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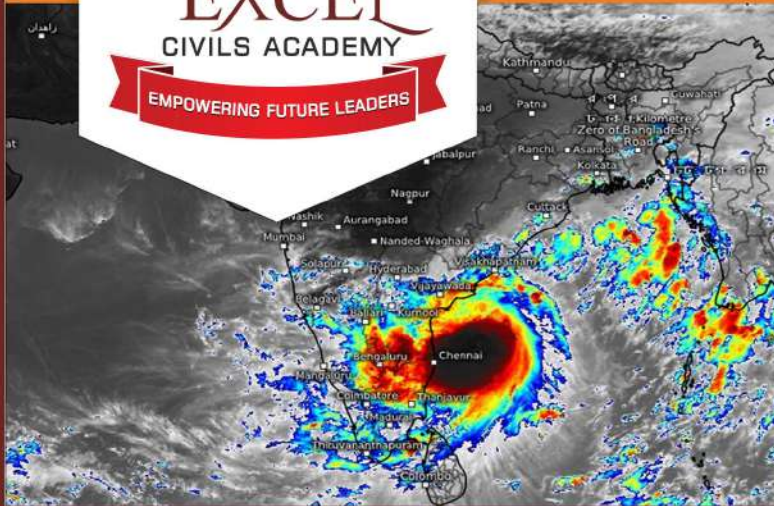## QUEST

VOLUME - 30, JUNE 2022

EXCEL
CIVILS ACADEMY
EMPOWERING FUTURE LEADERS

Cyclone Asani: Who Named It, Latest Updates & All You Need To Know

UK Prime Minister Visit to India

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Operation Mahila Suraksha

INS Shivaji's marine engineering centre recognised by skill development ministry

Surrogacy (Regulation) Act, 2021

Rashtriya Gokul Mission

The concept of D2M technology

A Monthly Magazine from
EXCEL CIVILS ACADEMY
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Director's Message

Dear Aspirants,

The Government of India announced an attractive recruitment scheme for Indian youth to serve in the Armed Forces on 14th June 2022. The scheme is called AGNIPATH and the youth selected under this scheme will be known as *Agniveers.* AGNIPATH allows patriotic and motivated youth to serve in the Armed Forces for a period of four years.

The AGNIPATH scheme has been designed to enable a youthful profile of the Armed Forces. It will provide an opportunity to the youth who may be keen to don the uniform by attracting young talent from the society who are more in tune with contemporary technological trends and plough back skilled, disciplined and motivated manpower into the society. As for the Armed Forces, it will enhance the youthful profile of the Armed Forces and provide a fresh lease of 'Josh' and 'Jazba' whilst at the same time bring about a transformational shift towards a more tech savvy Armed Forces – which is indeed the need of the hour. The nation stands to immensely benefit by infusion of highly inspired youth with deeper understanding of self-discipline, diligence and focus who would be adequately skilled and will be able to contribute in other sectors.

The Agnipath scheme envisages recruiting 46,000 soldiers between the ages of 17.5 and 21 years into the three services on a contractual basis this year. The youth selected under this scheme would be called "Agniveers" and the duration of employment would be 4 years. Upon completion of this time period, 25 percent of Agniveers would be inducted into the armed forces and the remaining 75 percent would be given a lump sum amount after completion of their contract period.

The major aim of the Central government to introduce this scheme is to reduce the age profile of armed forces from 30yrs to 25yrs. The need for reducing the age profile was felt since the Kargil war of 1999. The Kargil Review Committee (KRC) was setup to examine lapses that allowed Pakistani soldiers to capture strategic heights in India during the Kargil war. One of the major recommendations of the Committee was to have a "young and fit army". In line with these recommendations, the Government has come up with this scheme wherein a recruit would be paid a salary of Rs.30000 for the first year. He would be paid Rs.33000, Rs.36500 and Rs.40000 for second, third and fourth years respectively. 30 percent of this pay would be deducted and added to a corpus to which the Central government would contribute an equal amount. This corpus would be called the Seva Nidhi and it would be exempt from Income Tax. Soldiers recruited under this scheme would not be entitled to gratuity and there would not be any provident fund deductions as the Seva Nidhi is similar to Employee Provident Fund Scheme. The soldiers would also get a free insurance cover of Rs.48 lakh for the duration of their service period.

The Central Government has announced certain benefits to the 75 percent of the candidates who are terminated and given severance pay after 4 years. The benefits include 10percent reservation in Home

and Defence ministries' posts, 10 percent reservation in the Indian Coast Guard jobs, CAPF jobs, etc. Also, NIOS (National Institute of Open Schooling) has announced that it will develop courses for Agniveers to obtain 10th and 12th pass certificates. These certificates can be used to obtain admission in higher educational institutions upon completion of their contractual period. Various State governments have also announced that Agniveers will be given priority in their recruitment processes. Defence experts opine that this scheme will instil patriotism, teamwork, and loyalty in the younger generation and there would be a pool of trained professional available in the country which could be tapped by the Government in times of external threats, internal threats and natural calamities. This scheme would also help in curtailing the booming pension bill so that the funds thus saved can be utilised for modernisation of the armed forces.

Critics of this scheme argue that this will be a death knell to the morale of the forces as the recruitment into the lower rung of the Army was regimental based earlier and this pan India recruitment would dent the camaraderie of the forces. Also, this scheme would lead to loss of institutional memory as the soldiers are recruited for a short period.

The Central government and the supporters of this scheme opine that this scheme will bring in a younger demography into the picture which can be trained easily to use advanced weaponry and tactical surveillance machinery. They quote the example of Israel where the duration of the service is even lesser than that of Agnipath but the Israeli army is hailed for its performance.

India, in order to effectively fight a technologically advanced neighbour like China, has to increase the expenditure for empowering its forces technologically. Agnipath scheme paves a way for cutting down on the mounting pension bills and providing a youthful force that are bestowed with excellent career options after completing their contractual period. This scheme is untested and might need fine tuning in the future to balance the requirements of the Armed Forces and the aspirations of the Agniveers, but it definitely is a step in the right direction to overhaul the system to compete in a world of technological warfare.

This is a major defence policy reform introduced by the Government to usher in a new era in the Human Resource policy of the three Services. The policy, which comes into immediate effect, will hereafter govern the enrolment for the three services.

Best wishes,

Yours sincerely,

K Rajendra Kumar IPS (Retd)

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1. NATIONAL

1.1 JanSamarth Portal

Prime Minister Narendra Modi urged bank chiefs to make it easier for people to get loans through the new JanSamarth portal, a repository of a dozen credit-linked government schemes.

- He said the new portal would make life easier for farmers, students and entrepreneurs as they could assess which scheme worked best for them, on that platform instead of visiting various websites.

- Finance and Corporate Affairs Minister Nirmala Sitharaman said as of now, 12 credit schemes that granted credit from banks were on the portal, to ensure that citizens need not answer the same questions whenever they applied for schemes.

- The portal is unique in the sense it is the first of its kind. It connects beneficiaries directly to the lenders.

- The idea behind launching this portal is to encourage inclusive growth and development of several sectors.

- This will be achieved by guiding them toward the appropriate government schemes and benefits through simple and easy digital processes.

- 13 schemes under 4 loan categories are linked to this portal. The 4 loan categories are- education, agricultural infrastructure, business activity and livelihood.

1.2 Food Safety Index

- On the occasion of World Food Safety Day, the Union Health Minister released Food Safety and Standards Authority of India (FSSAI)'s 4th State Food Safety Index (SFSI) to measure the performance of States across five parameters of food safety.

- Tamil Nadu topped the State Food Safety Index followed by Gujarat and Maharashtra.

- Among Smaller States: Goa stood first, followed by Manipur and Sikkim.

- Among UTs: Jammu and Kashmir, Delhi and Chandigarh secured first, second and third ranks.

- SFSI was started from 2018-19 with the aim of creating a competitive and positive change in the food safety ecosystem in the country.

- The index is developed by FSSAI (Food Safety and Standards Authority of India) to measure the performance of states on five significant parameters of Food Safety.

- The parameters include Human Resources and Institutional Data, Compliance, Food Testing – Infrastructure and Surveillance, Training & Capacity Building and Consumer Empowerment.

- The Index is a dynamic quantitative and qualitative benchmarking model that provides an objective framework for evaluating food safety across all States/UTs.

- The first State Food Safety Index for the year 2018-19 was announced on the first-ever World Food Safety Day on 7th June 2019.

1.3   Single Nodal Agency (SNA) Dashboard

- Union Minister for Finance and Corporate Affairs Smt. Nirmala Sitharaman launched the Single Nodal Agency (SNA) Dashboard during the Iconic Week Celebrations of Azadi Ka Amrit Mahotsav celebrations of Ministry of Finance, in New Delhi.

- The Ministry of Finance & Ministry of Corporate Affairs' Iconic Week celebrations from 6th June to 12th June 2022 was launched by the Prime Minister, Shri Narendra Modi.

- The SNA Dashboard forms part of a major public financial management reform that was initiated in 2021 with regards to the manner in which funds for Centrally Sponsored Schemes (CSS) are released, disbursed and monitored.

- This revised procedure, now referred to as the SNA model, requires each State to identify and designate a SNA for every scheme.

- All funds for that State in a particular scheme will be credited in this bank account, and all expenses will be made by all other Implementing Agencies involved from this account.

- The SNA model, therefore, ensures that allocation of funds to States for the CSS are made in a timely manner and after meeting various stipulations.

- In order to give the stakeholders of SNA model the necessary feedback and monitoring tools in the operation of the schemes, Public Financial Management System (PFMS) has developed the SNA Dashboard.

1.4   World Summit Of Information Society 2022

The Minister of Communications attended the opening ceremony of the World Summit of Information Society (WSIS) 2022 in Geneva, Switzerland, where India showcased its telecom prowess during multilateral & bilateral engagements.

- The participation comes with India contesting the re-election to the ITU (International Telecommunication Union) Council, for the term 2023-2026.

- India has been a member of ITU, since 1869 and has been continuously participating, actively in the works, and activities of the Union.

- The World Summit on the Information Society Forum 2022 represents the world's largest annual gathering of the 'ICT for development' community.

- The Forum provides structured opportunities to network, learn and participate in multi-stakeholder discussions and consultations on WSIS implementation.

- The Agenda and Programme of the Forum will be built on the basis of the submissions received during the Open Consultation Process.

- Furthermore, the 2022 WSIS Forum will provide an opportunity to serve as a platform to track the achievements of WSIS Action Lines in collaboration with the UN Agencies involved and provide information and analyses of the implementation of WSIS Action Lines since 2005.

Highlights:

- India has developed the Low mobility Large Coverage Standard, earlier called 5Gi using a new waveform that enables 5G towers to cover wider areas in rural and remote areas.

- These standards were among the first 5G standards, which have been approved by the ITU and have also become part of Globally harmonized 3GPP (3rd Generation Partnership Project) Release 17 standards.

- These will be immensely helpful for countries with similar geographical spread.

- Over six hundred villages are being connected on Optical Fibre cable, with nearly 175,000 already connected.

- Villages left out of 4G connectivity are being covered through Universal Service Obligation Fund (USOF).

- India focuses on the use of technologies that can accelerate development and bridge this divide, like using E band wireless carriers, LEO (Low Earth Orbit) and MEO (Middle earth Orbit) satellite connectivity among others.

- India has issued the first service license for LEO or MEO connectivity and hopes to harness the technology to enable digital inclusion in remote areas.

- Developing 5G test bed, indigenous 4G and 5G stack, development of Indian 5G standards and setting up of 6G innovation forum are the initiatives to reduce cost, facilitate faster 5G spread in rural areas and eliminate dependency on specific vendors.

1.5 Operation Mahila Suraksha

Under the Operation Mahila Suraksha, Railway Protection Force (RPF) has arrested more than 7000 persons who were traveling unauthorizedly in the coaches reserved for women.

- RPF also rescued girls/women from becoming the victims of human trafficking (Operation AAHT).

Operation Mahila Suraksha:

- The pan-India drive "Operation Mahila Suraksha" was launched from 3rd to 31st May 2022 to ensure women's security.

- Other Such Operation: With an objective of providing enhanced safety and security to lady passengers travelling by trains for their entire journey a pan India initiative "Meri Saheli" is also operational.

- Indian Railways has launched "Meri Saheli" initiative for focused action on security of women across all zones with an objective to provide safety and security to lady passengers travelling by trains for their entire journey from starting station to destination station.

- The "Meri Saheli" initiative is to provide more safety and security of lady passengers travelling by trains in their entire journey from originating station till destination station. Under the initiative, a team of lady officer and staff have been formed. The team will visit all of the passenger coaches

including ladies coaches to identify women passengers. Details of their journey like, coach number & seat number will be noted down by the team, especially if a lady is travelling alone in the train. The passengers will be briefed about RPF Security Helpline No. 182, GRP Security Helpline No. 1512 and other precautions for example, not to take food from strangers, buying food from IRCTC authorized stalls only & taking care of luggage.

Operation Mission Amanat:

- Indian Railways launches a new initiative to track lost belongings of passengers! From now, Indian Railways travellers do not have to worry about their luggage while travelling. In case of lost belongings, one can easily track their lost items and get them back. The Railway Protection Force (RPF) plays a major role to ensure the safety and security of passengers as well as their luggage and belongings.

1.6 SHRESHTA Scheme

- Union Minister of social Justice and empowerment Dr. Virendra Kumar launched the Scheme "SHRESHTA"-Scheme for residential education for students in High school in Targeted Areas. The Scheme will be beneficial for SC students those who could not reach for higher quality education. It provides for high quality education for meritorious but poor SC students in CBSE-affiliated reputed residential schools across the country.Approximately 3,000 seats are provided each year for admission in class 9th and 11th and the entire cost of the school fee and residential charges are borne by the Department.

- The students, belonging to Scheduled Castes, studying in class 8th and 10th in the current academic year are eligible for availing the benefits of scheme are selected through a transparent mechanism through -National Entrance Test for SHRESHTA (NETS), which is conducted by the National Testing Agency (NTA) for admission in class 9th and 11th.Students belonging to marginalized income group within the SC community, whose parental annual income is upto Rs.2.5 Lakh are eligible.

- Successful candidates, after following the e-counselling process, are given admission in the school of their choice anywhere in the Country for their academic persuasion. The Department shall bear the total cost of the school fee and hostel charges till completion of their academic upto class 12th.There after the students of the scheme may avail benefits of other schemes of the Department for their higher education.

1.7 2021 Report On International Religious Freedom

The 2021 Report on International Religious Freedom (IRF) was released by the US Department of State.

- The document is distinct from the IRF report released by the US Commission on International Religious Freedom (USCIRF).
- USCIRF is an independent, bipartisan federal government entity while the IRF is part of the US State Department. The former's report holds a statutory obligation.

Highlights of the Report

- India has seen an increase in attacks on people (due to religious intolerance) and places of worship.
- Attacks on members of religious minority communities, including killings, assaults, and intimidation, occurred throughout the year.
- These included incidents of 'cow vigilantism' against non-Hindus based on allegations of cow slaughter or trade in beef.
- The India segment also highlights anti-conversion laws in the country, noting that 28 States have these laws and arrests were made under them.
- It also notes that several State governments announced plans to introduce anti-conversion laws.
- Police arrested non-Hindus for making comments in the media or on social media that were considered offensive to Hindus or Hinduism.
- There have been attacks in Jammu and Kashmir targeting and killing civilians and migrants, including Hindu migrant workers from Bihar.
- As per reports, this caused extensive fear in the Hindu and Sikh communities, leading to an exodus of migrants from the area.
- Incidents of lynching of Muslims in Tripura, Rajasthan, and Jammu and Kashmir in 2021 are also mentioned.

1.8 'Grievance Appellate Committees' For Hearing Appeals Regarding Social Media Posts

A proposal for setting up 'Grievance Appellate Committees' for hearing appeals regarding social media posts has been put forward by the government of India.

- In 2021, multiple stand-offs over content moderation and takedown happened between the government and the social media platforms.
- Twitter accounts of news websites, actors, political workers and bloggers, posting messages in support of the farmers' agitation were blocked following government orders.
- As Internet access continues to rapidly expand in India, new issues related to the government policies also keep emerging.
- Therefore, it becomes necessary to address the gaps to deal with such issues.
- One or more 'Grievance Appellate Committees' will be constituted by the Central Government as per the draft of the proposed amendments to the IT Rules, 2021.

- The appellate committees will be dealing with appeals by users against the decision of the Grievance Officer appointed by the social media intermediary.

- The committee will comprise a chairperson and other members appointed by the Central government.

- Any person aggrieved by an order of the Grievance Officer appointed by a social media network may appeal to the Grievance Appellate Committee within 30 days of receipt of communication from the Grievance Officer.

- The Grievance Appellate Committee shall deal with such appeal expeditiously and shall make an endeavour to dispose of the appeal finally within 30 calendar days from the date of receipt of the appeal.

- Every order passed by the Grievance Appellate Committee shall be complied with by the intermediary concerned.

Proposed amendments to the IT Rules, 2021:

- The draft proposes to create government-appointed appeal committees that will be empowered to review and possibly reverse content moderation decisions taken by social media companies. "The Central Government shall constitute one or more Grievance Appellate Committees, which shall consist of a Chairperson and such other Members, as the Central Government may, by notification in the Official Gazette, appoint," MeitY said in the draft.

- The new proposal also suggests placing additional responsibilities on grievance officers appointed by social media companies. It says that if a user complains about content which is "patently false", infringes copyright, and threatens the integrity of India, among other things, a grievance officer will have to expeditiously address it within 72 hours. Under current rules, grievance officers have 15 days to act on and dispose of users' complaints.

Have there been concerns raised around the proposals?

- The proposal to set up government-appointed committees has triggered concerns about the government overriding social media platforms' content decisions.

- Reacting to the proposal while it was made in the last draft, Delhi-based digital rights group Internet Freedom Foundation had said, "The proposal, without any legislative basis, seeks to subject content on social media to the direct scrutiny of the government by permitting users to appeal decisions of social media platforms to a Grievance Appellate Committee constituted by MeitY".

