
- At the summit, PM Modi also committed:
1. To bring non-fossil energy capacity of India to 500 GW by 2030,
2. To lower carbon intensity to 45 per cent by 2030
3. To reduce 1 billion tonnes of carbon emissions out of total projected emission by 2030.
4. To fulfil 50 per cent of energy requirement using renewable waste by 2030.

Key Findings of the report:
- Report highlights that, India's transition towards a green economy could contribute about $1 trillion in economic impact by 2030. It will create more than 50 million jobs.
- The economic impact would increase to $15 trillion by 2070.
- Report notes that, India's commitments are a critical foundation for achieving 1.5-degree Celsius global warming target.
- India is on the frontline of climate change. More of Indians are exposed to negative effects of climate change and extreme weather events as compared to other nationality.
- Five Pillars contributing towards emission in India
- Energy, industry, mobility, agriculture and infrastructure & cities are the five pillars in India, contributing over 90 per cent emissions. India will require to curb this emission, along with four cross-sectoral enablers including-
1. Accelerated approach to green technology innovation;
2. Integrated approach to carbon, capture, utilisation and storage
3. Overarching framework to catalyse green finance and
4. Plan for climate adaptation.

15. Census of Indus River Dolphin:
- The state of Punjab is set to start the Census of one of the world's most threatened cetaceans, Indus River dolphin.
- Indus River dolphin is scientifically called as Platanista gangetica minor.
- It is a freshwater dolphin, found in river Beas.
- Census will start in winter as part of a project by the Central government. However, Punjab's wildlife preservation wing will move a step ahead and it not only protect dolphins but also their natural habitat.
- Project will be implemented over five years.
- Under this project, emphasis will be laid on collecting data on spatial & temporal distribution pattern of species and population status by means of an established and approved methodology.
- In the IUCN red list, Indus River dolphin is classified as **Endangered** by the International Union for the Conservation of Nature (IUCN).
- Until recently, dolphins were believed to be endemic to Pakistan. However, a remnant but viable population of Indus dolphins was discovered in **Harike wildlife sanctuary of Punjab** as well as in lower Beas River in 2007.
- Since its discovery, Punjab's Department of Forests and Wildlife Preservation is conducting research in association with the WWF-India on the habitat use, current distribution and population of dolphins.
- In 2019, **Indus River dolphin** was declared as the State aquatic animal of **Punjab**.

16. India officially endorses Emission list:
- India officially endorsed a website made by Indian climate experts, listing the historical carbon dioxide emissions of developed countries.
- India endorsed the emission list ahead of commencement of the 26th United Nations Conference of Parties (COP) in Glasgow in Scotland.
- Emission list was created with the aim of highlighting the disparity between the emissions of developed and developing countries.

- Countries like the United States, Australia, Canada & countries in Western Europe are shown as having a net carbon debt on the other hand, developing countries like India & China are having net credit.
- Thus, the database highlights that, it is only fair that developed countries should commit to steeper targets for curbing emissions as compared to developing countries.

Where does India stand?
- India is the third largest emitter of carbon emissions on yearly basis. However, it is the sixth largest with respect to its historical emissions. When the size of its population is considered, it is among the lowest per capita emitters.
- This highlights India's demands for climate justice as focus of the negotiations and its reluctance to agree for a fixed time frame in a bid to reach net zero. India is the only important emitter that has not committed to a net zero target.

Climate Equity Monitor:
- The website is called as "Climate Equity Monitor".
- The website seeks to debunk the narrative provided by several developed countries, and global non-government organisations which focus on what developing countries must do.
- This scientific initiative focusses on equity and climate action from a data & evidence-based perspective, which in turn will encourage discussions on crucial issues. On the website, performance & policies of Non-Annex-I Parties (developing countries) will be also provided to compare.

17. Don't Choose Extinction-UNDP:
- Recently, the **United Nations Development Programme** (UNDP) released a creative video titled "Don't Choose Extinction" on Climate Change.
- In the video, UNDP highlights that, it is time to act and act now for the climate crisis. To drive home the urgency and get attention of world, it is time to do whatever it takes.
- The viral video shows a dinosaur, to pass a simple message to the world leaders & diplomats: "It's now or never. Don't choose extinction and save human species, before it's too late."
- The creative video underlines a key message that government backed **fossil fuel subsidies** needs to be cut for reducing greenhouse emissions and save the Earth.

