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JULY - 2020

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1. INDIAN SOCIETY & POLITY

1. Strength of M.P. Ministry exceeds constitutional limit

Why in News?

- Rajya Sabha MP in Madhya Pradesh has warned to move to the court as the strength of the Council of Ministers in the state reportedly exceeds the prescribed limit.

Highlights:

- Recently 20 Cabinet Ministers and eight Ministers of State were included in the Council of Ministers, expanding it to 34.
- This was described as illegal, as appointing Ministers more than 15% of the effective strength of the legislators at 206 the law has been violated.
- It has been alleged that the BJP government had violated Article 164 (1A) of the Constitution.

Article 164 (1A) of the Constitution:

- The total number of Ministers, including the Chief Minister, in the Council of Ministers in a State shall not exceed 15% of the total number of members of the Legislative Assembly of that State.

Key Highlights

- **Article 164** only says that the Chief Minister shall be appointed by the Governor.
- The form of government in the states, as at the centre, is parliamentary.
- The functioning of the Council of Ministers in the states is nothing but a replica of the union Council of Ministers.
- The governor is the nominal executive authority (de jure executive) and the Chief Minister is the real executive authority (de facto executive).
- In other words, the governor is the head of the state while the Chief Minister is the head of the government.
- Thus the position of the Chief Minister at the state level is analogous to the position of prime minister at the Centre.

Article 164:

- The Chief Minister shall be appointed by the Governor and the other Ministers shall be appointed by the Governor on the advice of the Chief Minister, and the Ministers shall hold office during the pleasure of the Governor. Council of Ministers shall be collectively responsible to the Legislative Assembly of the State. The Governor shall administer to him the oaths of office and secrecy as set out in the Third Schedule before a Minister enters upon his office.
- A Minister who for any period of six consecutive months is not a member of the Legislature of the State shall at the expiration of that period cease to be a Minister.

2. Postal ballots and controversy around it

Why in News?

- The Election Commission has announced that it will allow those above the age of 65 as well as those under home or institutional quarantine to vote using postal ballots during the Bihar Elections.

Highlights:

- A concept of 'absentee voter' has been introduced and defined for the elections.
- Person with disability means a person flagged as person with disability in the database for the electoral roll. Senior citizen means an elector belonging to the class of absentee voters and is above 80 years of age.
- Senior citizens above the age of 65 and voters who test positive for COVID19 or are suspected to be COVID-affected were allowed to cast their vote by Post.

What is Postal Voting?

- A restricted set of voters can exercise postal voting. Through this facility, a voter can cast her vote remotely by recording her preference on the ballot paper and sending it back to the election officer before Counting.

Eligibility:

- Members of the armed forces like the Army, Navy and Air Force; members of the armed police force of a state (serving outside the state); government employees posted outside India and their spouses are entitled to vote only by post.
- In other words, they can't vote in person.
- Voters under preventive detention can also vote only by post.
 - ✓ **Special Voters:** Such as the President of India, Vice President, Governors, Union Cabinet ministers, Speaker of the House and government officers on poll duty have the option to vote by post. But they have to apply through a prescribed form to avail this facility.
- **Absentee Voters:**
 - ✓ The Law Ministry, at the Election Commission's behest, introduced a new category of 'absentee voters', who can now also opt for postal voting.
 - ✓ These are voters employed in essential services and unable to cast their vote due to their service conditions. Currently, officials of the Delhi Metro Rail Corporation, Northern Railway (Passenger and Freight) Services and media persons are notified as Absentee Voters.

How are Votes Recorded by post?

- The Returning Officer is supposed to print ballot papers within 24 hours of the last date of nomination withdrawal and dispatch them within a day.
- Ballot papers reach the concerned voter well before the polling date and she has enough time to send it back before the counting day.
- Postal ballot papers for members of the Armed Forces are sent through their record offices.
- Post or electronically: For members of the armed police force of a state (serving outside the state), government employees posted outside India and their spouses ballot papers can be delivered electronically.
- Remaining categories: Ballot papers can be delivered personally or through post.

How does it work?

- After receiving a postal ballot, the voter can mark her preference with a tick mark or cross mark against the candidate's name.
- They also have to fill up a duly attested declaration to the effect that they have marked the ballot paper.
- The ballot paper and the declaration are then placed in a sealed cover and sent back to the Returning Officer before the time fixed for the Commencement of Counting of Votes.

Objection of this move by Political Parties:

- Few political parties have objected to the ECI's decision to allow voters aged 65 and above and those infected or suspected to be infected with COVID19 to vote via postal ballots.
- Grounds for objection: Arbitrary, malafide, unconstitutional and move against free and fair elections. It may lead to malpractices and foul play by those parties which are in power and having resources.
- It may expose them to administrative influence or influence by the Government or the ruling party.
- Absentee voter means a person belonging to such class of persons as may be notified, under section 60 of the Act, and who is employed in essential services as mentioned in the said notification, and includes an elector belonging to the class of senior citizen or persons with disability.
- In case of an absentee voter, the application shall be made in Form 12D, and shall contain such particulars as specified therein, and shall be duly verified by the Nodal Officer and shall reach the Returning Officer within five days following the date of notification of Election.

- In the case of absentee voters, postal ballot papers shall be returned to the centre provided for recording of vote, subject to any direction that may be issued by the Election Commission on this behalf.

3. Mongolian Kanjur Manuscripts

Why in News?

- First five re-printed volumes of Mongolian Kanjur Manuscripts released.