1.9 E-transmission Moratorium

India will oppose the continuation of a moratorium on Customs Duties on electronic transmission (E-Transmission) at the World Trade Organization's (WTO) 12th Ministerial Conference (MC12) starting in June 2022 as it favors developed nations only

- At the 12th MC in June 2022, many WTO members are seeking temporary extension of the moratorium till 13th MC but India does not want this time to continue this further.
- India and South Africa on several occasions have asked the organization to revisit the issue and have highlighted the adverse impact of the moratorium on developing countries.
- India wants the WTO to intensify the work programme on the e-commerce sector.
- India has also stated that the Council for Trade in Goods, Council for Trade in Services, Council for TRIPS (Trade Related Aspects of Intellectual Property Rights) and the Committee for Trade and Development should take up discussions on e-commerce as per their respective mandates originally set.
- India believed that formal negotiations in the WTO on rules and disciplines in e-commerce would be premature given the highly asymmetrical nature of the existing global e-commerce space and lack of understanding on the implications of the multi-faceted dimensions of issues related to the sector.
- The moratorium was extended at the 11th MC in Argentina in 2017 for two years.
- In the General Council meeting in December 2019, members agreed to maintain the current practice till the 12th MC.
- The WTO members had agreed not to impose customs duties on electronic transmissions since 1998 and the moratorium has been periodically extended at successive Ministerial Conferences (MC), which is the highest decision making body of the 164-member organisation (WTO).
- The moratorium is on digitisable products like photographic films, cinematographic films, printed matter, music, media, software, and video games.
- In 1998, ministers at the Second Ministerial Conference adopted the Declaration on Global Electronic Commerce, calling for the establishment of a work programme on e-commerce, which was adopted later that year.
- Since most countries didn't have concrete policies on e-commerce, which was an emerging area of trade in even developed countries in 1998, they had decided to establish a work programme on it to hold intensive talks and impose a moratorium on customs duties on electronics transmission.
- In 1998, the General Council of the WTO established the work programme on e-commerce to comprehensively examine all trade-related issues pertaining to global e-commerce by considering the economic, financial and development needs of emerging economies.
- The WTO Work Programme on electronic commerce defines electronic commerce" as the "production, distribution, marketing, sale or delivery of goods and services by electronic means."

1.10 Government-e-Marketplace (GeM)

The Union Cabinet cleared a proposal allowing cooperatives to sell products on the Government-e-Marketplace (GeM) platform in a transparent manner.

- The move will benefit 27 crore people associated with 8.5 lakh cooperatives.
- The micro and medium small industries will get buyers and it will boost the prospects of "Vocal for local" and Atma Nirbhar Bharat.
- The cooperatives may, however, be charged a transaction fee to cover the incremental costs.
- The validated list of cooperatives to be onboarded on the GeM — for pilot as well as subsequent scale-up — will be decided by the Ministry of Cooperation in consultation with the GeM SPV [Special Purpose Vehicle].
- The GeM started in 2017 is a one-stop portal to facilitate online procurement of commonly used goods and services.
- The portal is open for all government buyers — Union and State Ministries, departments, public sector enterprises, autonomous institutions, local bodies and so on.
- Private buyers cannot buy on the platform but private people can sell products to government bodies through the portal.

1.11 Shimla Garib Kalyan Sammelan

The 'Garib Kalyan Sammelan' in Shima, Himachal Pradesh was addressed by PM Narendra Modi. This programme was organized to mark the completion of eight years of the Narendra Modi-led government.

- It has been organized across the nation at District Headquarters, State Capitals, and Krishi Vigyan Kendras.
- The Sammelan has been organized so that the elected public representatives from across India directly interact with the public to get their feedback regarding the various welfare programmes that are being run by the central government.
- On this occasion, the PM also interacted with various beneficiaries of PM-KISAN from across the nation.
- PM Modi also released the 11th instalment of financial benefits that are given by the central government under the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme.
- Under the 11th instalment, an amount of around Rs. 21,000 crores will be distributed to over 10 crore beneficiary farmer families across the country.

1.12 Gen Next Democracy Network

Indian Council for Cultural Relations's (ICCR) ten days programme Gen Next Democracy Network concluded.

- Youth from democratic countries come to India under the Gen Next Democracy Network programme.
- During the programme, they get acquainted with India's heritage, culture and functioning of Indian democracy.

- In the closing ceremony, 27 delegates from six countries- Ghana, Bangladesh, Peru, Nepal, Brunei and Norway shared their experiences of visiting India.

Indian Council for Cultural Relations (ICCR):

- The Indian Council for Cultural Relations (ICCR), is an autonomous organisation of the Government of India.
- The ICCR Headquarter is situated in New Delhi.
- It was founded in 1950 by Maulana Abul Kalam Azad, the first Education Minister of independent India.
- It is involved in India's global cultural relations, through cultural exchange with other countries and their people.
- The council also operates missions internationally, with established cultural centres in various countries.
- It also administers the Jawaharlal Nehru Award for International Understanding, established by the Government of India in 1965, whose last award was in 2009.

1.13 Indus Water Treaty

India and Pakistan have begun another round of the Permanent Indus Commission meeting that is held annually under Indus Water Treaty (IWT) 1960.

- The Indus talks have survived the freeze in ties as both countries see it as mandatory under the IWT.
- Under the provisions of the treaty, the two sides are required to meet at least once every year, alternately in India and Pakistan.
- The last meeting, held on March 23-24, 2021 in New Delhi.

About the Indus Water Treaty:

- It is a Water-Distribution Treaty, signed in Karachi on 1960, between India (Pm Jawaharlal Nehru) and Pakistan (President Ayub Khan), brokered by the World Bank.
- Under the provisions of the Indus Waters Treaty, signed between India and Pakistan in 1960, all the waters of the eastern rivers the Sutlej, Beas, and Ravi amounting to around 33 MAF (million acre-feet) annually is allocated to India for unrestricted use.
- The waters of western rivers Indus, Jhelum, and Chenab amounting to around 135 MAF annually are largely for Pakistan.
- Under the Treaty, India has been given the right to generate hydroelectricity through a run of the river projects on the western rivers subject to specific criteria for design and operation.
- It also gives the right to Pakistan to raise concerns on the design of Indian hydroelectric projects on western rivers.

- The Permanent Indus Commission is a bilateral commission of officials from India and Pakistan, created to implement and manage goals of the Indus Waters Treaty, 1960.
- The Commission according to the treaty must meet regularly at least once a year, alternately in India and Pakistan.

1.14 Benefits Under The PM Cares For Children Scheme

Prime Minister Narendra Modi has released benefits under the PM Cares for children scheme that supports those who lost their parents during Covid-19 pandemic.

- Launched in May 2021.
- The scheme has been launched for support & empowerment of Covid affected children.
- Eligibility: All children who have lost both parents or surviving parent or legal guardian/adoptive parents due to Covid 19 will be supported under the scheme.

Features of the scheme:

- A corpus of Rs 10 lakh for each child: This corpus will be used to give a monthly stipend from 18 years of their age, for the next five years and on reaching the age of 23 years, he or she will get the corpus amount as one lump-sum for personal and professional use.
- School Education: For children under 10 years: Admission will be given in the nearest Kendriya Vidyalaya or in a private school as a day scholar.
- School Education: for children between 11-18 years: The child will be given admission in any Central Government residential school such as Sainik School, Navodaya Vidyalaya etc.
- Support for Higher Education: The child will be assisted in obtaining an education loan for Professional courses / Higher Education in India as per the existing Education Loan norms.
- Health Insurance: All children will be enrolled as a beneficiary under Ayushman Bharat Scheme (PM-JAY) with a health insurance cover of Rs 5 lakhs.

1.15 Prime Minister's Special Scholarship Scheme

The Union government has extended a scholarship scheme from the United Progressive Alliance era for students from Jammu and Kashmir and Ladakh for another five years in the wake of the encouraging response it has received.

- The Prime Minister's Special Scholarship Scheme (PMSSS) was introduced by the Congress-led UPA government in 2011 to provide funding to 5,000 meritorious students each year to study in private and government educational institutions across the country.
- Aimed at promoting employment opportunities for students from J&K and Ladakh, the scheme, with an annual budget of ₹180 crore to ₹190 crore, is implemented by the All India Council for Technical Education (AICTE).
- The term of the scheme was due to end last year, but the Central government decided to extend it for another five years for the benefit of students.

- The scheme offers 4,500 seats for general education courses (Bachelor's in Arts, Commerce and Science), and 250 each for engineering and medical degrees.
- While the scholarship offered for general education courses is ₹1.3 lakh, including a ₹1 lakh maintenance fee to cover hostel and mess charges, it is ₹2.25 lakh for engineering and ₹4 lakh for medical degrees.

1.16 Surrogacy (Regulation) Act, 2021

A petition was filed before Delhi High Court, challenging the exclusion of a single man and a woman having a child from surrogacy and demanded the decriminalization of commercial surrogacy.

- The petitioners have challenged their exclusion from availing surrogacy under the Assisted Reproductive Technology (Regulation) Act, 2021 and Surrogacy (Regulation) Act, 2021.
- The Petitioner argued that the personal decision of a single person about the birth of a baby through surrogacy, i.e., the right of reproductive autonomy is a facet of the right to privacy guaranteed under Article 21 of the Constitution.
- Thus, the right of privacy of every citizen or person to be free from unwarranted governmental intrusion into matters fundamentally affecting a decision to bear or beget a child through surrogacy cannot be taken away.

Surrogacy (Regulation) Act, 2021:

Provisions:

- Under the Surrogacy (Regulation) Act, 2021, a woman who is a widow or a divorcee between the age of 35 to 45 years or a couple, defined as a legally married woman and man, can avail of surrogacy if they have a medical condition necessitating this option.
- It also bans commercial surrogacy, which is punishable with a jail term of 10 years and a fine of up to Rs 10 lakhs.
- The law allows only altruistic surrogacy where no money exchanges hands and where a surrogate mother is genetically related to those seeking a child.

1.17 National Achievement Survey (NAS)-2021

The Ministry of Education released the National Achievement Survey (NAS) 2021 report.

- The Triennial Survey was conducted in November 2021.
- About 34 lakh students of 1.18 lakh schools in 720 districts from both rural and urban areas have participated in NAS 2021.
- It is a nationwide survey to assess the learning outcomes and health of the education system.

Highlights of the NAS 2021:

- The national average percentage of students for class third was 59%, which declined by 10% to 49% in class fifth.

- It further declined to 41.9% in class eight and then 37.8% in class 10.
- The performance recorded a decline in almost all subjects.
- For instance, the mathematics score nationally was 57% in class third, dropping by almost 10% to 44% in fifth, and to 36% in class eighth, and 32% in class 10th.
- The language score nationally was 62% in class third, and dropped to 52% in class fifth, and to 53% in class eighth.
- For science, the national score declined from 39% in class eighth to 35% in class 10.
- The average performance of schools in rural areas remained "significantly below" those urban areas in same states and union territories (UTs).
- The performance of students from the schedule caste (SC)/ schedule tribe (ST)/ Other Backward Classes (OBC) categories remained lower than that of students from the general category.
- The average performance of girls remained better than the boys in almost all subjects across the classes, both nationally and at state level.
- The perception of students about learning at home during the pandemic when the schools remained closed, and 78% of students termed it as burdensome with a lot of assignments.
- At least 38% of students faced difficulties in learning at home, while 24% said they did not have digital devices at home.

1.18 National Conference Of Women Legislators

The two-day National Conference of Women Legislators has been inaugurated on 26th May 2022 by President Ram Nath Kovind in Thiruvananthapuram, Kerala. Arif Mohammed Khan, the governor of Kerala presided over the inaugural session at the Kerala Legislative Assembly Complex.

- This event will be drawing a large number of female legislators and parliamentarians from across the country.
- This is the first-ever such event that is being hosted by the Kerala state Assembly.
- It is in line with the central government's Azadi Ka Amrit Mahotsav honouring the 75th independence anniversary of the country.
- At this conference, various sessions will be held that are based on themes vital to the country's women legislators.
- The conference will also be focusing on various modern issues like:
  - ➢ gender equality
  - ➢ women's rights
  - ➢ female representation in the decision-making bodies of the nation

The conference will be having sessions on:

Constitution and Women's Rights:

- In this session, the speakers will include Lok Sabha MP Kanimozhi, Gujarat Assembly Speaker Nimaben Acharya, and former Rajya Sabha member Brinda Karat, and former Lok Sabha Speaker Meira Kumar.

Role of Women in India's Freedom Struggle:

- The panelists for this session will include MPs Jebi Methar and Supriya Sule and former MP Subhashini Ali.

Women's Rights and Legal Gaps:

- The panelists for this session are MP Jaya Bachchan, West Bengal minister Shashi Panja, Justice Anu Sivaraman of Kerala High Court, and Delhi Assembly deputy speaker Rakhi Birla.

Under Representation of Women in Decision Making Bodies:

- This is the last session of this conference at it will include Telangana MLC Kavitha Kalvakuntla, Uttarakhand Assembly Speaker Ritu Khanduri, and Annie Raja, the general secretary of the National Federation of India Women.

1.19 Inter-State Council

The Inter-State Council (ISC) has been reconstituted with the Prime Minister as Chairman and Chief Ministers of all States and six Union Ministers as members.

- Ten union ministers will be the permanent invitees to the Inter-State Council.
- The government has also reconstituted the standing committee of the Inter-State Council with Union Home as Chairman.
- The Chief Ministers of Andhra Pradesh, Assam, Bihar, Gujarat, Maharashtra, Odisha, Punjab and Uttar Pradesh are also members of the standing committee of the Inter-State Council.

Inter-State Council:

- As part of the process of reviewing the working of the existing arrangements between the Union and the States, the Government constituted a commission in 1988 under the Chairmanship of Justice R.S. Sarkaria.
- One of the important recommendations of Sarkaria Commission was for establishing a permanent Inter-State Council as an independent national forum for consultation with a mandate well defined in accordance with Article 263 of the Constitution of India.
- The inter-state council is a recommendatory body that has been empowered to investigate and discuss subjects of common interest between the Union and state(s), or among states.
- It also makes recommendations for better coordination of policy and action on these subjects, and deliberations on matters of general interest to the states, which may be referred to it by its chairman.
- It also deliberates on other matters of general interest to the states as may be referred by the chairman to the council.
- The Council may meet at least thrice in a year.

- There is also a Standing Committee of the Council.

Composition:

- Prime Minister Chairman
- Chief Ministers of all States Members
- Chief Ministers of Union Territories having a Legislative Assembly and Administrators of UTs not having a Legislative Assembly and Governors of States under President's Rule (Governor's Rule in the case of J&K) Members.
- Six Ministers of Cabinet rank in the Union Council of Ministers to be nominated by the Prime Minister Members.

1.20 <u>Jagannath Temple Heritage Corridor Project Controversy</u>

The ArchaeologicalSurvey of India (ASI) on May 17 said that a sculpture of a lion, which possibly dates back to the Ganga dynasty, was found during excavation for the controversial heritage corridor project around the 12thcentury Jagannath Temple in Puri,Odisha.

- This is the third such lion sculpture found during the excavation work.
- Jagannath temple was constructed in the 12th century by King Anatavarman Chodaganga Deva of the Eastern Ganga Dynasty.
- Jagannath Puri temple is called 'Yamanika Tirtha' where, according to the Hindu beliefs, the power of 'Yama', the god of death has been nullified in Puri due to the presence of Lord Jagannath.
- It was called the "White Pagoda" and is a part of Char Dham pilgrimages (Badrinath, Dwaraka, Puri, Rameswaram).
- There are four gates to the temple
  - ➢ Eastern 'Singhadwara'(main gate with two crouching lions)
  - ➢ Southern 'Ashwadwara
  - ➢ Western 'Vyaghra Dwara
  - ➢ Northern 'Hastidwara'.
- There is a carving of each form at each gate.
- In front of the entrance stands the Aruna stambha or sun pillar, which was originally at the Sun Temple in Konark.

Jagannath temple Heritage Corridor Project:

- The project includes redeveloping major portions of the holy town and in the vicinity of the Jagannath temple for visitors and tourists.

The project will include:

- ➢ Shree Jagannath Temple Administration (SJTA) building redevelopment
- ➢ a 600-capacity Srimandir reception center
- ➢ Jagannath cultural center

- ➢ Badadanda heritage streetscape
- ➢ beachfront development
- ➢ Puri lake
- ➢ Musa river revival plan, etc.

1.21 Defamation Suit Against Shiv Sena's Sanjay Raut

BJP leader Kirit Somaiya's wife Medha has filed a civil defamation suit against Shiv Sena's Sanjay Raut.

- Somaiya sought court to direct Raut either pay her Rs 100cr or deposit amount in CM relief fund.
- Raut had repeatedly made defamatory public statements against her and her husband, she claimed.
- Defamation is the communication of a false statement that harms the reputation of an individual person, business, product, group, government, religion, or nation.
- In India, defamation can both be a civil wrong and a criminal offence. The difference between the two lies in the objects they seek to achieve.
- A civil wrong tends to provide for a redressal of wrongs by awarding compensation and a criminal law seeks to punish a wrongdoer and send a message to others not to commit such acts.

Legal provisions:

- Criminal defamation has been specifically defined as an offence under section 499 of the Indian Penal Code (IPC).
- Civil defamation is based on tort law (an area of law which does not rely on statutes to define wrongs but takes from an ever-increasing body of case laws to define what would constitute a wrong).
- Section 499 states defamation could be through words, spoken or intended to be read, through signs, and also through visible representations.
- Section 499 also cites exceptions. These include "imputation of truth" which is required for the "public good" and thus has to be published, on the public conduct of government officials, the conduct of any person touching any public question and merits of the public performance.
- Section 500 of IPC, which is on punishment for defamation, reads, "Whoever defames another shall be punished with simple imprisonment for a term which may extend to two years, or with fine, or with both."

1.22 Indira Gandhi Shahri Rozgar Guarantee Yojana

The Rajasthan government has come up with the job description under its much-touted Indira Gandhi Shahri Rozgar Guarantee Yojana.

- Announcing the employment scheme for urban areas on the lines of Mahatma Gandhi NREGA for rural areas in his budget speech

- While MGNREGA assists people in rural areas, there is no such scheme for street vendors, as well as those working at dhabas and restaurants in urban areas.
- Under the scheme, 100 days of employment per year will be provided to families residing in urban areas.
- The ratio of cost of material to payment for labour work of "general nature" will be in the ratio of 25:75, while for special works, it will be 75:25.
- The focus is on providing as many jobs as possible.
- On the other hand, creation of assets will require a higher material component, hence under 'special works' the ratio is 75:25.
- All those aged between 18 and 60 years and residing within urban body limits are eligible for the scheme, and in special circumstances such as a pandemic or a calamity, migrant labourers may be included.

1.23 7th Annual Meeting Of NDB

The Union Minister of Finance & Corporate Affairs and India's Governor for the New Development Bank (NDB) chaired the 7th Annual Meeting of Board of Governors of NDB (New Development Bank).

- The meeting was also attended by Governors/Alternate Governors of Brazil, China, Russia, South Africa and the newly joined members Bangladesh and United Arab Emirates (UAE).
- Theme for the Annual Meeting was "NDB: Optimising Development Impact".

Highlights of the Meeting:
- The Finance Minister (FM) underscored the importance of multilateralism and the spirit of global cooperation for economic recovery.
- In this regard FM acknowledged that the NDB has successfully established itself as a reliable development partner for Emerging Market Economies.
- Highlighting that India is celebrating 75 years of Independence this year, the Union Finance Minister mentioned that India's economic growth in the current financial year has been robust and is estimated to be 8.9 % which is the highest among all large economies.
- This reflects India's strong resilience and speedy recovery.
- The FM expressed confidence that India will continue to achieve a high growth rate in the current and next financial year.