How much world spend on fossil fuels?
- As per UNDP research, world spends around $423 billion annually to subsidize fossil fuels. This much amount can be diverted to cover a COVID-19 vaccination for every person across the world and is equal to three times the annual amount required to eradicate global extreme poverty.

18. Mission Ganga:
- On the first day of **Ganga Utsav** (the River Festival 2021), National Mission for Clean Ganga (NMCG) got registered in the Guinness Book of World Records.
- It was registered in the Guinness Book because record number of photos of handwritten notes were uploaded on Facebook in an hour.
- The Ganga Utsav event was organised to raise awareness on Ganga rejuvenation as well as to provide impetus to the reach of the event.
- 5th edition of Ganga Utsav virtually started with fun and festivities.

About Ganga Utsav:
- Ganga Utsav is celebrated by the **National Mission for Clean Ganga**, which is implemented by the National Ganga Council (NGC).
- It is a three-day festival, promoting engagement of the stakeholders.
- Ganga Utsav is celebrated with the objective of connecting different people to rejuvenate the river. It seeks to solve the sensitive ecological issues through conversations.
- The Ganga Utsav is celebrated across the banks of the river. For instance, in Prayagraj, it is celebrated at the confluence of River Ganga & River Yamuna. In Ujjain, it is celebrated on River Shipra.

National Mission for Clean Ganga (NMCG):
- It is a registered trust that runs the 'Namami Gange' mission, India's most ambitious endeavour to clean the Ganga River.

- NMCG is the implementation wing of National Ganga Council (set in 2016; which replaced the National Ganga River Basin Authority (NRGBA).
- It has a Rs. 20,000-crore, centrally-funded, non-lapsable corpus and consists of nearly 288 projects.

Namami Gange Programme:
- Namami Gange Programme is an Integrated Conservation Mission, approved as a 'Flagship Programme' by the Union Government in June 2014 to accomplish the twin objectives of effective abatement of pollution and conservation and rejuvenation of National River Ganga.
- It is being operated under the Department of Water Resources,River Development and Ganga Rejuvenation, Ministry of Jal Shakti.
- The program is being implemented by the National Mission for Clean Ganga (NMCG), and its state counterpart organizations i.e., State Program ManagementGroups (SPMGs).

The main pillars of the programme are:
1. Sewerage Treatment Infrastructure & Industrial Effluent Monitoring,
2. River-Front Development & River-Surface Cleaning,
3. Bio-Diversity & Afforestation,
4. Public Awareness

What are the Challenges?
- Most of the Ganga is polluted and it is due to five States on the river's main stem Uttarakhand, Uttar Pradesh, Jharkhand, Bihar and West Bengal.
- Approximately 12,000 million litres a day (MLD) of sewage is generated in the Ganga basin.
- Industrial pollution from tanneries in Kanpur, distilleries, paper and sugar mills in the Kosi, Ramganga and Kali river catchments is a major contributor.
- So far, the State governments only have concentrated on superficially cleaning the river by using trash skimmers and improving crematoria-infrastructure.
- A financial audit also suggested there was a lack of fund utilization.

19. Global Methane Pledge:
- The **Global Methane Pledge** was launched at the **UNFCCC COP26** held in Glasgow in November 2021. Around 90 countries have placed their pledges. The Global Methane Pledge was initiated by USA And European Union.
- Under the pledge, the countries have promised to reduce methane emissions by 30% by 2030 as compared to 2020 levels. The pledge will help to reduce the global heating by 0.2 degrees Celsius by 2040 as compared to 2020. Currently, the world is 1.2 degrees hotter as compared to the pre-industrial times.