New Development Bank:
- It is a multilateral development bank jointly founded by the BRICS countries (Brazil, Russia, India, China and South Africa) at the 6th BRICS Summit in Fortaleza, Brazil in 2014.

- It was formed to support infrastructure and sustainable development efforts in BRICS and other underserved, emerging economies for faster development through innovation and cutting-edge technology.
- It is headquartered at Shanghai, China.

1.24 Impact Of Increasing Pollution On Human Health : NHRC

A latest Lancet Commission report on Pollution and Health has highlighted the impact of increasing pollution on human health in India.

- Following this, the National Human Rights Commission (NHRC) has issued an advisory to the Centre and State Governments on preventing, minimising and mitigating the impacts of environmental pollution and degradation on human rights.

Highlights of the Report:

India specific findings:

- Air pollution was responsible for 16.7 lakh deaths in India in 2019, or 17.8% of all deaths in the country that year.
- This is the largest number of air-pollution-related deaths of any country.
- 9.8 lakh were caused by PM2.5 pollution, and another 6.1 lakh by household air pollution.
- Pollution sources associated with extreme poverty (such as indoor air pollution and water pollution): This number has reduced; but, this reduction is offset by increased deaths attributable to industrial pollution (such as ambient air pollution and chemical pollution).
- Worst affected places: Air pollution is most severe in the Indo-Gangetic Plain. This area contains New Delhi and many of the most polluted cities.
- Causes: Burning of biomass in households was the single largest cause of air pollution deaths in India, followed by coal combustion and crop burning.
- Lead: 27.5 crore children are estimated to have blood lead concentrations that exceed 5 µg/dL.
- Economic losses due to modern forms of pollution have increased as a proportion of GDP between 2000 and 2019 in India. It amounts to 1 percent of GDP.

Global findings:

- Globally, air pollution alone contributes to 66.7 lakh deaths.
- Overall, pollution was responsible for an estimated 90 lakh deaths in 2019 (equivalent to one in six deaths worldwide.
- More than 80 crore children are estimated to have blood lead concentrations that exceed 5 µg/dL.
- The factors responsible for this include rising ambient air pollution, rising chemical pollution, ageing populations and increased numbers of people exposed to pollution.
- The global cost of fossil fuel air pollution is estimated to be about US $8 billion per day.

1.25 The Places Of Worship Act

An appeal against the video survey of Varanasi's Gyanvapi mosque will be heard by the Supreme Court.

- The survey, according to a Muslim organisation, is in violation of the places of worship act, 1991.
- During a court-ordered videography survey of the Gyanvapi Masjid complex by a municipal court in Varanasi, a "shivling" was apparently discovered.
- The Gyanvapi Masjid is located near the iconic Kashi Vishwanath temple in Uttar Pradesh's Varanasi.

The Places of Worship Act, 1991:

- The Act states that a place of worship's religious nature must remain the same as it was on August 15, 1947.
- It says no person shall convert any place of worship of any religious denomination into one of a different denomination or section.
- It declares that all litigation, appeals, or other proceedings ongoing before any court or authority on August 15, 1947, involving converting the status of a place of worship, will cease as soon as the law takes effect. There will be no more legal action taken.

The following are exempt from these provisions:

- Ancient and historical monuments and archaeological sites and remains that are covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- A suit that has been finally settled or disposed of; and any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.
- The Act also does not apply to the place of worship commonly referred to as Ram Janma bhoomi- Babri Masjid in Ayodhya.
- This law will have an overriding effect over any other law in force.

2. INTERNATIONAL RELATIONS

2.1 <u>UK Prime Minister Visit to India</u>

Recently, the UK Prime Minister (PM) visited India. In this visit, both the countries agreed on a joint statement titled 'Towards shared security and prosperity through national resilience'.

What are the Highlights of the Visit?

Respecting India-Russia Relations:

- In the context of Ukraine Crisis and India's neutral stance, UK PM asserted that India's position on Russia is 'well known' and is not going to change. India has historic relationship with Russian and everybody respects it.

Cooperation on Indo-Pacific:

- The two countries had a shared interest in keeping the Indo-Pacific region free and open, particularly in the face of growing threats of Chinese coercion in South China Sea.

    Recently, the UK and India have agreed to strengthen their cooperation in the maritime domain as the UK will join India's Indo-Pacific Oceans Initiative and become a major partner on maritime security issues in Southeast Asia.

    India's Indo-Pacific Oceans Initiative (IPOI) is an open, non-treaty-based initiative for countries to work together for cooperative and collaborative solutions to common challenges in the region.

Tackling Extremism:

- They agreed to constitute a sub-group on countering extremism to further enhance cooperation between India and the UK in ensuring that all possible actions are taken against groups and individuals based in or operating out of either country.

Extraditing Economic Fugitives:

- India conveyed to the UK, that bringing back economic fugitives to face justice was a "high priority" for the government. Britain responded that it is concerned about this and doesn't welcome people who want to use its legal system to evade the Indian laws.

Discussion on FTA:

- Both leaders committed that Free Trade Agreements negotiations will conclude by the end of 2022.

Defence Cooperation:

- They discussed the next generation of defence and security collaborations across five domains — land, sea, air, space and cyber.

What are the Recent Developments on India's Relations with the UK?

- Despite the challenge posed by the Ukraine crisis, the India-UK relationship has been on an upward trajectory, exemplified by the conclusion of a Comprehensive Strategic Partnership in 2021.
  The agreement also established a 2030 Roadmap for India-UK relations, which primarily outlines the partnership plans for the bilateral relationship.

- Additionally, In January 2022, India and the UK managed to conclude the first round of talks for an India–UK Free Trade Agreement.

- The negotiations reflected shared ambitions to secure a comprehensive deal between the fifth (UK) and sixth (India) largest economies in the world as technical experts from both sides covered over 32 sessions encompassing 26 policy areas.

Way Forward

- A post-Brexit Britain needs to make the best of its historic ties; having walked out of Europe, the country needs all the partners it can find and a rising India is naturally among the top political and economic priorities.

- Britain remains the fifth-largest economy, a permanent member of the UN Security Council, a global financial hub, a center of technological innovation, and a leading cyber power.
  It has a significant international military presence and wide-ranging political influence. India should try harder to leverage these British strengths for India's strategic benefit.

2.2 West Bank Settlements: Israel

Recently, the Israel's Supreme Court has rejected a petition against the eviction of more than 1,000 Palestinian inhabitants of a rural part of the occupied West Bank in an area which Israel has designated for military exercises.

- Recently, tensions flared up again at Jerusalem's al-Aqsa Mosque between the Palestinians and Israeli police.

What was the Judgement?

• The judgment has paved the way for the demolition of eight small villages in a rocky, arid area near Hebron known to Palestinians as Masafer Yatta and to Israelis as the South Hebron Hills.

• Masafer Yatta residents and Israeli rights groups say that many of the Palestinian families have been permanently residing in the 3,000 hectares area since before Israel captured the West Bank, in the 1967 Six-Day War.

What is West Bank?

• West Bank is a landlocked territory in West Asia. It also contains a significant section of the western Dead Sea.

• It was captured by Jordan after the Arab-Israeli War (1948) but Israel snatched it back during the Six-Day War of 1967 and has occupied it ever since.

• The West Bank is sandwiched between Israel and Jordan.

• One of its major cities is Ramallah, the de facto administrative capital of Palestine. At present, there are around 130 formal Israeli settlements along with 26 lakh Palestinians at West Bank.

• Masafer Yatta is in the 60% of the territory where the Palestinian Authority is prohibited from operating.

• The Palestinians want the West Bank to form the main part of their future State.

What was the Six-Day War 1967?

• The Six-Day War was a brief, but bloody conflict fought in June 1967 between Israel and the Arab states of Egypt, Syria and Jordan.

• Israel seized the Sinai Peninsula and the Gaza Strip from Egypt, the West Bank and East Jerusalem from Jordan, and the Golan Heights from Syria.

• Since 1967, the lands Israel seized in the Six-Day War have been at the center of efforts to end the

Arab-Israeli conflict

- Even though Israel returned the Sinai Peninsula to Egypt in 1982 and withdrew from Gaza in 2005, the status of the Golan Heights and the West Bank continues to be a stumbling block in Arab-Israeli peace negotiations.

2.3 Europe to the Centre

- India has recently witnessed a flurry of diplomatic activities with a long line of ministers, senior military officers and diplomats from a number of countries visiting Delhi and engaging with their Indian counterparts.

- This attention being paid to India reflects not what India is but rather what India could become as one of the key architects of a new international order.

- In this context, the Prime Minister's recent visits to Berlin (Germany), Copenhagen (Denmark), and Paris (France) give us a glimpse of India's post-Russian strategic future in Europe. As Russia, isolated by unprecedented Western sanctions, deepens its alliance with China, Europe has begun to loom larger than ever before in India's strategic calculus.

What are the Recent Developments between India and Europe (Specifically Germany and France)?

- In April 2022, the President of the European Commission on her visit to Delhi unveiled the new contours of the EU's strategic partnership with India by launching the India-Europe Trade and Technology Council. This is the EU's second such council.

- However, in the PM's visit to Europe, the focus is on India's key bilateral partnerships with European majors - Germany and France as well as a critical northern corner of Europe, the so-called Norden.

- The visit will provide India with an opportunity to find ways to limit some of the negative regional and global consequences of the Russia-Ukraine war and explore the emerging possibilities for stronger cooperation with key European countries.

- The strategic convergence between India and France is based on the fundamental conviction of both countries in a multipolar world and in the concept of strategic autonomy.

- France has stood by India since 1998 when India conducted nuclear tests and the entire world was against the latter.

- In recent times, France has been India's "new Russia" its most important strategic partner.

- In the last few years, France has emerged as a strong defender of India's interests in the UN Security Council and a regional ally in the vast Indo-Pacific theatre.

- France has also been a major supplier of advanced arms to India.

- Germany and India do not have a traditional strategic partnership. It is a green partnership based on trade, investment, technology, functional collaboration, skill development, and sustainability.

- There are several initiatives like the Indo-German energy forum, environmental forum, partnership on urban mobility, skill development and science band technology.

- More recently, in January 2022, the German Navy frigate Bayern landed in Mumbai which was a remarkable step for Indo-German relations signifying a concrete outcome of the Indo- Pacific Policy Guidelines that Germany adopted in 2020.

What does the Ukraine Crisis hold for Indo-European Relations?

- The recent Russia-Ukraine war is one of the key obstacles that could shadow India's good relations with the European Union. However, the Western debate on Germany is even harsher.
- Germany is tied far more deeply to Russia than India with its annual trade with Russia being about $60 billion (while India's is at $10 bn).
- Germany's strategic dependence on Russia is also serious with its heavy reliance on Russian natural gas.
- Unlike other European countries, France should be able to understand India's stand on this issue as both the leaders were constantly in talks with the Russian President regarding the issue.
- With sanctions imposed on Russia, the world along with the European Union is looking for better options for trade and investments. However, China with its muscular foreign policies is not a perfect partner anymore.
- India is an important partner in this regard due to its sustained economic growth and market size.
- The Ukraine crisis created an urgency to engage with India as part of Europe's Indo-Pacific Strategy for Cooperation.

What could be the Way Forward?

    India, Europe and Indo-Pacific:

- India will need Europe more than it has in the recent past, whether in building up its deterrent capabilities or accelerating its own economic and technological transformation.
- India must deepen its all-round partnership with Europe, build a shared vision of an altered geopolitical landscape and encourage Europe to play a greater role in the Indo-Pacific.
- The two can mobilise massive economic resources for sustainable development of regional infrastructure, wield political influence and leverage their soft power to shape the Indo-Pacific discourse.

Possible Areas of Cooperation with Germany:

- Germany views India as an important partner for resolving global issues, including climate change, food security, energy and international peace and security
- Having built up a significant engagement with Russia over the decades, both India and Germany are under pressure to disentangle from the Russian connection.
- The two leaders may jointly find solutions regarding coping up with the Russian President.
- Expansion of India-Germany bilateral ties is also crucial. Commerce is what really drives Germany.

- Making India an attractive new destination for German capital, now under pressure to reduce its exposure to Russian and Chinese markets, should be the highest priority for India.

Possible Areas of Cooperation with France:

- The return of President Emmanuel Macron to power offers a good moment for India to imagine the next phase in bilateral relations.
- France has a critical role in making a success of India's ambitious current plans to expand domestic production of weapons with greater participation of private and foreign capital.
- France is also a preferred partner in the Indo-Pacific, even more so now with a blueprint for cooperation in the form of a Joint Strategic Vision for cooperation in the Indian Ocean Region concluded by both countries in 2018.
- As for nuclear energy, the two leaders must review progress in the joint construction of the world's largest nuclear park in Jaitapur, Maharashtra.
- The project has stalled a bit and it could do with some political impetus.
- Apart from the above traditional areas, discussions between the two leaders may dwell on newer areas of cooperation such as connectivity, climate change, cyber-security and science and technology.

Keeping Nordic Countries in Circle:

- The Nordic Five Denmark, Finland, Iceland, Norway, and Sweden have a population of barely 25 million but their GDP at $1.8 trillion is greater than that of Russia.
- In the last few years, India has rightly recognised that every one of the European nations can contribute significantly to India's development.
- Tiny Luxembourg brings great financial clout, Norway offers impressive maritime technologies, Estonia is a cyber power, Czechia has deep strengths in optoelectronics, Portugal is a window to the Lusophone world, and Slovenia offers commercial access to the heart of Europe through its Adriatic sea port at Koper.
- With Nordic countries, especially Denmark, India could build on the unique bilateral green strategic partnership.

2.4 India and Denmark

During the Indian Prime Minister's Visit to Denmark, India and Denmark agreed to further strengthen the Green Strategic Partnership with a focus on green hydrogen, renewable energy and wastewater management.

- Further, India conveyed its acceptance of the Danish invitation to join the International Center for Antimicrobial Resistance Solutions (ICARS) as a Mission Partner.

- The Danish Prime Minister confirmed Danish accession to the Global Digital Health Partnership on India's invitation to improve public health and well-being through evidence-based digital technologies.

What is the Status of India-Denmark Ties?

Background: The diplomatic relations between India and Denmark, established in September 1949, are marked by regular high-level exchanges.

- Both countries share historical links, common democratic traditions and a shared desire for regional, as well as international peace and stability.
- Bilateral relations were elevated to the level of "Green Strategic Partnership" during the Virtual Summit held in 2020.

What is Green Strategic Partnership?

- The Green Strategic Partnership is a mutually beneficial arrangement to advance political cooperation, expand economic relations and green growth, create jobs, and strengthen cooperation on addressing global challenges and opportunities; with a focus on an ambitious implementation of the Paris Agreement and the United Nations Sustainable Development Goals. India and Denmark both have ambitious goals within the climate agenda.
- India is the world's third-largest CO_2 emitter and by 2030, the country is expected to have doubled its carbon emissions.
- The Danish government has the ambition to reduce CO_2 emissions by 70% by 2030 and aims to undertake international leadership on SDG 7 on affordable and clean energy.
- By partnering, India and Denmark will demonstrate to the world that delivering on ambitious climate and sustainable energy goals is possible.
- Commercial and Economic Relations: Bilateral trade in goods and services between India and Denmark has grown by 78%, from USD 2.8 billion in 2016 to USD 5 billion in 2021.

- The major export items from India to Denmark are textiles, apparels and yarns related, vehicles and components, metal goods, iron and steel, footwear, and travel goods.

- Major Danish exports to India are medicinal/pharmaceutical goods, power generating machinery, industrial machinery, metal waste and ore, and organic chemicals.

- Cultural Exchange: India's 75th Independence Day was celebrated in Copenhagen with a great enthusiasm with a flag hoisting ceremony and vibrant Azadi Ka Amrit Mahotsav celebrations, attended by a large number of the diaspora.

- Indian community in Denmark include IT professionals, doctors and engineers. Important streets and public places have been named after Indian leaders which include the Gandhi Plaene (Gandhi Park), Copenhagen and a Nehru Road near Aarhu University in Aarhus.

International Center for Antimicrobial Resistance Solutions (ICARS)

- The idea of an international independent research and knowledge centre focusing on intervention and implementation research in low- and middle-income countries was fostered through talks between Denmark and the World Bank during fall of 2017 and spring 2018.

- At a meeting in March 2018, it was agreed that there was an unmet need in this area, and that it was important to pursue the idea further, exploring whether Denmark could initiate and host such a centre given its long history of working in One Health.

- In November 2018, the Danish Government formally announced its ambition to establish ICARS.

- Global Digital Health Partnership

- The Global Digital Health Partnership (GDHP) is an international collaboration of governments, government agencies and multinational organisations dedicated to improving the health and well-being of their citizens through the best use of evidence-based digital technologies.

- It was established in February 2018, to provide an opportunity for transformational engagement between its participants.

- Australia was the host country for the inaugural summit in 2018.

- The '4th Global Digital Health Partnership Summit' was held in February, 2019 in New Delhi.

Way Forward

- Cooperation at Multilateral Forum: India and Denmark have shared values of human rights, democracy, and rule of law and they should cooperate in multilateral fora like the World Trade Organization, International Solar Alliance, Arctic Council to advance democracy and human rights and promote a rule-based multilateral system.

2.5 India-Nordic Countries Bilateral Talks

Recently, the Prime Minister of India held a series of bilateral meetings with his counterparts from Denmark, Norway, Sweden, Iceland and Finland.

- At the meetings, a discussion was made regarding ways to further deepen bilateral ties and views were exchanged on regional and global developments.
- The meeting was organized on the sidelines of the second India-Nordic Summit in the Danish capital, Copenhagen.

What is the Background of Second India-Nordic Summit?

- The second edition held against the backdrop of the two most significant events that affected the world.

One is post-pandemic economic recovery, and the other is the ongoing war between Ukraine and Russia.

- Besides economy, trade and investment, the summit can be seen from the perspective of the concept of the welfare state that goes along with capitalism and democratic practices, blending the welfare model with the market economy.
- India invited Nordic companies for investing in the blue economy sector, especially in Sagarmala Project.
- India's Arctic Policy provides a good framework for expansion of India-Nordic cooperation in the Arctic region.
- The Nordic countries reiterated their support for India's permanent membership of a reformed and expanded United Nation Security Council.

- At the inaugural edition of the summit in 2018, the focus of the leadership was on global security, economic growth, innovation and climate change while emphasizing innovation and digital transformation as a driver of growth.

- The first summit sought to explore an extension of the application to New Delhi's flagship programmers like Make in India, Startup India, Digital India and Clean India, besides the support of the Nordic countries' Sustainable Cities Project to India's Smart Cities project. At the first summit, the Nordic countries welcomed India's application for membership in the Nuclear Suppliers' Group.

What are the Highlights of the Meeting?

India-Denmark:

- Discussed a wide range of issues of mutual interest to boost bilateral relations, including the war in Ukraine, the India-European Union (EU) free trade deal and the situation in the Indo-Pacific. Agreed to further strengthen the Green Strategic Partnership with a focus on green hydrogen, renewable energy and wastewater management.

India-Norway:

- Both leaders discussed the potential for deepening engagement in areas like Blue Economy, renewable energy, green hydrogen, solar and wind projects, green shipping, fisheries, water management, rainwater harvesting, space cooperation, long term Infrastructure investment, health and culture.
Indian PM asserted that Norway is a key pillar of India's recently announced Arctic Policy.

India-Sweden:

- During the meeting, the two leaders took stock of the progress in the Joint Action Plan and appreciated the expanding scope of the jointly launched Leadership Group on Industry Transition (LeadIT) initiative.

- This was an India-Sweden joint global initiative to set up a Leadership Group on Industry Transition (LeadIT) in September 2019 at the UN Climate Action Summit to help guide the world's heaviest greenhouse gas emitting industries toward a low-carbon economy.

- During the 2018 visit of Prime Minister Modi to Sweden, the two sides adopted a wide-ranging Joint Action Plan to take forward a wide range of initiatives in defense, trade and investment, renewable energy, smart cities, women's skill development, space and science and healthcare etc.

India-Iceland:

- Both leaders discussed ways to further strengthen economic cooperation especially in the sectors of geothermal energy, Blue Economy, Arctic, renewable energy, fisheries, food processing, education including digital universities, and culture.
Discussions also took place on expediting the India-European Free Trade Association (EFTA) trade negotiations.

India-Finland:

- Discussions were done regarding opportunities to expand cooperation in the fields of new and emerging technologies like Artificial Intelligence, quantum computing, future mobile technologies, clean technologies and smart grids.

  Indian PM invited Finnish companies to partner with Indian companies and take advantage of the enormous opportunities that the Indian market presents, particularly in telecom infrastructure and digital transformations.

What is the Significance of Nordic Countries for India?

- India and Nordic countries enjoy robust business partnerships though the economics of these Countries individually are much smaller than those of the G20 countries.

  The combined GDP is over USD 1.6 trillion, with a per capita income of around USD 54,000.

  The total bilateral trade and services between India and the Nordic countries is USD 13 billion.

Areas of Cooperation:

- The countries which have technological prowess and growing business ties will explore cooperation in five areas of mutual interest.

  These include green partnership, digital and innovation economy, trade and investment linkages, sustainable development, and collaboration regarding the Arctic region.

  Apart from the United States, India is the only other country with which the Nordic countries have summit-level meetings.

2.6 China's Global Security Initiative

Recently, a new Global Security Initiative (GSI) was put forward by Chinese President. The GSI looks to counter the US Indo-Pacific strategy and the Quad (India, US, Australia, Japan grouping).

- However, China did not provide much clarity or details about the proposed global security initiative.

What is GSI, as Envisaged by China?

- Principle of Indivisible Security: With growing threats posed by unilateralism, hegemony and power politics, and increasing deficits in peace, security, trust and governance, mankind is facing more and more intractable problems and security threats.

Thus, China held that the Global security initiative is envisaged to uphold the principle of "indivisible security".

The principle of "indivisible security" means that no country can strengthen its own security at the expense of others.

- Asian Security Model: GSI calls for a "common, comprehensive, cooperative and sustainable" security and building an Asian security model of mutual respect, openness and integration".

- Opposing Sanctions: This would oppose the use of unilateral sanctions and long-arm jurisdiction, appearing to refer to Western sanctions.
- Tackling New Cold War: Indo-Pacific' strategy to divide the region and create a 'new Cold War', and the use of military alliances to put together an 'Asian version of North Atlantic Treaty Organization (NATO).

According China, the Quad grouping was equivalent to the "Five Eyes" intelligence alliance involving Australia, New Zealand, Canada, the U.S. and U.K. and the AUKUS pact , as a key element in what he called U.S. plans to build an "Asian NATO".

What are Reactions of Quad Members?

- Quad is not a Military Alliance: The members of the Quad have rejected the notion that it is an Asian NATO or a military alliance, and pointed to its broad-based cooperation, including on vaccines and technology.
- Double Standards of China: Chinese criticism of unilateralism, hegemony and double standards is usually aimed at the US.
- Impact of Russia-Ukraine War: China's new advances in the Pacific could be related to the stagnation of the Belt and Road Initiative, due to the Ukraine war.

What are Events Signaling a New Cold War?

China's Development:

- For several decades, China's aggressive development under the relatively enlightened authoritarianism of Deng Xiaoping and his successors was seen positively in the United States. However, under Xi Jinping (President), China has evolved from a soft to a hard authoritarianism. There is now a president-for-life with a budding personality cult.
- US' Counter: In order to contain rising China's assertiveness, the US under its 'pivot to Asia policy' has launched a Quad initiative & Indo pacific narrative.
- Most recently, the US proposed to expand G7 to G-11 without including China in it. China's Stance on South China Sea: China's actions in the South China Sea, first by land reclamation and then constructing artificial islands for extending extra-territorial claim, has seen sharp criticism from the US and its allies.

Challenging Economic Hegemony:

- China has come out with alternative governance mechanisms to the U.S.-dominated International Monetary Fund, World Bank and World Trade Organization with its all-encompassing Belt and Road Initiative and institutions like Asia infrastructure investment bank, Contingency Reserve Agreement (CRA) of New Development Bank.

What should be the Role of India?

- India is a rising global power and citing its importance both the US and China sought to attract India in its camp. Foreign policy experts in the US argue India Is a Natural US Ally in the New Cold War.

- On the other hand, Chinese's Ambassador in India has suggested writing "together a new chapter" with "a shared future for mankind".

- In this context: India can promote new multilateralism under the aegis of Vasudhaiva Kutumbakam- which relies on restructuring both the economic order and societal behavior for equitable sustainable development.

- India must take up intensified diplomacy with global powers so that Asian Century can be defined in terms of peaceful co-existence and global interest.

  Apart from it, India should acknowledge that national security now relies on technological superiority in Artificial Intelligence (AI), cyber and space, and not expensive capital equipment.

- Thus, India should become self-sufficient in the domain of critical technologies.

2.7 Investment Incentive Agreement (IIA)

Recently, India and the United States signed an Investment Incentive Agreement (IIA) at Tokyo, Japan.

What is an Investment Incentive Agreement (IIA)?

About:

- This IIA supersedes the Investment Incentive Agreement signed between both the countries in the year 1997.

- There have been significant developments since the earlier IIA was signed in 1997, such as the founding of a new organization called Development Finance Corporation (DFC).

- DFC as a successor agency of the erstwhile Overseas Private Investment Corporation (OPIC) after the enactment of a recent legislation of USA, the BUILD Act 2018.

Purpose:

To keep pace with the additional investment support programmes, offered by the DFC, such as debt, equity investment, investment guaranty, investment insurance or reinsurance, feasibility studies for potential projects and grants.

- The Agreement is the legal requirement for DFC, to continue providing investment support in India.

- It is expected that signing of IIA would lead to enhanced Investment support provided by DFC in India, which shall further help in India's development.

What is the Status of DFC in India?

- DFC or their predecessor agencies have been active in India since 1974 and have so far provided investment support worth USD 5.8 billion of which USD 2.9 billion is still outstanding.

- Proposals worth USD 4 billion are under consideration by DFC for providing investment support in India.
- DFC has provided investment support in sectors that matter for development such as Covid-19 vaccine manufacturing, healthcare financing, renewable energy, Small and Medium Enterprises (SME) financing, financial inclusion, infrastructure etc.

What is the current Status of India-US Relations?

About:

- India-US bilateral relations have developed into a "global strategic partnership", based on shared democratic values and increasing convergence of interests on bilateral, regional and global issues.
- In 2015, both the countries issued a Delhi Declaration of Friendship and adopted a Joint Strategic Vision for Asia-Pacific and the Indian Ocean Region.

Civil-Nuclear Deal:

The bilateral civil nuclear cooperation agreement was signed in October 2008.

Energy and Climate Change:

- As a priority initiative under the PACE (Partnership to Advance Clean Energy), the US Department of Energy (DOE) and the Government of India have established the Joint Clean Energy Research and Development Center (JCERDC) designed to promote clean energy innovations by teams of scientists from India and the United States.
- India-US Clean Energy Agenda 2030 Partnership was launched at the Leaders climate summit 2021.

Defence Cooperation:

- Defence relationship has emerged as a major pillar of India-US strategic partnership with the signing of 'New Framework for India-US Defense Relations' in 2005 which was further updated for 10 years in 2015.
- India and US inked important defence pacts in the last few years and also formalised the four nation alliance of QUAD (India, US, Japan and Australia).
  The alliance is seen as an important counter to China in the Indo-Pacific.
- The Malabar exercise in November 2020 portrayed a high point in Indo-US strategic ties, it was the first time in 13 years that all four countries of QUAD came together sending a strong message to China.
- India now has access to American bases from Djibouti in Africa to Guam in the Pacific. It can also access advanced communication technology used in US defence.
- India and US have four foundational defence agreements:
  - ➢ Basic Exchange and Cooperation Agreement for Geospatial Intelligence (BECA).
  - ➢ General Security of Military Information Agreement (GSOMIA).

➢ Logistics Exchange Memorandum of Agreement (LEMOA).

➢ Communication Compatibility and Security Agreement (COMCASA).

- India-US Counter-Terrorism Cooperation Initiative was signed in 2010 to expand collaboration on counter-terrorism, information sharing and capacity building. A tri-services exercise– Tiger Triumph- was conducted in November 2019.

Bilateral and regional exercises include: Yudh Abhyas (Army), Vajra Prahar (Special Forces), RIMPAC, Red Flag.

Trade:
- The US is India's second largest trading partner and a major destination for India's exports of goods and services.
- The US replaced Mauritius as the second largest source of foreign direct investment into India during 2020-21.
- The previous US government ended India's special trade status (GSP withdrawal) and also imposed several bans, India also retaliated with bans on 28 US products.

Science & Technology:
- Indian Space Research Organization (ISRO) and National Aeronautics and Space Administration (NASA) are working together to realize a joint microwave remote sensing satellite for Earth observation, named NASA-ISRO Synthetic Aperture Radar (NISAR).

Way Forward
- India is emerging as a leading player in an international system that is undergoing an unprecedented transformation. It shall use its present situation to explore opportunities to further its vital interests.
- India and the US are strategic partners today in the true sense of the term - a partnership among mature major powers that is not seeking a complete convergence but managing differences by ensuring a continuous dialogue and channelling these differences into crafting new opportunities.

2.8 AUS-Taiwan Relations

Ahead of the Quad summit in Japan, the US President made a controversial statement giving affirmative reply in response to a question with regards to providing military aid to Taiwan in case of China's invasion.

- This has raised questions about whether the US is shifting from its long-standing policy of strategic ambiguity over Taiwan to that of strategic clarity.
- Quad grouping includes India, the US, Australia and Japan.

What is the Taiwan Issue?

China-Taiwan Relations:

- Taiwan is an island territory across the Taiwan Strait, located off the coast of mainland China.

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

- Since then, the PRC observes Taiwan as a traitor province and awaits reintegration with Taiwan, if possible, by peaceful means.

- Simultaneously, the United Nations membership was continued by the ROC maintaining its permanent seat at the UN Security Council (UNSC).

- PRC allied itself with the Union of Soviet Socialist Republics (USSR) and ROC with the US in the cold war further straining the China-Taiwan relations.

- Consequently, two Taiwan Strait crises of the 1950s happened.

Reconciliation of the US with China and the Subsequent Events:

- The US and China reconciled in the 1970s due to the Cold War's shifting geopolitics, so that the growing influence of the USSR could be countered.

- This was followed by the visit of the then US President to the PRC in 1972. Subsequently, ROC was displaced by the PRC as the official representative at the UN.

- Then, "One-China Principle" came into picture.

One-China Principle and its impact:

- This means that the nations who want to have diplomatic relations with the PRC have to recognize the PRC but not the ROC as China, breaking the relations with ROC. Simultaneously, China evolved as a multi-party democracy alongside the reformation of its economic system.

- Since then, the two countries became economically entangled and continuously competing.

How has the standpoint of the US on the Taiwan issue unfolded?

The evolution of the US's stance:

- The Shanghai Communique (1972), the Normalisation Communique (1979) and the 1982 Communique are the three documents outlining the US-China mutual understanding on the Taiwan question.

- As per the 1979 communique, the US accepts the 'one China principle' considering Taiwan, a part of China.

- However, the US started maintaining unofficial relations with Taiwan in the name of people of both the nations.

- In the 1982 communique, China expressed its concerns over the likelihood of continued supply of arms by the US to Taiwan as per the provisions of Taiwan Relations Act (TRA),1979.

- In this way, the US has balanced its recognition of the PRC along with the concerns of Taiwan.

Impact on Taiwan:

- In Taiwan, Democratic People's Party (DPP) has become the most powerful political force in Taiwan catering to the pro-independence constituency in Taiwan. The DPP wants to expand its economic relations away from China.

- China considers Taiwan as a territory with high geopolitical significance as it is centrally located in the First Island Chain between Japan and the South China Sea.

- Throughout this region, military outposts of the US are scattered. Therefore, it would be a significant breakthrough for China in case it takes Taiwan's control.

- But, the chances of a peaceful reunification are very slim.

- Also, the tensions are happening in parallel with the Russo-Ukrainian conflict.

Way Forward

- Considering China's wearing patience and Taiwan's increasingly pro-independence slant, a strong message to the adversary becomes essential in the backdrop of the Russo-Ukrainian conflict. It may have reached the point where strategic ambiguity may be losing its relevance to strategic clarity.

- However, another plausible interpretation can be that this messaging is aimed by the US for eliciting responses and testing the waters to get a feel of China's game plan for the Indo-Pacific.

2.9 Nagorno-Karabakh Region

Recently, protests against possible concessions by Armenia over Nagorno-Karabakh which is disputed with neighbouring Azerbaijan, have increased.

- In September 2020, clashes broke out that rapidly escalated to become the deadliest since the 1990s.

What is Nagorno-Karabakh Region?

- Nagorno-Karabakh is a mountainous and heavily forested region that under international law is recognised as part of Azerbaijan.

- However, ethnic Armenians who constitute the vast majority of the population there reject Azeri rule (the legal system of Azerbaijan).

- After Azerbaijan's troops were pushed out of the region following a war in the 1990s, these ethnic Armenians have been in administrative control of Nagorno-Karabakh, with support from Armenia.

Strategic Significance:

- The energy-rich Azerbaijan has built several gas and oil pipelines across the Caucasus (the region between the Black Sea and the Caspian Sea) to Turkey and Europe.

- Some of these pipelines pass close to the conflict zone (within 16 km of the border). In an open war between the two countries, the pipelines could be targeted, which would impact energy supplies and may even lead to higher oil prices globally.

What is the Genesis of the Conflict?

- Background of the Conflict: The conflict can be traced back to the pre-Soviet era when the region was at the meeting point of Ottoman, Russian and the Persian empires.

- Once Azerbaijan and Armenia became Soviet Republics in 1921, Russia (erstwhile Sovient Union) gave Nagorno-Karabakh to Azerbaijan but offered autonomy to the contested region.

- In the 1980s, when the Soviet power was receding, separatist currents picked up in Nagorno-Karabakh. In 1988, the national assembly voted to dissolve the region's autonomous status and join Armenia.

- However, Azerbaijan suppressed such calls, which led to a military conflict.

Flash Point of Conflict:

- The self-declaration of independence by Nagorno-Karabakh in September 1991 in the backdrop of an imminent collapse of the USSR resulted in a war between Azerbaijan and Nagorno-Karabakh — supported by Armenia.

Ceasefire:

- This clash lasted till a ceasefire agreement was reached in 1994, mediated largely by Russia. Since then, the Organization for Security and Co-operation in Europe (OSCE) Minsk Group co-chaired by the USA, Russia and France have engaged Azerbaijan and Armenia extensively to resolve the conflict.

By that time, Armenia had taken control of Nagorno-Karabakh and handed it to Armenian rebels.

What is the Role of India?

- With Armenia, India has a friendship and cooperation treaty (signed in 1995), which, incidentally, would prohibit India from providing military or any other assistance to Azerbaijan.
- In the case of Azerbaijan, ONGC/OVL has made investments in an oilfield project in Azerbaijan and GAIL is exploring the possibilities of cooperation in LNG.
- Azerbaijan also falls on the International North South Transport Corridor (INSTC) route, connecting India with Russia through Central Asia.
- It can also connect India with Turkey and beyond through the Baku-Tbilisi-Kars passenger and freight rail link.
- Armenia extends its unequivocal support to India on Kashmir issue whereas Azerbaijan not only opposess but also promotes Pakistan's narrative on this issue.
- India does not have a publicly articulated policy for the South Caucasus — unlike "Neighbourhood First", "Act East" or "Central Asia Connect".
- The region has remained on the periphery of its foreign policy radar.

Way Forward

- The conflict is essentially a conflict between two international principles viz. the principle of territorial integrity advocated by Azerbaijan and the principle of the right to self-determination invoked by Nagorno-Karabakh and supported by Armenia.
- India has every reason not to support Azerbaijan's territorial integrity as Azerbaijan has shown scant regard for India's territorial integrity violated by Pakistan in Jammu and Kashmir.
- At the same time, it is difficult for India to publicly endorse Nagorno-Karabakh is right for self-determination in view of the possible repercussions it can have repercussions for India as its adversaries like Pakistan may misuse it not only by making erroneous connections with Kashmir but also re-ignite secessionist movement in certain parts of India.

3. ECONOMY

3.1 Revamping Food Processing Industries

- In order to deal with constraints faced by Food Processing sector and to ensure its overall growth and development across the country, the Ministry of Food Processing industries (MoFPI) has been implementing Central Sector Umbrella Scheme - Pradhan Mantri Kisan SAMPADA Yojana (PMKSY), centrally sponsored PM Formalisation of Micro Food Processing Enterprises Scheme (PMFME) and Central Sector Production Linked Incentive Scheme (PLISFPI).

- Under component schemes of PMKSY, MoFPI provides mostly credit linked financial assistance (capital subsidy) in the form of grants-in-aid to individuals, farmers, Farmer Producer Organizations (FPOs), Entrepreneurs, Cooperatives, Societies, Self Help Groups (SHGs), Private Companies and Central/ State PSUs etc. for setting up of food processing industries/ units/ projects. Ministry provides financial, technical and business support for setting up/ upgradation of micro food processing enterprises under PMFME scheme. PLISFPI is targeted to facilitate expansion of food processing capacity by creating champion brands in Food Processing Sector.

- The data for registered manufacturing sector including food processing sector is brought out by the Ministry of Statistics and Programme Implementation through the Annual Survey of Industries (ASI) and for unregistered/unincorporated enterprises through National Sample Survey (NSS). As per the Annual Survey of Industries 2018-19, food processing sector was ranked 1st in total number of persons engaged in the manufacturing sector.