Need for the Global Methane Pledge:
- The United Nations says that around 25% of the current global warming is caused by methane. Methane is the second most abundant greenhouse gas next to carbon dioxide. It accounts to half of the current day temperature increase as compared to the pre-industrial levels.
- Methane is a short-lived gas (12 years) in the atmosphere. However, methane absorbs more energy when it is in the atmosphere. It has global warming potential 80 times greater than carbon dioxide.
- The pledge will help to abide the targets of Paris Climate deal. Reduction of methane is believed to be the single most effective strategy to keep the temperature rise to 1.5 degrees Celsius as per the Paris Agreement.

Challenges:
- The United Nations and several other international organizations have come up with initiatives similar to that of Global Methane Pledge. Their actions are adequate. However, the problem lies in the implementation.
- The developed countries should come forward to support the developing countries by providing money and technology in order to facilitate the adaptations towards the changing environment.
- Under the Kyoto Protocol, hardly any amount of money or technologies were transferred.
- In 2009 and 2020 the USA allocated 100 billion USD as climate finance to the developing countries. The developed countries claim that the sum is already flowing. However, according to the developing countries the money that dresses up climate finance is actually the funds that are pre-existing or the money that is flowing for other purposes.

- Nationalistic interests are never kept aside when developed countries allocate such funds to the developing countries. These trends should be changed to break the obstacles in implementing the pledge.

About Methane:
- Methane (CH4) is a hydrocarbon that is a primary component of natural gas. It is consisting of one carbon atom and four hydrogen atoms.
- Methane is gas that is found in small quantities in Earth's atmosphere.
- Methane is a powerful greenhouse gas. It is flammable, and is used as a fuel worldwide.
- Methane is produced by the breakdown or decay of organic material and can be introduced into the atmosphere by either natural processes – such as the decay of plant material in wetlands, the seepage of gas from underground deposits or the digestion of food by cattle – or human activities–such as oil and gas production, rice farming or waste management.
- Methane is 84 times more potent than carbon and doesn't last as long in the atmosphere before it breaks down. This makes it a critical target for reducing global warming more quickly while simultaneously working to reduce other greenhouse gases.
- It is responsible for creating ground-level ozone, a dangerous air pollutant.

20. Kaiser-i-Hind is Arunachal's State Butterfly:
- Recently, the state Cabinet of Arunachal Pradesh headed by Chief Minister Pema Khandu approved the large, brightly coloured Kaiser-i-Hind as the State butterfly. for the first time, the cabinet meeting was held outside State capital Itanagar at an unusual location-Pakke Tiger Reserve.
- In the meeting, the Cabinet also adopted the Pakke Tiger Reserve 2047 declaration on climate change resilient and responsive Arunachal Pradesh aimed at lowering emissions and sustainable development.

About Kaiser-i-Hind:
- **Kaiser-i-Hind** (Teinopalpus imperialis) literally means Emperor of India. This butterfly with a 90120 mm wingspan is found in six States along the eastern Himalayas at elevations from 6,00010,000 feet in well-wooded terrain.
- This brightly coloured, elusive swallowtail butterfly carrying 'India' its name also flutters in **Nepal, Bhutan, Myanmar, Laos, Vietnam** and southern **China**.
- As per a butterfly expert, the species is confined to very few pockets of Arunachal Pradesh and could become extinct if not conserved. Hence, the State butterfly tag can help in the conservation of the butterfly species' habitat. The first dead specimen of Kaiser-i-Hind was recorded in Sikkim in 2012.
- It was captured live on camera by a few participants during a butterfly-watching meet in Arunachal Pradesh's **Talle Valley Wildlife Sanctuary** in 2014.

Why Butterflies Matter?
- Butterflies are great bio-indicators of the ecosystem as they are highly sensitive to environmental conditions such as sunlight, temperature, humidity and rainfall patterns.
- They are central pollinators to many crops.
- In an ecosystem, they act as a food source to predators like birds, spiders, lizards and other animals.
- A butterfly's beauty is like a flower and it makes us happy.
- Conserving butterflies will also conserve various bird species, crops and conserve the ecosystem as a whole.