- The Ministry of Food Processing Industries, through the various component schemes of Pradhan Mantri Kisan SAMPADA Yojana (PMKSY) provide financial assistance for the overall growth and development of food processing sector. Under PMKSY, 582 projects have been completed till 31.1.2022. Grant-in-aid of Rs.3836.76 crore have been approved and Rs.3544.62crore have been released for these projects. Under the completed projects, 180.58 LMT of processing/ preservation capacity has been created. The Ministry also implements the Prime Minister's Formalization of Micro Food Processing Enterprises (PMFME) Scheme, providing financial, technical and business support for upgradation/ setting up of 2 lakh micro units. The PM-FME scheme is implemented on a One District One Product (ODOP) basis. A Product Linked Incentive (PLI) Scheme is being implemented wherein incentives based on sales is provided to create global food champions. Segments of food industry with high growth potential like marine products, processed fruits & vegetables, Ready to Eat/ Ready to Cook products including millet based products, and mozzarella cheese are covered for support. Financial support is also given to small & medium enterprises (SMEs) for organic/ innovative products. The scheme has a component of support for branding and marketing abroad.

- The Government has put in place a liberal and transparent policy for attracting Foreign Direct Investment (FDI) permitting 100% FDI under the automatic route. Also 100% FDI, under

Government approval route, is permitted for trading, including through e-commerce, in respect of food products manufactured or produced in India.

3.2 Signing of the Economic Cooperation and Trade Agreement (ECTA) between India and Australia Enhancing people to people contact leading to generation of additional businesses, significant increase in exports and employment for more than one million

- The Minister of Commerce and Industry, Minster of Consumer Affairs, Food and Public Distribution, and Minister of Textiles, Government of India, Shri Piyush Goyal, and Minister for Trade, Tourism and Investment, Government of Australia, Mr. Dan Tehan, MP, signed the India-Australia Economic Cooperation and Trade Agreement today, in a Virtual ceremony in presence of the Prime Minister of India, Shri Narendra Modi and Prime Minister of Australia, Mr. Scott Morrison.

The salient features of India-Australia ECTA are as follows:

1) The India-Australia ECTA is the first trade agreement of India with a developed country after more than a decade. The Agreement encompasses cooperation across the entire gamut of bilateral economic and commercial relations between the two friendly countries, and covers areas like Trade in Goods, Rules of Origin, Trade in Services, Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) measures, Dispute Settlement, Movement of Natural Persons, Telecom, Customs Procedures, Pharmaceutical products, and Cooperation in other Areas. Eight subject specific side letters covering various aspects of bilateral economic cooperation were also concluded as part of the Agreement.

Impact or benefits:

2) ECTA provides for an institutional mechanism to encourage and improve trade between the two countries. The ECTA between India and Australia covers almost all the tariff lines dealt in by India and Australia respectively. India will benefit from preferential market access provided by Australia on 100% of its tariff lines. This includes all the labour-intensive sectors of export interest to India such as Gems and Jewellery, Textiles, leather, footwear, furniture, food, and agricultural products, engineering products, medical devices, and Automobiles. On the other hand, India will be offering preferential access to Australia on over 70% of its tariff lines, including lines of export interest to Australia which are primarily raw materials and intermediaries such as coal, mineral ores and wines etc.

3) As regards trade in services, Australia has offered wide ranging commitments in around 135 sub sectors and Most Favoured Nation (MFN) in 120 sub sectors which cover key areas of India's interest like IT, ITES, Business services, Health, Education, and Audio visual. Some of the key offers from Australia in the services space include: Quota for chefs and yoga teachers; Post study work visa of 2-4 years for Indian students on reciprocal basis; mutual recognition of Professional Services and Other licensed/regulated Occupations; and Work & Holiday visa arrangement for young professionals. On the other hand, India has offered market access to Australia in around 103 sub-sectors and Most

Favoured Nation in 31 sub-sectors from the 11 broad service sectors such as 'business services', 'communication services', 'construction and related engineering services', and so on. Both sides have also agreed to a separate Annex on Pharmaceutical products under this agreement, which will enable fast track approval for patented, generic and biosimilar medicines.

Timelines:

4) The negotiations for India-Australia ECTA were formally re-launched on 30 September 2021 and concluded on a fast-track basis by the end of March 2022.

Background:

5) India and Australia enjoy excellent bilateral relations that have undergone transformative evolution in recent years, developing along a positive track, into a friendly partnership. This is a special partnership characterized by shared values of a pluralistic, parliamentary democracies, Commonwealth traditions, expanding economic engagement, long standing people-to-people ties and increasing high level interaction. The India-Australia Comprehensive Strategic Partnership initiated during the India-Australia Leaders' Virtual Summit held between Hon'ble Prime Minister of India His Excellency Shri Narendra Modi and Hon'ble Prime Minister of Australia His Excellency Mr. Scott Morrison MP, on 04 June 2020 is the cornerstone of our multi-faceted bilateral relations.

6) Growing India-Australia economic and commercial relations contribute to the stability and strength of a rapidly diversifying and deepening bilateral relationship between the two countries. India and Australia have been each other's important trading partners. These excellent bilateral economic and commercial relations have continued to enhance and deepen over time. Australia is the 17th largest trading partner of India and India is Australia's 9th largest trading partner. India-Australia bilateral trade for both merchandise and services is valued at US$ 27.5 billion in 2021. India's merchandise exports to Australia grew 135% between 2019 and 2021. India's exports consist primarily of a broad-based basket largely of finished products and were US$ 6.9 billion in 2021. India's merchandise imports from Australia were US$ 15.1 billion in 2021, consisting largely of raw materials, minerals and intermediate goods.

7) India and Australia are partners in the trilateral Supply Chain Resilience Initiative (SCRI) arrangement along with Japan which seeks to enhance the resilience of supply chains in the Indo-Pacific Region. Further, India and Australia are also members of the recently formed Quad, also comprising US, and Japan, to further enhance cooperation and develop partnership across several issues of common concerns.

8) The India-Australia ECTA will further cement the already deep, close and strategic relations between the two countries and will significantly enhance bilateral trade in goods and services, create new
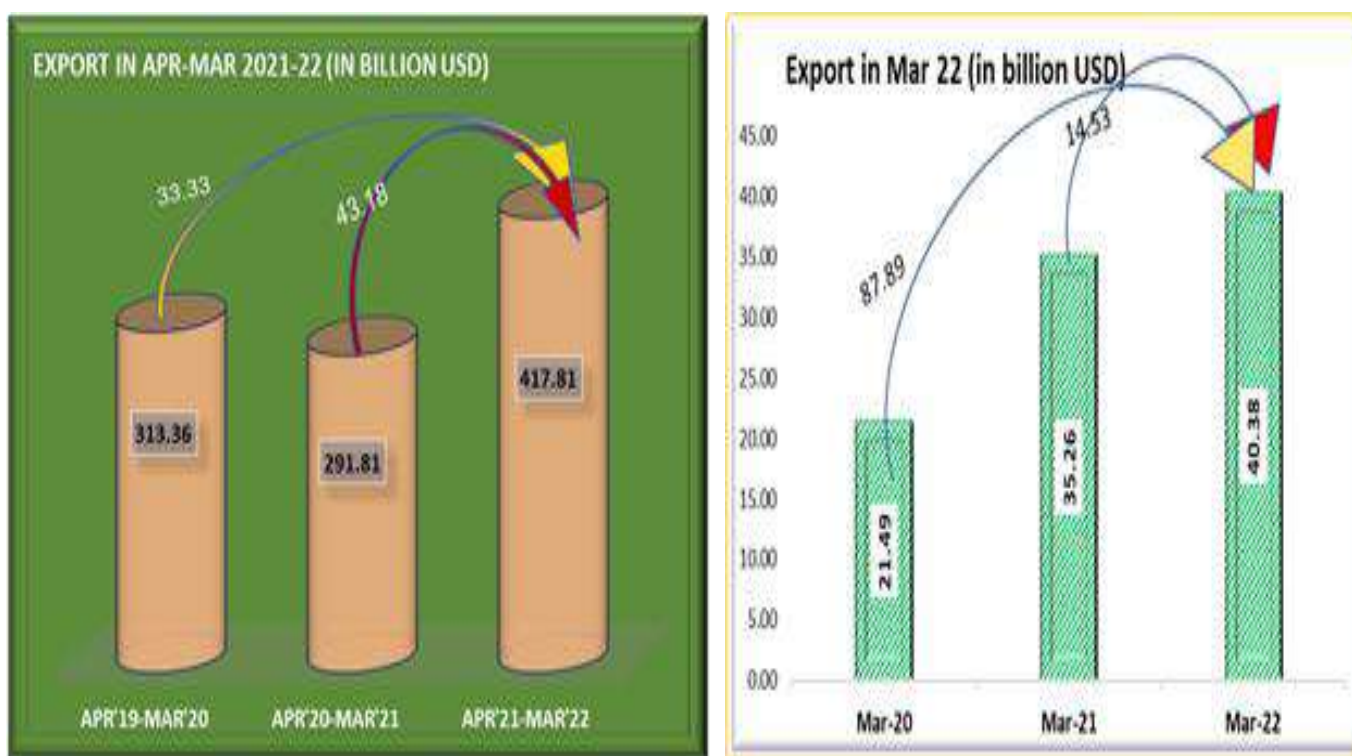
employment opportunities, raise living standards, and improve the general welfare of the peoples of the two countries.

3.3 <u>**India achieves an all-time high annual merchandise exports, touching USD 417.81 billion in FY 2021-22, an increase of 43.18% over USD 291.81 billion in previous fiscal**</u>

- For the first time, monthly merchandise exports exceed USD 40 Billion, reaching USD 40.38 billion in March 2022, an increase of 14.53% over March 2021
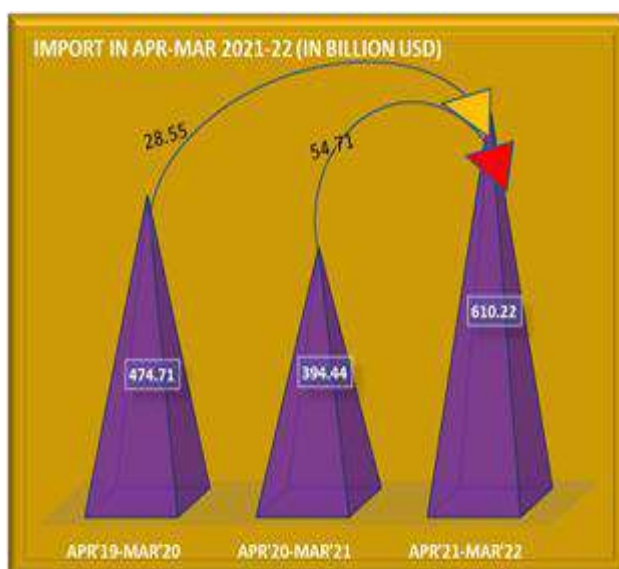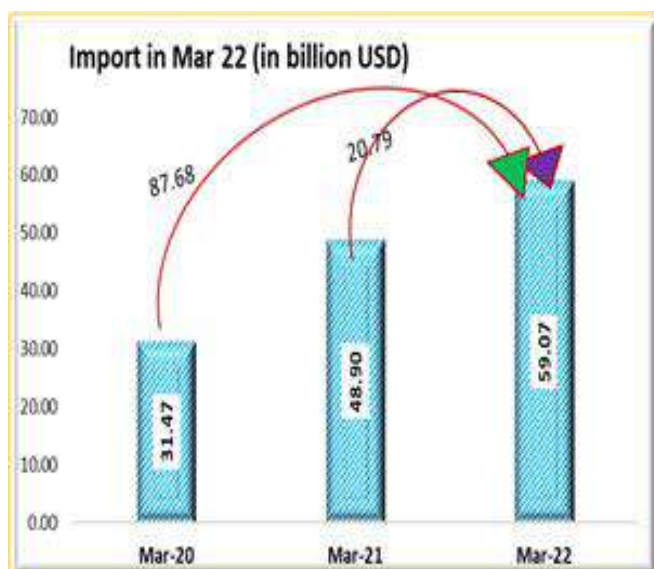
INDIA'S MERCHANDISE TRADE: Preliminary Data March 2022

India achieved an all-time high annual merchandise exports of USD 417.81 billion in FY 2021-22, an increase of 43.18% over USD 291.81 billion in FY2020-21 and an increase of 33.33% over USD 313.36 billion in FY2019-20.

For the first time, India's monthly merchandise exports exceeded USD 40 Billion, reaching USD 40.38 billion in March 2022, an increase of 14.53% over USD 35.26 billion in March 2021 and an increase of 87.89% over USD 21.49 billion in March 2020.

- India's merchandise import in March 2022 was USD 59.07 billion, an increase of 20.79% over USD 48.90 billion in March 2021 and an increase of 87.68% over USD 31.47 billion in March 2020.

- India's merchandise import in April 2021-March 2022 was USD 610.22 billion, an increase of 54.71% over USD 394.44 billion in April 2020-March 2021 and an increase of 28.55% over USD 474.71 billion in April 2019-March 2020.

3.4 Repair, Renovation & Restoration of Water Bodies

- Centrally sponsored scheme "Repair, Renovation & Restoration (RRR) of Water Bodies (WBs)" is a component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) – Har Khet Ko Pani (HKKP) being implemented by Ministry of Jal Shakti. Under the scheme, financial assistance is being provided to the State Governments for renovation, repair and restoration of identified water bodies.

- Based on the proposals received from various States. Many of the works taken up under the scheme include cleaning of traditional water bodies.

- Further, PMKSY was valid till March, 2021. During its extension for the period 2021-22 to 2025-26, Government of India has made significant relaxations in the eligibility for inclusion and funding criteria under the RRR of WBs component, to encourage the States to take up more such works with financial assistance from this Ministry.

- Water being a State subject, it is for the State Governments concerned to take up prevention of encroachment of water bodies in their respective jurisdiction. However, in order to supplement the efforts of the State Governments, Government of India has taken a number of important initiatives for enumeration, conservation and development of water bodies. Details of some of the key such initiatives are given below:

1) In 2019, Jal Shakti Abhiyan was launched by the Government. This was followed in 2021 and 2022, by "Jal Shakti Abhiyan: Catch The Rain" (JSA:CTR) campaign. Focused interventions under these annual campaigns taken up by the Government of India and the State Governments, inter-alia, include renovation of traditional and other water bodies/ tanks, enumeration, geo-tagging and making inventory of all water bodies, and removal of encroachments of tanks/ lakes, and de-silting of tanks.

2) Government has launched the first Census of Water bodies in convergence with the Sixth round of Minor Irrigation Census (reference year 2017-18), under the centrally sponsored scheme- "Irrigation Census". The objective of the scheme is to develop a national database of all water bodies in the country.

3) In the India-WRIS portal, both rural and urban water bodies are being mapped, with each water body having been assigned a unique identification number.

4) Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) has provisions for public works relating to natural resource management, water conservation and water harvesting structures to augment and improve ground water like underground dykes, earthen dams, stop dams, check dams and roof top rain water harvesting structures in public buildings.

5) Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme under Ministry of Housing & Urban Affairs has also taken up development and rejuvenation of water bodies. These projects having estimated cost of Rs.1,878.19 crore are ongoing/completed, with 106 number of water bodies having been rejuvenated under this scheme. However, none of these projects pertains to Odisha. Further, AMRUT 2.0 launched in October, 2021, with a total outlay of Rs. 2,99,000 crore targets to promote circular economy of water through development of city water balance plan for each city focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation.

3.5 Participation of Women Labour Force in Urban and Rural Areas

- Government has taken various steps to improve women's participation in the labour force and quality of their employment. A number of protective provisions have been incorporated in the labour laws for equal opportunity and congenial work environment for women workers. These include enhancement in paid maternity leave from 12 weeks to 26 weeks, provision for mandatory creche facility in the establishments having 50 or more employees, permitting women workers in the night shifts with adequate safety measures, etc.

- Government has taken a decision to allow the employment of women in the aboveground mines including opencast workings between 7 pm and 6 am and in below ground working between 6 am and 7 pm in technical, supervisory and managerial work where continuous presence may not be required.

- The Equal Remuneration Act, 1976 now subsumed in the Code on Wages, 2019 which provides that there shall be no discrimination in an establishment or any unit thereof among employees on the ground of gender in matters relating to wages by the same employer, in respect of the same work or work of similar nature done by any employee. Further, no employer shall make any discrimination on the ground of gender while recruiting any employee for the same work or work of similar nature in the conditions of employment, except where the employment of women in such work is prohibited or restricted by or under any law for the time being in force.

- Further, in order to enhance the employability of female workers, the Government is providing training to them through a network of Women Industrial Training institutes, National Vocational Training Institutes and Regional Vocational Training Institutes.

- More than 27 crore unorganised workers have been registered on eSHRAM portal. Out of which 53% are female workers and 47% are male workers.

3.6 Surplus Labour Force

- The Government is committed to address the issues of labour work force in India, protect and safeguard the interest of the workers with due regard to create a healthy work environment for higher production and productivity. The Government has enacted several labour laws to provide social security, to create healthy working conditions, to ensure occupational safety and minimum wages for the workers.

- Migration of surplus labour force from one place to another place is a continuous process and migrant workers keep moving in search of better livelihood options. Such workforce also keeps shifting from one sector to another depending upon the opportunities (such as better wages, duration and continuity of work). In order to safeguard the interest of the migrant workers, the Central Government had enacted the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Services) Act, 1979 which, inter alia, provides for payment of minimum wages, journey allowance, displacement allowance, residential accommodation, medical facilities and protective clothing. However, the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Services) Act, 1979 has now been subsumed in the Code on Occupational Safety, Health and Working Conditions, 2020.

- The Government has notified four Labour Codes, namely the Code on Wages, 2019; the Industrial Relation Code 2020; the Code on Social Security 2020 and the Occupational Safety, Health and Working Conditions Code 2020 after simplification, amalgamation and rationalization of 29 Central labour Laws, with an objective to strengthen the protection available to workers, including unorganised workers, in terms of statutory minimum wage, social security protection and healthcare of workers.

- Recruitment to fill up the vacancies in Public Sector Undertaking is an on going process and is done in accordance with the relevant Recruitment Rules and guidelines issued by particular PSUs from time to time.

3.7 Centre promoting Ethanol Blended Petrol (EBP) Programme with focus on domestic agriculture sector, environment benefits, reducing import dependency and savings in foreign exchange Centre advanced target of 20% blending of ethanol in petrol from 2030 to 2025-26 following encouraging initiatives in the past

- The Government is promoting Ethanol Blended Petrol (EBP) Programme with broader objectives of providing boost to domestic agriculture sector, environment benefits, reducing import dependency and savings in foreign exchange. Government has also notified the National Policy on Biofuels – 2018 which laid out indicative target of 20% blending of ethanol in petrol and 5% blending of biodiesel in diesel by 2030 in the country. Based on the encouraging initiatives on supply side of ethanol, Government has advanced the target of 20% blending of ethanol in petrol from 2030 to 2025-26.

- The measures taken by the Government for the benefits of ethanol manufacturers inter alia, include permitting multiple sugarcane and grain based feedstock for ethanol production, fixing feedstock wise remunerative ethanol procurement prices, introducing amended Industries (Development and Regulation) Act, 1951 for uninterrupted production, storage and movement of ethanol across the country, bringing ethanol meant for EBP Programme under lowest GST slab rate of 5% to increase production of ethanol and promote EBP Programme and introducing interest subvention schemes during 2018, 2019, 2020 and 2021 for augmentation and enhancement of ethanol production capacity in the country. Oil Marketing Companies (OMCs) have also signed long term ethanol off-take agreements with prospective project proponents to set up dedicated ethanol plants in deficit states.

3.8 Digital Agriculture Mission

- Digital Agriculture Mission is yet to be finalized. However, following activities/initiatives are being taken under Digital Agriculture:

1) The Department has constituted a High Level Task Force, which is in the process of finalizing "India Digital Ecosystem of Agriculture (IDEA) report. Task Force invited comments from subject experts, farmers, Farmer Producer Organizations (FPOs) and general public and considered them. Based on this, the Department is in the process of finalizing a framework for creating Agristack in the country, which will serve as a foundation to build innovative agri-focused solutions leveraging digital technologies to contribute effectively towards increasing the income of farmers and improve efficiency of the Agriculture sector in the country. Once finalized, this can serve as a foundation to build innovative agri-focused solutions leveraging technologies to contribute effectively towards increasing the income of farmers and improve farm efficiency/efficiency of the Agriculture sector in the country. In this regard, leading Technology/Agri-tech/Start-Ups companies were identified and invited to collaborate with the Government of India and develop Proof of Concepts (PoC) based on data of select Districts/ Villages. A public call through the Department's website was issued inviting proposals for Memorandum of Understanding (MoU). Companies were invited to sign MoU on purely pro bono basis and develop the PoCs. These PoCs will help in understanding the uses of Agristack and service & solutions that can be built using available data and some of them, if found beneficial to the farmers will be scaled up at National level. In this regard, the Government has signed MoU with leading

Technology/Agri-tech Players & Start-ups for working on Proof of Concepts (PoCs) in the select Districts/Villages.

2) Under National e-Governance Plan in Agriculture guideline, funds are released to the States/Union Territories for the projects involving use of modern information technologies such as such as Artificial Intelligence & Machine Learning, Block Chain Technology, Internet of Things, Robotics etc., and for customization/shifting of web & mobile applications already developed by the States, to the platform to be developed using digital technologies.

3) Various mobile applications including KisanSuvidha have also been developed to facilitate dissemination of information to farmers on the critical parameters viz., Weather, Market Prices, Plant Protection, Agro-advisory, Extreme Weather Alerts, Input Dealers (of Seed, Pesticide, Fertilizer, Farm Machinery), Soil Health Card, Cold   Storage & Godowns, Soil Testing Laboratories and Veterinary Centre & Diagnostic labs, Crop Insurance Premium Calculator and the Government schemes.

3.9 **High-Tech Services in Agriculture**

- Government has taken following steps to provide digital and hi-tech services which will open up opportunities for Private Entrepreneurs:

1) The Department has constituted a high level Task Force, which is in the process of finalizing a report on India Digital Ecosystem of Agriculture (IDEA) which would lay down the architecture of Digital AgriStack with unique ID for farmers, and standards for interoperability between various data streams in the Agristack. This would open up possibilities for developing services and solutions by Private Entrepreneurs.

2) Provisions are being made under Agriculture Infrastructure Fund (AIF) to fund private agritech players.

3) Government of India has made an announcement in the Union Budget 2022 regarding the setting up of a fund routed through NABARD under a co-investment model to finance startups in the agritech space.

4) Government is providing financial assistance through Sub Mission on Agricultural (SMAM) to Farm Machinery Training and Testing Institutes (FMTTIs), Indian Council for agricultural Research (ICAR) Institutes, Krishi Vigyan Kendra (KVK), Farmer Producer Organizations (FPOs) and State Agricultural Universities (SAUs) for drone demonstrations and for establishment/upgrading the Custom Hiring Centres (CHCs)/ Hi-Tech Hub for providing agricultural services by using drone technology. Drone service providers can also avail benefits of Agriculture Infrastructure Fund.

5) Rashtriya Krishi Vikas Yojna (RKVY) is a central Sponsored scheme. State can implement projects under RKVY in PPP mode by approving such projects by the State Level Sanctioning Committee (SLSC) of the state. List of projects approved by some states in PPP mode under RKVY is given at Annexure –I.

6) A component called "Innovation and Agri-Entrepreneurship Development" has been launched under Rashtriya Krishi Vikas Yojana (RKVY-RAFTAAR) in 2018-19 with the objective of promoting

innovation and agri-entrepreneurship by providing financial support and nurturing the incubation ecosystem. Under this programme, start-ups are encouraged to use innovative technologies to resolve challenges faced in agriculture and allied sectors. A total of 799 start-ups have been selected in various areas of agriculture and allied sectors under this programme for providing financial support through Knowledge Partners and Agri Business Incubators appointed by government for implementation of this programme. List of KPs and R-ABIs is given at annexure-II.

7) The Indian Council of Agriculture Research (ICAR) has been supporting Agri-based startups under the project called National Agriculture Innovation Fund (NAIF) initiated in year 2016-2017. It has two components viz. I. Innovation Fund; II. Incubation Fund and National Coordinating Unit (NCU)

3.10 RASHTRIYA GOKUL Gram Mission

- Under Rashtriya Gokul Mission funds have been released for setting up of 16 Gokul Grams as Integrated Indigenous Cattle Development Centres with the aim of conservation and development of indigenous bovine breeds in a scientific and holistic manner. The objectives of Gokul Gram are as under:-
  1) To promote indigenous cattle rearing and conservation in a scientific manner.
  2) To enhance productivity of indigenous breeds and increase economic returns from animal products in a sustainable manner.
  3) To propagate high genetic merit bulls of indigenous breeds.
  4) To encourage appropriate technology for use of Draught Animal Power.
  5) To provide balanced nutrition and integrated animal health care.
  6) To optimize modern Farm Management practices and promote Common Resource Management.
  7) To promote Green Power and Eco technology.

  The following facilities have been provided in the Integrated Indigenous Cattle Centres- Gokul Grams:
  i) Cow and calf sheds;
  ii) Bio Gas Plant;
  iii) Agricultural equipments;
  iv) Urine distillation plant;
  v) Compost and Vermicompost pits;
  vi) Semen and liquid nitrogen and other essential infrastructure.

- The Integrated Indigenous Cattle Centres-Gokul Grams has been made viable and sustainable through sale of milk, value added milk products, sale of high genetic merit stock of indigenous breeds produced at Gokul Grams in the form of bulls, heifers and calves to farmers, breeders and Institutions etc.

3.11 <u>Government incentives and support for Solar Energy generation and usage</u>

- For promoting solar energy in the residential sector, the Ministry of New and Renewable Energy is implementing Rooftop Solar Programme Phase-II. Under this Programme 4000 MW rooftop solar (RTS) capacity addition is targeted in residential sector through Central Financial Assistance (CFA).

- CFA up to 40% of the benchmark cost is provided for RTS projects upto 3 kW capacity and up to 20% for RTS system capacity beyond 3 kW and up to 10 kW for individual households. For Group Housing Societies/Residential Welfare Associations (GHS/RWA), CFA is limited to 20% for RTS plants for supply of power to common facilities maximum 500 kW capacity.

In addition, Government has taken several steps to promote solar energy in the country. These include:

- Permitting Foreign Direct Investment (FDI) up to 100 percent under the automatic route,

- waiver of Inter State Transmission System (ISTS) charges for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025,

- declaration of trajectory for Renewable Purchase Obligation (RPO) up to the year 2022, setting up of Ultra Mega Renewable Energy Parks to provide land and transmission to RE developers on a plug and play basis, schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), 12000 MW CPSU Scheme Phase II, etc.,

- laying of new transmission lines and creating new sub-station capacity under the Green Energy Corridor Scheme for evacuation of renewable power, notification of standards for deployment of solar photovoltaic system/devices, setting up of Project Development Cell for attracting and facilitating investments,

- Standard Bidding Guidelines for tariff based competitive bidding for procurement of Power from Grid Connected Solar PV and Wind Projects.

- Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators.

- Conducting skill development programmes to create a pool of skilled manpower for setting up, operation and maintenance of RE projects.

3.12 <u>Steps by Government to increase the power generation across the country</u>

The following steps are taken to increase the power generation:

1) Thermal Projects totaling to 28460 MW are under construction in the country.

2) Presently, there are 36 Large Hydro Projects (above 25 MW) totaling to 12663.5 MW which are under implementation in the country.

3) Nuclear capacity amounting to 8700 MW are under construction and 7000 MW nuclear power projects have been accorded Administrative Approval and Financial Sanction.

4) Hon'ble Prime Minister at Glasgow COP26 Summit has set a target to achieve 500 GW installed capacity from non-fossil fuel based capacity (Hydro, Nuclear, Solar PV, Wind, Biomass etc.) by 2030.

- The robust national grid is facilitating transfer of power from surplus regions to deficit regions without any transmission constraints. The inter-regional transmission capacity has been increased from 35,950 MW as on 31.03.2014 to 1,12,250 MW as on 28th February, 2022. The capacity of the electricity Grid is being expanded on a continuous basis matching with the growth in electricity generation and electricity demand.

- The transmission system are mostly built through tariff based competitive bidding route. However, the Central Government is also funding Transmission schemes worth around Rs.16,000 crore in UT of J&K, UT of Ladakh and North Eastern States. The intra-State transmission lines are built by the State transmission companies.

- In order to meet the growing demand of the electricity consumers, the distribution network also requires upgradation and augmentation on continuous basis, which are undertaken by the distribution companies. The Central Government is also assisting the States for creation/argumentation of distribution infrastructure through its various schemes including Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), and Revamped Distribution Sector Scheme (RDSS) to enable them to achieve the objective of providing uninterrupted power supply to all consumers. The new scheme RDSS has an outlay of Rs.3,03,785 crore and an estimated gross budgetary support of Rs.97,631 crore from Central Government. RDSS aims at bringing down losses of distribution utilities.

4. ENVIRONMENT

4.1 Geography and Environment

Cyclone Asani

- Cyclonic Storm Asani was a strong tropical cyclone from the Bay of Bengal that made landfall in Andhra Pradesh in May 2022.

- It is the first named storm of the 2022 North Indian Ocean cyclone season.

- The name Cyclone Asani has been given by Sri Lanka. It means 'wrath' in Sinhalese.

- Typically, tropical cyclones in the North Indian Ocean region (Bay of Bengal and Arabian Sea) develop during the pre-monsoon (April to June) and post-monsoon (October to December) periods.
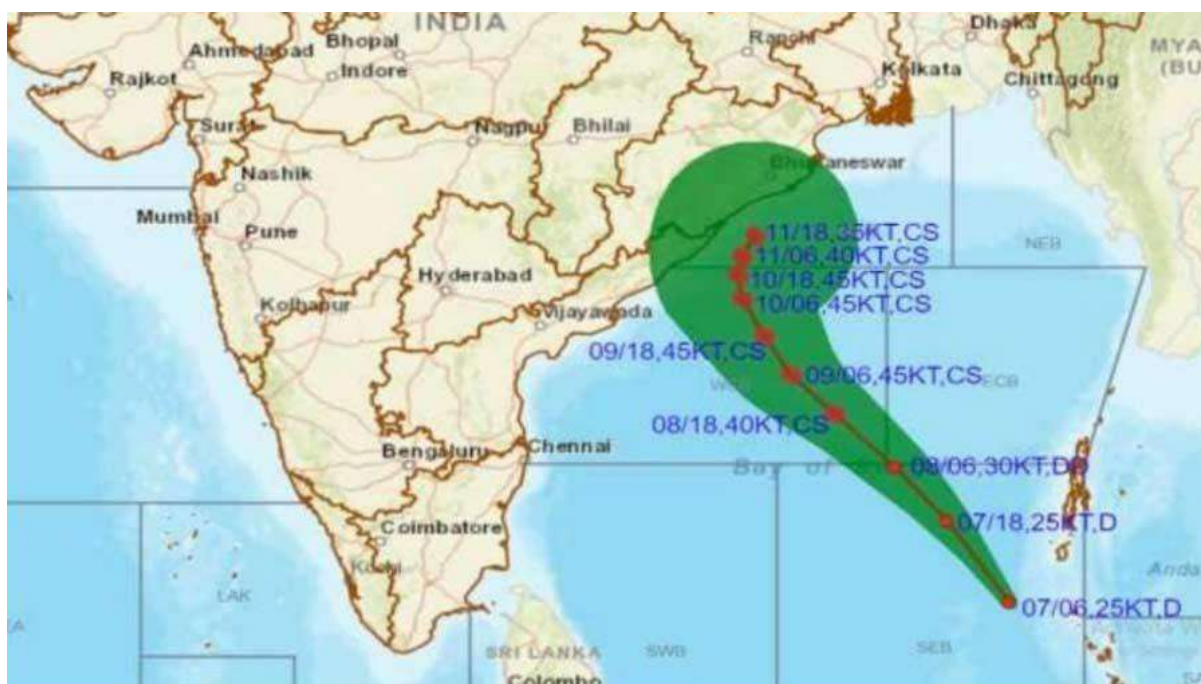

Image: Path of Cyclone Asani

What are the Tropical Cyclones?

- A tropical cyclone is an intense circular storm that originates over warm tropical oceans and is characterized by low atmospheric pressure, high winds, and heavy rain.

- A characteristic feature of tropical cyclones is the eye, a central region of clear skies, warm temperatures, and low atmospheric pressure.

- Storms of this type are called hurricanes in the North Atlantic and eastern Pacific and typhoons in Southeast Asia and China. They are called tropical cyclones in the southwest Pacific and Indian Ocean region and Willy-willies in north-western Australia.

- Storms rotate counter clockwise in the northern hemisphere and clockwise in the southern hemisphere.

Favourable conditions for the formation of tropical cyclones:

- Large sea surface with temperature higher than 27° C.
- Presence of the Coriolis force.
- Small variations in the vertical wind speed.
- A pre-existing weak low- pressure area or low-level-cyclonic circulation.
- Upper divergence above the sea level system.

Why and how Cyclones are named?

- Cyclones are named by the regional specialised meteorological centres (RSMCs) and Tropical Cyclone Warning Centres (TCWCs) in every ocean basin across the world.
- There are six RSMCs in the world that also includes the India Meteorological Department (IMD), and a total of five TCWCs.
- As an RSMC, the IMD names the cyclones which develop over the north Indian Ocean, including the Bay of Bengal and Arabian Sea, after following a standard procedure.
- The IMD is also mandated to issue advisories to 12 other countries in the region on the development of cyclones and storms.
- These include Bangladesh, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates, Yemen.
- It helps the scientific community, the media and disaster managers to create awareness of the development, for rapidly disseminating warnings to increase community preparedness and remove confusion where there are multiple cyclonic systems over a region.

4.2 15th COP of United Nations Convention to Combat Desertification (UNCCD)

- The fifteenth session of the Conference of the Parties (COP15) of the United Nations Convention to Combat Desertification (UNCCD) took place in Abidjan, Côte d'Ivoire, from 9 to 20 May 2022.
- The COP15 theme, 'Land. Life. Legacy: From scarcity to prosperity', is a call to action to ensure land, the lifeline on this planet, continues to benefit present and future generations.
- COP15 will bring together leaders from governments, the private sector, civil society and other key stakeholders from around the world to drive progress in the future sustainable management of one of our most precious commodities: land.
- Land is the bedrock of a healthy, productive society, and COP15 will explore links between land and other key sustainability issues. These issues will be discussed during the high-level segment on 9-10 May 2022, including a Heads of States Summit, high-level roundtables and interactive dialogue sessions, as well as numerous other special and side events.

- COP 15 is a key moment in the fight against desertification, land degradation and drought. It will build on the findings of the second edition of the Global Land Outlook and offer a concrete response to the interconnected challenges of land degradation, climate change and biodiversity loss as we step into the UN Decade on Ecosystem Restoration.

- Drought, land restoration, and related enablers such as land rights, gender equality and youth empowerment are among the top items on the Conference agenda. Through its decisions adopted by UNCCD's 197 Parties, COP15 is expected to galvanize sustainable solutions for land restoration and drought resilience, with a strong focus on future-proofing land use

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About UNCCD:

- Established in 1994.
- It is the sole legally binding international agreement linking environment and development to sustainable land management.
- It is the only convention stemming from a direct recommendation of the Rio Conference's Agenda 21.
- Focus areas: The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found.

4.3 Fourth edition of the International Conference on Disaster Resilient Infrastructure

- PM Narendra Modi addressed the inaugural session of fourth edition of the International Conference on Disaster Resilient Infrastructure.

- The Prime Minister talked about the importance of infrastructure in unleashing the human potential and said that damage to infrastructure leads to lasting damage for generations. In the context, the Prime Minister asked "with modern technology and knowledge at our disposal, can we create resilient infrastructure that is built to last?" Recognition of this challenge under-pins the creation of the CDRI, he said.

- He also noted that the coalition has expanded and made valuable contributions. He mentioned the initiative on 'Infrastructure for Resilient Island States' that was launched at COP-26 and CDRI's work on Resilient Airports studying 150 airports around the world.

- The 'Global Assessment of Disaster Resilience of Infrastructure Systems' that is being led by CDRI will help create global knowledge that would be immensely valuable, Shri Modi informed.

- The Prime Minister said that in order to make our future resilient we have to work towards a **'Resilient Infrastructure Transition'**. Resilient infrastructure can also be the centrepiece of our

wider adaptation efforts. "If we make infrastructure resilient, we prevent disasters not only for ourselves but for many future generations"

What is disaster-resilient infrastructure?

- Disaster resilient infrastructure is any infrastructure that is strategically designed to withstand the impact of a natural disaster like a flood, earthquake, etc.
- Examples include elevated foundations that can keep a building out of floodwaters or earthquake-proof materials and foundations that will stop a building from collapsing.

Need for CDRI:

- According to Sendai framework, every $1 spent in disaster risk reduction leads to gain of $7. But developing countries face the dilemma of balancing economic investment for development vs disaster resilient infrastructure.
- CDRI could fill this gap of funds and technology and help developing countries to build disaster-resilient Infrastructure.
- Suppose a disaster strikes a country, the affected nation could approach CDRI for technical and financial help, thus shielding it from excessive damage and devastation.
- Post-calamity resuscitation and reconstruction to strengthen local infrastructure and soften the blow of the next disaster, is a farsighted approach.
- It can only work if there is domestic political will, which is reinforced at the multilateral level through CDRI

About CDRI

- The Coalition for Disaster Resilient Infrastructure (CDRI) is a partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions that aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.
- CDRI promotes rapid development of resilient infrastructure to respond to the Sustainable Development Goals' imperatives of expanding universal access to basic services, enabling prosperity and decent work.

The following are CDRI's strategic priorities:

- Technical Support and Capacity-building: This includes disaster response and recovery support; innovation, institutional and community capacity-building assistance; and standards and certification.
- Research and Knowledge Management: This includes collaborative research; global flagship reports; and a global database of infrastructure and sector resilience.