Protected Areas of Arunachal Pradesh:
1. Talle Wildlife Sanctuary (Protected area)
2. Dihang Dibang Biosphere Reserve
3. Eagle Nest Wildlife Sanctuary
4. Namdapha Tiger Reserve
5. Mouling National Park
6. Sessa Orchid Sanctuary(conjoins Eaglenest Wildlife Sanctuary)
7. Pakke Wildlife Sanctuary
8. Dibang Wildlife Sanctuary
9. Kamlang Wildlife Sanctuary
10. Itanagar Wildlife Sanctuary

PROTECTED AREAS OF ARUNACHAL PRADESH

Name of Some States:
1. Tamil Nadu: Tamil Yeoman (Cirrochroa thais)
2. Maharashtra: Blue Mormon (Papilio polymnestor)
3. Uttarakhand: Common peacock((Papilio bianor polyctor)
4. Karnataka: Southern bird wings (Troides Minos)
5. Kerala: Budha Mayoori (Malabar banded peacock)

21. COP26- Net Zero Carbon Emissions:
- On November 1, 2021, at COP26 climate summit, Prime Minister Narendra Modi announced 2070 as the India's target to reach net zero carbon emissions.
- India's announcement came as a surprise to delegates in Glasgow, as India had rejected calls to announce such target recently.
- US, UK & Japan have net zero target by 2050; EU by 2060; Saudi Arabia, China & Russia by 2070.

What is net-zero target?
- A net-zero target is defined as date by which a country will only emit carbon dioxide or other greenhouse gases that can be absorbed by forests, soil, crops, and developing technologies such as carbon capture technology.

Which are the top Greenhouse Gas Emitters?
- China, United States, India and Russia are the top greenhouse gas emitters. India is the third-biggest emitter of greenhouse gases and is among the countries which are most vulnerable to the effects of climate change. As per Global Climate Risk Index 2021, India is the seventh-most affected nation by extreme weather events.

India's goal towards net-zero emissions:
- India's goal to achieve net-zero emissions by 2070 is far-fetched. Thus, to support this goal, four other aggressive pledges were made. These targets are:
1. 50% of power will come from renewables by 2030.
2. 500 GW of installed renewable energy capacity will be reached by 2030.
3. Reduction in carbon intensity by 45% by 2030.
4. Reduction in projected total carbon emissions by 1 billion tonnes by 2030.

5. India further seeks to reduce its projected total carbon emissions by 1 billion tonnes by the end of the decade.

Issues Associated to Climate Change Mitigation:

Unfulfilled Pledges:

- There has been an acknowledgment even in the leaders' commitments and speeches that accelerated action now is required and the world has not kept up with the pledges that are needed to be fulfilled to stay below 1.5℃ temperature rise by the end of the century.

Restricted Flow of Funds:

- As per the two UNFCCC's Biennial Assessment of Finance (2018), the actual flow of funds from the developed to developing countries amounts to only 38 billion dollars that too after the relaxed criteria adopted by the UNFCCC.
- The actual flow of funds meant for climate finance like the Green Climate Fund (GCF) or the Adaptation Fund is much less and therefore a lot of finance flows through the World Bank and similar institutions have to be repackaged as climate finance.

Higher Adaptation to Mitigation Fund Difference:

- Adaptation finance is much less in comparison to mitigation finance. The proportion is around 75:25 or 65:35. The larger one going for mitigation actions.

Issues Raised in NDC Synthesis Report:

- In the NDC Synthesis Report, what is seen is that the developed countries who have pledged the 2050 carbon neutrality goal, even if their commitments are summed up, it really doesn't add up too much.
- It is not even leading to 100% reduction in emissions. What is actually happening is that they are trying to shift the emission burden to developing countries.

Issue Related to Net Zero Emissions:

- Net zero emissions means that a country can keep emitting Greenhouse Gases and it will purchase carbon credit from other countries and show itself to be net zero.
- It may be beneficial to some developing countries but the same is not the case at the global scale.
- The developed countries shall become carbon neutral by 2030, otherwise they will keep occupying the carbon space which will mean that the developing countries will be crowded out of the carbon space and will not have any carbon space in the coming years.