Advocacy and Partnerships: This includes global events and initiatives; marketplace of knowledge financing and implementation agencies; and dissemination of knowledge products.

4.4 Carbon Pricing

- Pennsylvania State of US became the first fossil fuel producing state in the US to adopt a carbon pricing policy, as USA administration is attempting a less direct approach — known as the social cost of carbon, to bring down carbon emissions in the country.

What is Carbon Pricing?

- Carbon pricing is an instrument that captures the external costs of greenhouse gas (GHG) emissions—the costs of emissions that the public pays for, such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise—and ties them to their sources through a price, usually in the form of a price on the carbon dioxide (CO_2) emitted.
- There is a growing consensus among both governments and businesses on the fundamental role of carbon pricing in the transition to a decarbonized economy.
- The success of carbon pricing at national and regional levels has encouraged development of international carbon markets.
- The Paris Agreement includes provisions that would allow countries to cooperate to achieve their NDCs, specifically through carbon pricing to meet mitigation commitments.
- Carbon prices now exist in 46 countries, covering about 22 percent of the carbon pollution that humans release each year.

India's approach towards Carbon Pricing

India does not have an explicit carbon price or a market-based mechanism such as cap-and-trade. It does, however, have an array of schemes and mechanisms that put an implicit price on carbon.

Perform, Achieve and Trade (PAT) Scheme:

- Under this scheme, energy intensive units from industrial sectors with high emissions are assigned specific energy reduction targets to be met by implementing energy-efficient technologies. Those unable to meet the targets may purchase ESCerts through a centralised online trading mechanism hosted by the Indian Energy Exchange (IEX).

Coal Cess:

- In 2010, the government of India introduced a tax on coal, to be levied as excise duty on items listed in the tenth schedule to the Finance Act, 2010.
- Renewable Purchase Obligations (RPO) and Renewable Energy Certificates (REC): To provide a fillip to India's growing renewable energy sector, all electricity distribution licensees are required to

purchase or produce a minimum specified quantity of their requirements from renewable energy sources.

- Internal Carbon Pricing (ICP): Over the past few years, there has been remarkable support for carbon pricing by the private sector under ICP.

4.5 Grey Slender Loris

Recently, scientists from the Salim Ali Centre for Ornithology and Natural History (SACON) in Coimbatore carried out a survey of Grey slender loris populations in Tamil Nadu's Dindigul forest division.

- Slender Loris generally inhabits dry and drought-prone areas of Dindigul district of Tamil Nadu. It is found in acacia and tamarind-dominated thorn and scrub forests near cultivated fields.
- Of the six species of Lorisinae, the Loris lydekkerianus is found in and around the Ayyalur, Alagarkovil, Manapparai, Sirumalai and Kadavur areas in Tamil Nadu.
- The slender loris is a nocturnal animal. It is also a slow-moving animal. It comes down into the bushes to feed and crosses open stretches of ground to enter isolated groves or to cross from one tree to another.
- Generally, it sleeps by day, hiding among foliage or in a hole or crevice. It starts moving from its resting place by dusk.
- Though it is insectivorous, it is fond of lantana berries also. It eats insects, dragonflies, lizards, eggs, small birds and tree frogs.
- Commonly found in the tropical scrub and deciduous forests as well as the dense hedgerow plantations bordering farmlands of Southern India and Sri Lanka, the Slender Loris is a small, nocturnal primate. It prefers to inhabit thick, thorny bushes and bamboo clumps where it can evade predators and also find insects, which is the main diet.

- IUCN has listed them as Endangered, whereas they are listed under the Schedule I of the Wildlife (Protection) Act of India, 1972, according them the highest level of legal protection.
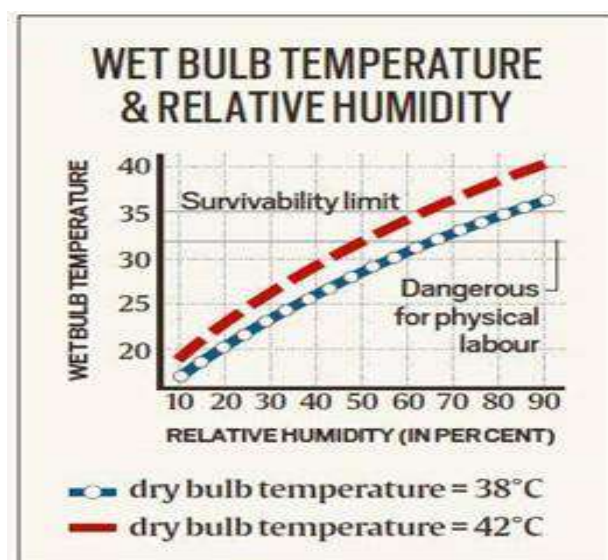
4.6 Role of Humidity in Extreme Heat

- The recent IPCC report AR6 has emphasised that humidity is also very important while estimating the physiological stress that extreme heat puts on the human body.

Why is humidity such a critical factor while measuring heat exposure?

- Humans lose heat generated within their body by producing sweat that evaporates on the skin. The cooling effect of this evaporation is essential in maintaining a stable body temperature.
- As humidity rises, sweat does not evaporate —just like clothes take a long time to dry in humid locations – and makes it difficult to regulate body temperature. This is why we feel more discomfort in humid places.
- A wet bulb / dry bulb reading measures dew point, relative humidity and evaporation rate. The report mentions that sustained exposures to wet bulb temperatures above 35°C are fatal, while sustained exposures to wet bulb temperatures above 32°C are dangerous for intense physical activity.
- There has been a growing concern about the 35°C threshold and whether parts of South Asia will become "unsurvivable" in the coming years. But, the humidity required to reach wet bulb temperatures in excess of 35°C over land is exceedingly difficult to achieve.
- Wet bulb temperatures in excess of 35°C have been observed in Sindh in Pakistan, but such conditions occur once every three to four years, and probably for a few hours. This fails to meet the criteria of "sustained exposure".
- We don't observe such conditions in the current climate, but can become a phenomenon in future climates. However, the research that backs the AR6 also suggests that we are unlikely to experience sustained exposure to wet bulb temperatures beyond the threshold of survivability.

What is "Dry bulb" and "Wet bulb temperature"?

- Along with "dry bulb" temperature that is usually measured using a regular thermometer, an alternative metric known as the "wet bulb temperature" is used to measure exposure to extreme heat.
- The dry-bulb temperature (DBT) is the temperature of air measured by a thermometer freely exposed to the air, but shielded from radiation and moisture.
- Wet-bulb temperature (WBT) is a limit that considers heat and humidity beyond which humans cannot tolerate high temperatures.
- The wet bulb temperature is usually lower than the dry bulb temperature, and the difference between the two increases dramatically as the air becomes dry.
- As the air gets saturated and relative humidity increases, the difference narrows indicating high humidity in the atmosphere.
- Relative humidity is the ratio of the amount of water vapor actually present in the air to the greatest amount possible at the same dry bulb temperature before saturation.

4.7 **Waste Water Management**

- The National Mission for Clean Ganga (NMCG) in association with APAC News Network virtually organised the 6th Edition of the monthly 'Webinar with Universities' series on 'Igniting Young Minds, Rejuvenating Rivers'.
- The theme for the webinar was 'Waste Water Management.'

What is waste water?

- Wastewater is any water that requires cleaning after it is used. This includes water that has been used for laundry, bathing, dishwashing, toilets, garbage disposals, and industrial purposes. Wastewater also includes rainwater that has accumulated pollutants as it runs into oceans, lakes, and rivers. Pollutants are unwanted chemicals or materials that contaminate air, soil, and water.
- The goal of wastewater management is to clean and protect water. This means that water must be clean enough so that it can be used by people for drinking and washing, and by industry for commercial purposes. It also must be clean enough to release into oceans, lakes, and rivers after it has been used.

Wastewater is usually divided into two major groups:

- o Point source wastewater and non-point source wastewater. Point source wastewater includes wastewaters that enter natural waters (such as lakes, rivers, and oceans) from defined locations.
- o The most common point sources are sanitary sewers and storm drains.
- o Non-point source wastewater is wastewater that is not connected to a specific source

Wastewater? From Waste to Resource

- An important paradigm shift is necessary at multiple levels to advance sustainable sanitation services toward a circular economy in which wastewater is considered a valuable resource rather than a liability. Energy, clean water, fertilizers, and nutrients can be extracted from wastewater—and used to help achieve the SDGs.

Maya's Pit viper: New species of venomous snake

- A new venomous green snake named Trimeresurus mayaae or Maya's Pit viper was discovered at Umroi Military station in Ri-Bhoi district of Meghalaya.

- The snake measures about 750 mm in length. It looked very similar to Pope's Pit Viper but the colour of the eyes was different.

- Maya's pit snake and the Pope's Pit Viper have very different hemepenis, the copulatory organ.

- According to herpetologists, the new species was relatively common in Meghalaya, Mizoram and even in Guwahati.

Significance of the discovery:

- In India, around 1.2 million people have lost their lives owing to snakebite and many more have lost their limbs in the last two decades.

- Venom is a complex protein, mostly typical to a species. Thus unravelling a new species will help understand its venom and its impact on human life and perhaps will help save lives,

About Pit Vipers

- The Crotalinae sub family is commonly known as pit vipers. These are venomous vipers found in Eurasia and the Americas.

- They are distinguished by the presence of a heat-sensing pit organ located between the eye and the nostril on both sides of the head. This helps them to accurately aim and strike at their warm-blooded prey.

- They may be terrestrial, arboreal, or aquatic. Some species lay eggs; others produce live young.

- Russell's Viper and Saw-scaled Viper are the two most venomous viper species found in India and members of the big four poisonous and deadliest snakes in India. These snake species are responsible for the majority of snakebites in India.

5. SCIENCE & TECHNOLOGY

5.1 CSIR's 'Kisan Sabha' & 'Gur Bhatti'- an initiative for rural development

- In the wake of the COVID-19 epidemic, the Council Of Scientific And Industrial Research–National Institute of Science Communication and Policy Research (CSIR-NIScPR) has initiated a massive initiative to disseminate CSIR technology, 'Kisan Sabha' & 'Gur Bhatti' for the creation of livelihood prospects in rural areas.

- With this objective of rural development, a farmer-industry-scientist meeting was held on 30 May 2022 at Lovraj Auditorium, CSIR-IIP Dehradun to discuss all the opportunities and challenges and to also distribute the Kisan Sabha App and Gur Bhatti Technology to farmers.

About Kisan Sabha App

- Kisan Sabha strives to give farmers the most cost-effective and timely logistics support while increasing their profit margins by avoiding the influence of middlemen and connecting directly with institutional buyers. It would also assist in delivering the best market rates for crops by evaluating nearby mandis and reserving freight vehicles at the lowest cost, hence providing maximum profit to farmers.

- To identify the many difficulties and gaps in the current environment, a complete primary study was conducted in which 500+ farmers were questioned, and a 6-day long survey with traders, transporters, and farmers was conducted in Asia's largest AzadpurMandi. The Kisan Sabha App was created based on this research and the current state of affairs. The most important feature of this application is that it is available in 12 regional languages.

- The Kisan Sabha App has been downloaded by over 8 lakh farmers and other stakeholders. Furthermore, 3000 SHGs have joined this App.

About Gur Bhatti Technology

- The Gur Bhatti technology developed by the CSIR-Indian Institute of Petroleum pertains to an enhanced design of a jaggery-making plant (Gur Bhatti) that results in a 15% increase in daily jaggery production capacity and a roughly 25% reduction in fuel (bagasse) consumption.

- Jaggery production is a famous rural Indian cottage industry. Gur and Khandsari are two significant agro-processing industries in our country's rural sector. Gur bhattis are typically little bhattis made by local artisans and operated by rural communities but the Jaggery making industry has been struggling for its existence due to the heavy pollution and low profitability.

- CSIRIndian- Institute of Petroleum has taken an initiative to revive the industry through its improved Jaggery-making plant design. The low-cost solutions used in the modified plant design lowered pollutants significantly while also improving the facility's total thermal efficiency.

5.2 INS Surat and INS Udaigiri

- On 17 May 2022, the nation witnessed a landmark event in the history of indigenous warship building when two frontline warships of the Indian Navy, Surat, a Project 15B Destroyer, and Udaygiri, a Project 17A Frigate were launched.

INS Surat: The next-generation stealth destroyers of Indian Navy

- Indian Navy's 'Surat' is a next-generation stealth guided-missile destroyer, which is being built at the Mazgaon Docks Ltd, Mumbai under Project 15B. The destroyer is the fourth ship under the Make-in-India project which marks a significant makeover of the P15A (Kolkata Class) Destroyers. Interestingly, the ship is named after the commercial capital of Gujarat, which is also the second-largest commercial hub of western India after Mumbai.

- Aligned with the city's rich maritime & ship-building history, the ship Surat has been built using the 'Block construction methodology', which involves hull construction at two different geographical locations, which was joined together at MDL, Mumbai. Previously, the first ship of this class was commissioned in 2021. The second and third ships have also been launched and are at different stages of outfitting/ trials.

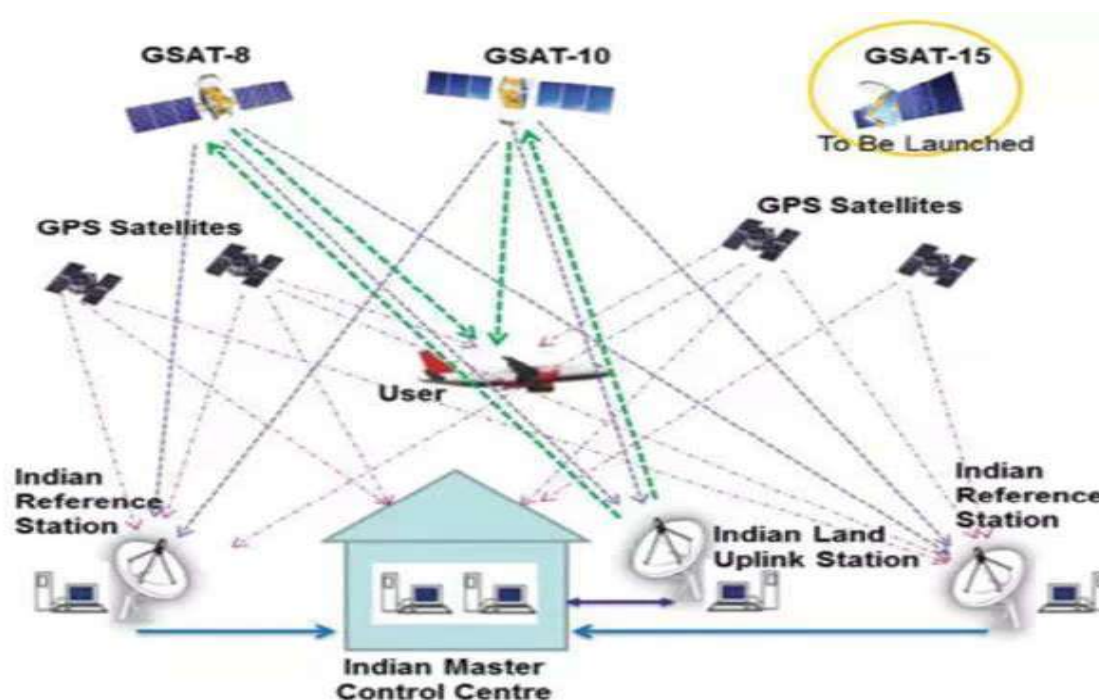**INS Udaygiri: The stealth frigate of Indian Navy**

- Named after a mountain range in the state of Andhra Pradesh, 'Udaygiri' is the third ship of Project 17A Frigates. The Shivalik Class frigate has been equipped with improved stealth features, advanced weapons & sensors, and platform management systems. The ship is the reincarnation of erstwhile 'Udaygiri', the Leander Class ASW Frigate, which saw numerous challenging operations in its

illustrious service to the nation, which spanned over three decades from 18 February 1976 to 24 August 2007.

- Under the P17A program, a total of seven ships, with 04 at Mazgaon Docks Ltd (MDL) and 03 at Garden Reach Shipbuilders & Engineers (GRSE) are under construction for the Indian Navy. Notably, numerous novel concepts and technologies like Integrated Construction, Mega Block Outsourcing, and Project Data Management/ Project Lifecycle Management (PDM/PLM) among others have been adopted for the first time in indigenous Warship Design and Construction in this project. The first two ships under P17A Project were launched in 2019 and 2020 at MDL and GRSE respectively.

- It is important that the 15B and P17A project ships have been designed in-house by the Directorate of Naval Design (DND), which has been the fountainhead for all warship design activities in India. Importantly, during the building phase at the Shipyard, around 75% of the orders for equipment and systems were placed from domestic firms including MSMEs, which is a true testament to 'Aatmanirbhar Bharat' initiative.

5.3 GAGAN (GPS Aided GEO Augmented Navigation)

- Accomplishing a major milestone in the field of air navigation services, the Airports Authority of India has successfully conducted a light trial using an indigenous satellite-based augmentation system (SBAS) named GAGAN (GPS Aided GEO Augmented Navigation) at the Kishangarh airport in Rajasthan. This is counted as a major feat as India has become the first country in Asia Pacific Region to have satellite-based landing procedure.

Apart from India's GAGAN, there are only three Space-Based augmentation systems available in the world namely – the US (WAAS), Europe (EGNOS) and Japan (MSAS).

All about GAGAN

- Acronym for GPS Aided Geo Augmented Navigation (GAGAN), is a Space-Based Augmentation System that is developed to provide the best possible navigational services over Indian FIR (Flight Information Region) with the capability of expanding to neighbouring FIRs.

- Simply put, GAGAN is a system of satellites and ground stations that provide GPS signal corrections, therefore giving better position accuracy. Since GPS alone does not suffice ICAOs (International Civil Aviation Organisation) navigational requirements for accuracy, integrity and availability; GAGAN is responsible for rectifying GPS signal errors that are caused by Ionospheric disturbances, timing and satellite orbit errors. Further, it provides vital information regarding the health of each satellite.

- In 2015, GAGAN System was certified by DGCA (Directorate General for Civil Aviation) for approach with Vertical Guidance (APV 1) and en-route (RNP 0.1) operations.

What is LPV?

- As per the official release, Indigo Airlines using its ATR aircraft has flown an Instrument Approach Procedure (IAP) with LPV minima of 250ft, using GAGAN Service. The tests at Kishangarh Airport were performed as part of initial GAGAN LPV flight trials along with the DGCA team on- board. After the final approval by DGCA, the procedure will be available for the usage of commercial flights. Lowering the decision height up to 250 ft provides a substantial operational benefit in poor weather and low visibility conditions. Thus, any airport which hitherto would require higher visibility minima will be able to accept aircraft benefitting remote airports which are devoid of precision approach capability equipment.

- LPV (Localiser Performance with Vertical Guidance) is a Satellite-Based Procedure that has been used by the aircraft for landing purposes at Kishangarh Airport (Rajasthan). The highlight of LPV is that it has the capability to make the landing at airport easier that are not equipped with expensive Instrument landing Systems, which includes many small regional and local airports.

Gagan Message Service (GMS)

- AAI in collaboration and coordination with Indian National Centre for Ocean Information Services (INCOIS) has come up with GAGAN Message Service (GMS). This will aid in extending alert messages to fishermen, formers, and disaster-affected people on the occurrence of natural disasters, and calamities – such as floods, earthquakes etc.

The procedure

- With the view to making the Indian civil aviation sector more Self-Reliant, the development of LPV procedures for all civil airports is in progress. Currently, Indigo (35), SpiceJet (21), Air India (15), Go
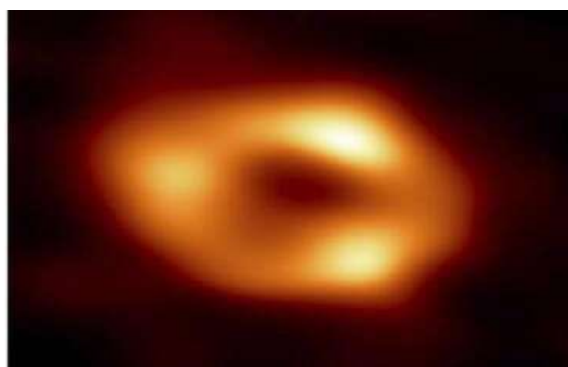
First (04), Air Asia (01) and other airlines have aircraft in their fleet capable to use these LPV procedures. Airports Authority of India has developed 22 such procedures and some are under the process of approval from DGCA for commercial flight operations.

5.4 D2M Technology

- Direct to mobile technology enables the convergence of broadband and broadcast, using this tech mobiles can receive terrestrial digital TV.

- Using D2M, multimedia content can also be beamed to phones directly. the content should stream without any buffering whatsoever while not consuming any internet data. It can possibly be used to directly broadcast content related to citizen-centric information and can be further used to counter fake news, issue emergency alerts and offer assistance in disaster management.

- The user can stream video content without exhausting her mobile data.

- For businesses, one of the key benefits of the technology is that it can enable telecom service providers to **offload video traffic from their mobile network onto the broadcast network**, thus helping them to decongest valuable mobile spectrum.

- The Department of Telecommunications (DoT) has set up a committee to study the feasibility of a spectrum band for offering broadcast services directly to users' smartphones. Band 526-582 MHz is envisaged to work in coordination with both mobile and broadcast services. DoT has set up a committee to study this band.

- Public service broadcaster Prasar Bharati had last year announced a collaboration with IIT Kanpur to test the feasibility of the technology.

5.5 Event Horizon Telescope

- This telescope has been used to find the black holes at the center of galaxy. It was used to take the photograph of   **Sagittarius A(asterisk),** a black hole at the center of our Milky Way, near the border of Sagittarius and Scorpius constellations. It is 4 million times more massive than our sun.

- Astronomers believe nearly all galaxies, including our own, have these giant black holes at their centre, where light and matter cannot escape, making it extremely hard to get images of them. Light gets chaotically bent and twisted around by gravity as it gets sucked into the abyss along with superheated gas and dust.
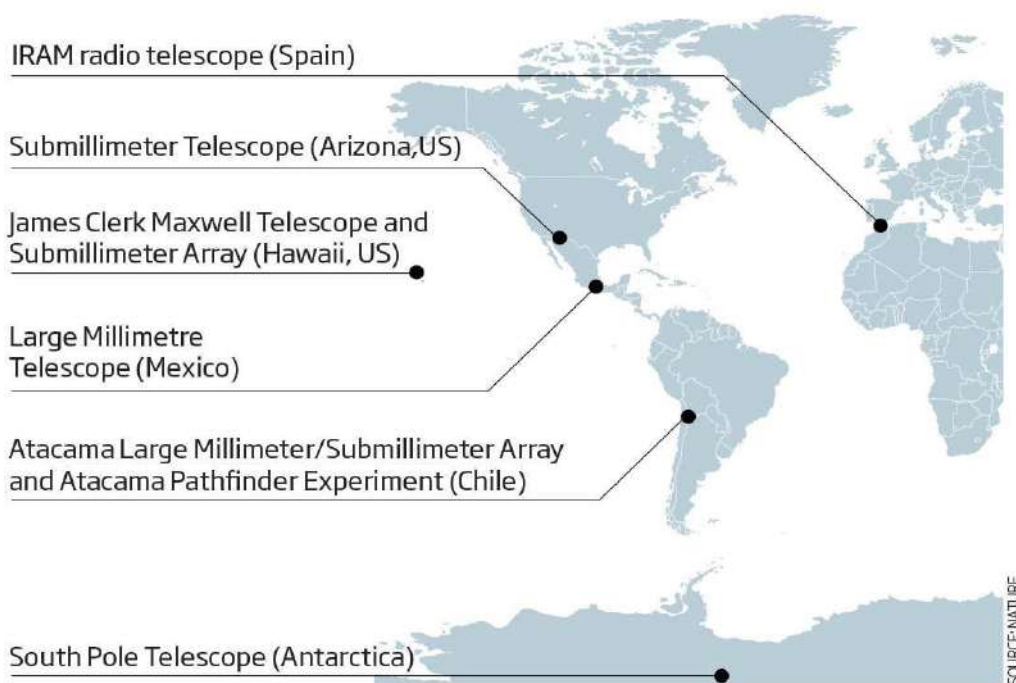
About Event Horizon telescope:

- This telescope is a collection of eight synchronised radio telescopes around the world.

All together now

The Event Horizon Telescope needs eight radio observatories in six different locations around the world to work in sync

IRAM radio telescope (Spain)

Submillimeter Telescope (Arizona,US)

James Clerk Maxwell Telescope and Submillimeter Array (Hawaii, US)

Large Millimetre Telescope (Mexico)

Atacama Large Millimeter/Submillimeter Array and Atacama Pathfinder Experiment (Chile)

South Pole Telescope (Antarctica)

SOURCE:NATURE

- This is not the first black hole image. The same group released the first one in 2019 and it was from a galaxy 53 million light-years away. The Milky Way black hole is much closer, about 27,000 light-years away. A light year is 5.9 trillion miles (9.5 trillion kilometres).

- The mass of the M87 black hole is estimated to be 6.7 billion times mass of the sun.

5.6 What are Black holes?

- A black hole is a region of space-time which is so twisted that even light cannot escape its gravity. These monsters can be understood using Einstein's General theory of relativity. Einstein imaged the space time as a fabric which could be bent and even twisted by heavy objects (see fig 2).
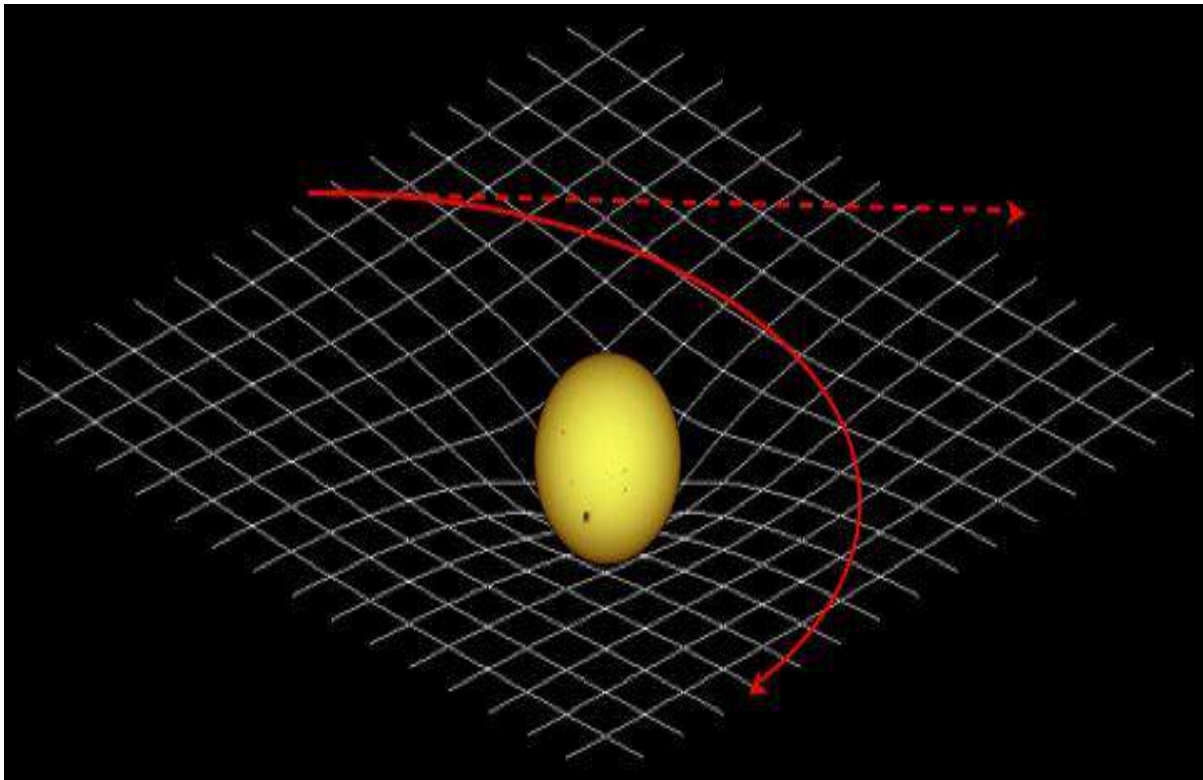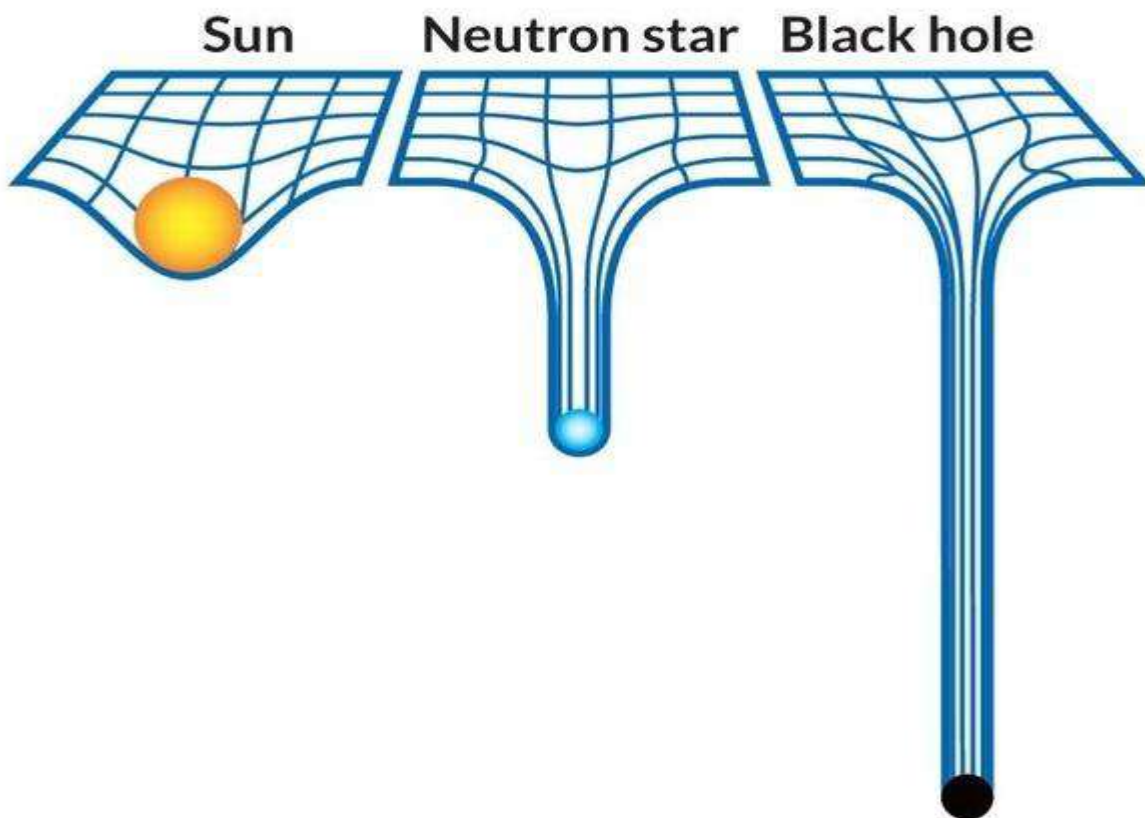
Fig.1 (bending of space time fabric)

- Now imagine an object which is a billion times heavier than Sun,this object can bend spacetime around to such an extent that even light cannot escape it.

- The black dot at the center of a black hole is called singularity where the laws of physics breakdown.
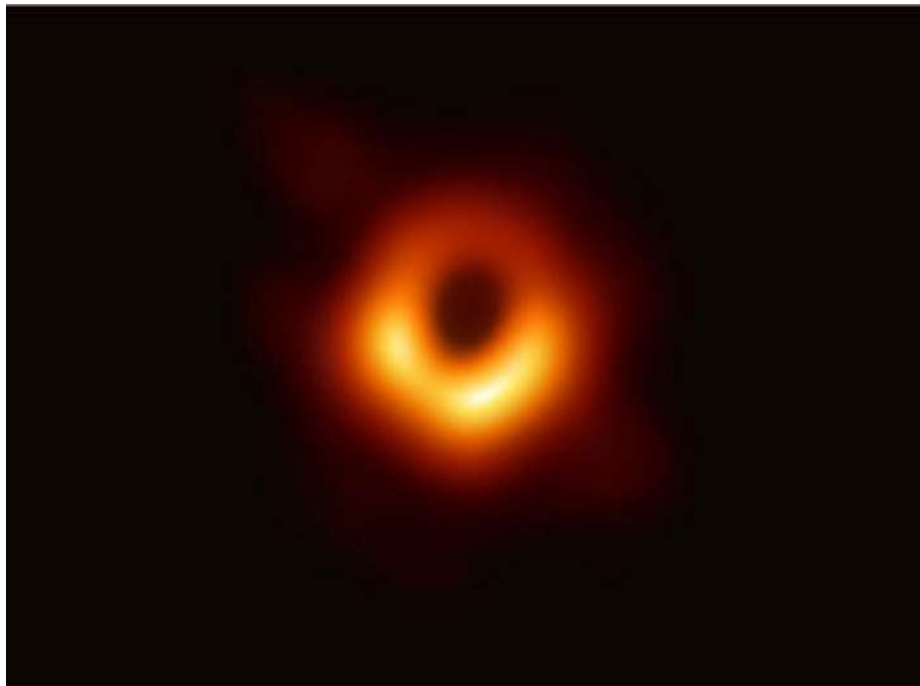
Fig.2, image of a black hole taken by event horizon telescope

Evolution of the concept of black holes:

- The concept of black holes was first proposed by John Michell and Pierre-Simon Laplace independently.

- The idea was not taken seriously until Einstein entered the picture in 1915 with his General theory of Relativity.

- Einstein did not take the possibility of black holes seriously, however a German named Schwarzchild calculated that if the mass of the object was too large then it would shrink to a tiny point called Singularity.

- The boundary of such an object is called Event Horizon and the radius below which even light cannot escape is called Schwarzchild radius.

- An India born Physicist named Chandrasekhar showed that not all objects would collapse into black holes.He introduced a limit called Chandrasekhar limit.

- John Wheeler coined the term Black hole.

5.7 Johkasou technology

- Johkasou in Japanese language means, purification Tank. Johkasou products are approved by the government of Japan and are extensively deployed across Japan as a part of government policy. More than 26% of Sewage in Japan is treated through Johkasou systems. Over 8 million Johkasou are running successfully in Japan and several millions are installed in various other countries.

- Johkasou-treated water and sludge are easy to reuse; they are primarily designed to treat domestic wastewater from individual houses with relatively few toxic substances in johkasou-treated water and sludge. This makes it possible to reuse these for various purposes.

- Core Concept of Johkasou is to treat domestic waste water locally and Reuse it locally, which is very appropriate for India in current circumstances

- The Union Cabinet chaired by Prime Minister Narendra Modi gave its ex-post facto approval for a Memorandum of Cooperation (MoC) signed between India and Japan in the areas of Decentralized Domestic Waste Water Management.

- The MoC will be taken forward by the Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD&GR), Ministry of Jal Shakti and The Ministry of the Environment of Japan.

- A Management Council (MC) will be formed by the executive departments, which will be responsible for the implementation of this MoC by formulating detailed activities of collaboration and monitoring its progress.

5.8 Atal Innovation Mission

- It was started in 2016 with an intention to encourage innovation and entrepreneurship. The success of this mission can be gauged by the fact that India is home to 3rd largest innovation ecosystem in the world with over 90 unicorns in the country. Currently, over 66,359 startups are registered with the Government of India.

Major initiatives under this mission are:

1) Atal tinkering labs:

- With a vision to 'Cultivate one Million children in India as Neoteric Innovators', Atal Innovation Mission established Atal Tinkering Laboratories (ATLs) in schools across India.

- ATLs aim to foster curiosity, creativity and inculcate skills such as design mindset, computational thinking, adaptive learning and physical computing in children.

- According to official government data, there are 9,606 Atal tinkering labs operational in India, from where 2.1 lakh innovation projects were created. Many competitions at regional and national scale have been organised to showcase the innovations developed by the children.

- Providing a great opportunity to children to learn from the best minds of the nation, Council of Scientific & Industrial Research (CSIR) with their 36 labs have adopted 295 ATLs and their students across the country in April 2021.

2) Atal Incubation centers:

- AIM has been establishing world class incubators called Atal Incubation Centres (AICs). The incubation centres provides advisory support, financial support, technological facilities and co-working spaces. The network linkages provided by such centres provide easy access to funds from venture capitalists and angel investors.

- Besides nurturing start-up businesses to become scalable and sustainable enterprises, AIM shall also provide scale-up support to a few distinguished incubation centres of the country. These incubation centres, referred to as Established Incubation Centers (EICs) have already been in existence, but AIM intends to further catalyze their performance by providing them scale-up support.

- Over 2,200 startups that received support from AICs have created more than 30,000 jobs. Amongst these startups, 625 are owned by women entrepreneurs.

3) Atal Community Innovation Centers (ACIC)

- These centers serve the innovators in underserved areas of the country. The innovative ideas from economically disadvantaged sections and socially excluded areas are transformed into products and services by these centers.

- Financial assistance of 2.5 crore is provided to the ACIC for running space, innovation and outreach operations.

- Government on April 8 approved continuation of Atal Innovation Mission (AIM), till March 2023. n order to improve the entrepreneurial ecosystem in the country, AIM aims to establish 10,000 Atal Tinkering Labs (ATLs), 101 Atal Incubation Centers (AICs) and 50 Atal Community Innovation Centers (ACICs). The mission also intends to support 200 startups via the Atal New India Challenges.

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