22. One Sun One World One Grid initiative:

- The One Sun One World One Grid Declaration (OSOWOG) was jointly released by Prime Minister Narendra Modi and UK Prime Minister Boris Johnson at the COP26 Climate Meet in Glasgow.

About OSOWOG:

- 'One Sun, One World, One Grid' (OSOWOG) solution will be used to tackle the challenge of solar power.
- Earth's atmosphere receives enough sunlight in one hour, that can be used to power the electricity need of every human on earth for a year. However, solar energy is only available during the day. Another challenge is that it is dependent on weather conditions.
- This project is about setting a 'trans-national electricity grid to supply solar power across the world. The vision behind OSOWOG is 'The Sun Never Sets'. It is a constant at some geographical location, across the globe, at any given point of time.
- OSOWOG is the most ambitious schemes undertaken by India and is significant in terms economic benefits. It has been taken up under the technical assistance program of the World Bank. This plan will also leverage the International Solar Alliance (ISA).

Three Phases of the OSOWOG:

- First Phase: It will involve interconnectivity within the Asian continent.
- Second Phase: Africa will be added.
- Third Phase: It will involve global interconnection.

Significance of OSOWOG:

- OSOWOG project will help all the participating countries in attracting investments in renewable energy sources. It will also help in utilizing finances, skills and technology.
- It will lead to lesser project costs, higher efficiencies and increased asset utilization across all the participating entities.

- Economic benefits arising out of the project will result into poverty alleviation. It will also support in mitigating water & sanitation, food and other socio-economic challenges.

Challenges:
- One of the big challenges for implementation will be maintaining a stable grid over a large geographical area.
- Electricity Grid is vulnerable to accidents, weather, and cyber-attacks that are prone to increase and disrupt the electricity supply on mass scale.
- The mechanism of cost-sharing will also be challenging as participating countries are both rich and poor nations.

23. Stubble Burning Incidents:
- Recently, ICRI-Indian Agriculture Research Institute (IARI) recently published its data on stubble burning incidents.
- This report was published at the time when Delhi and its adjoining states are reeling from a thick blanket of smog and deadly fumes.
- As per report, stubble burning incidents in the year 2021 are considerably lower in most states, with exception in Haryana.
- In Haryana, stubble burning incidents has increased by 48.5 per cent in between September 15 and November 13, 2021.
- In Punjab, the cumulative number of such incident is 21 per cent lesser as compared to However, since October 13, Punjab witnessed a 53.3 per cent jump in stubble burning incidents.

Effects of Stubble Burning:
- **Pollution:** Open stubble burning emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like methane (CH_4), Carbon Monoxide (CO), Volatile organic compound (VOC) and carcinogenic polycyclic aromatic hydrocarbons. They may eventually cause smog.
- **Soil Fertility:** Burning husk on ground destroys the nutrients in the soil, making it less fertile.
- **Heat Penetration:** Heat generated by stubble burning penetrates into the soil, leading to the loss of moisture and useful microbes.

Advantages of Stubble Burning:
- It quickly clears the field and is the cheapest alternative.
- Kills weeds, including those resistant to herbicide.
- Kills slugs and other pests.
- Can reduce nitrogen tie-up.

Alternative Solutions:
- Promote paddy straw-based power plants. It will also create employment opportunities.
- Incorporation of crop residues in the soil can improve soil moisture and help activate the growth of soil microorganisms for better plant growth.
- Convert the removed residues into enriched organic manure through composting.
- New opportunities for industrial use such as extraction of yeast protein can be explored through scientific research.

Indian Agricultural Research Institute (IARI):
- **IARI** is commonly known as the **Pusa Institute**. It is the national Institute for agricultural research, education & extension in India.
- The institute is originally called as Pusa Institute because it was located in Pusa Bihar in 1911 with the name "Imperial Institute of Agricultural Research". In the year 1919, it was renamed as Imperial Agricultural Research Institute. The institute was located to Delhi in 1936, after a major earthquake in Pusa.
- The IARI was responsible for research leading to "**Green Revolution in India**" in 1970s. IARI is financed and administered by Indian Council of Agricultural Research (ICAR).