Highlights:

- The Ministry of Culture has taken up the project of reprinting of 108 volumes of Mongolian Kanjur under the National Mission for Manuscripts (NMM).
- The first set of five volumes of Mongolian Kanjur published under the NMM was presented to the President of India and the Mongolian Ambassador on the occasion of Guru Purnima.
- It is expected that all the 108 volumes of the Mongolian Kanjur will be published by March 2022.

Mongolian Kanjur:

- Mongolian Kanjur, the Buddhist canonical text in 108 volumes, is considered to be the most important religious text in Mongolia.
- In the Mongolian language 'Kanjur' means 'Concise Orders'- the words of Lord Buddha in particular.
- It is held in high esteem by Mongolian Buddhists and they worship the Kanjur at temples and recite the lines of Kanjur in daily life as a sacred ritual.
- The Kanjur is kept in almost every monastery in Mongolia.
- The Mongolian Kanjur has been translated from Tibetan. The language of the Kanjur is Classical Mongolian.
- During the socialist era in Mongolia (1924 to the early 1990s), xylographs were consigned to flames and monasteries were bereft of their sacred scriptures.
- During 1956-58, Professor Raghu Vira obtained a microfilm copy of the rare Kanjur manuscripts and brought them to India.
- And, the Mongolian Kanjur in 108 volumes was published in India in the 1970s by Prof. Lokesh Chandra, former Member of Parliament (Rajya Sabha).
- Now, the present edition is being published by the National Mission for Manuscripts, Ministry of Culture, Government of India, in which every volume will have a list of contents indicating the original title of the sutra in Mongolian.

4. Internet freedom

Why in News?

- The government's decision to block 59 Chinese apps has once again spotlighted the vulnerability of Internet Freedom at a Time of National Security.

Is Internet Freedom being Sacrificed?

- **Use of Section 69A [of the Information Technology Act]:**
 - ✓ It is not a new power that the government is commandeering during a time of national security emergency.
 - ✓ Section 69A has a limited set of defined grounds under which the government can take action. Those are often wide grounds, including security of the state.
- **Responsibility of a Democracy:**
 - ✓ India is not only a constitutional democracy, but also one that is a signatory to the International Covenant on Civil and Political Rights as well as the Universal Declaration of Human Rights.
 - ✓ There is a certain basic understanding that regulation of the Internet or Internet-based services by governments has to respect basic human rights standards.
 - ✓ Therefore the necessity of blocking the app must be very clearly made out by the Government.
- **Non following of the standards (Three Part Test):**
 - ✓ For a government to block service or to block any access to content or take other coercive steps that may intrude upon people's fundamental rights and freedoms, it has to follow what in international law is called the three-part test.
 1. Less intrusive
 2. Proportionality test
 3. Standard of necessity
- **Freedom of Speech and Expression:**
 - As per the Supreme Court, it is very clear that our fundamental right to free speech and expression applies to online content too.
 - There are other concerns relating to security, which is one of the grounds allowed under Indian law, as well as other larger concerns on data and cybersecurity, which the Indian government does not right now have any legal basis to take clear action on because it itself has not enacted law on that subject, they have to make that information available.

Way Ahead:

- The government should immediately stop asserting that privilege, so that the public indeed knows what is being blocked and for what reason.
- The Supreme Court in the issue of Internet shutdowns in the Anuradha Bhasin judgment said very clearly that any order blocking people's rights to liberty, especially in relation to the Internet, requires it to be published.
 - ✓ Review of Section 69A to bring wider reforms.
 - ✓ Bring clear strategy on cyber security

IT Act,2000:

- The Information Technology Act (IT Act), 2000 was enacted to give a fillip to electronic transactions, to provide legal recognition for e-commerce and e-transactions, to facilitate e-governance, to prevent computer-based crimes and ensure security practices and procedures.
- It deals with the use of Digital Signature to authenticate an electronic record.
- The act deals with Electronic Governance and provides inter alia amongst others that where any law provides that information or any other matter shall be made available in an electronic form; and accessible so as to be usable for a subsequent reference.
- It deals with establishment of the Cyber Regulations Appellate Tribunal, which shall be an appellate body where appeals against the orders passed by the Adjudicating Officers, shall be preferred.
- Section 69 gives power to issue directions for interception or monitoring or decryption of any information through any computer source.
- Section 67C refers to the Preservation and Retention of Information by Intermediaries. According to the Central Government, any intermediary who intentionally or knowingly contravenes the provisions shall be punished with an imprisonment for a term which may extend to 3 years and shall not be liable to fine.
- Section 69B authorizes to monitor and collect traffic data or information through any computer resource for Cyber security.

5. Election Commission's powers to delay elections

Why in News?

- Political parties are increasingly voicing their concerns over holding elections in Bihar amid a pandemic.

- Recently, Lok Janshakti Party (LJP) and Rashtriya Janata Dal demanded to postpone state polls till the COVID19 outbreak is contained.

Regarding EC powers to Delay Elections:

- **Legal obligation:** The Election Commission (EC) is mandated under law to hold elections at any time within six months before the five-year term of the Lok Sabha or Legislative Assembly expires.
- The polls are timed in a way that the new Assembly or Lok Sabha is in place on the day of the dissolution of the outgoing House.
- **Extending the time for completing an election:** Under Section 153 of the Representation of the People Act (RPA) the poll panel can extend the time for completing an election, but such extension should not go beyond the date of the normal dissolution of the Lok Sabha or the Assembly.
- **For Example:** In 1991, the Commission, under this provision read with Article 324 of the Constitution, postponed the ongoing parliamentary elections for three weeks after Rajiv Gandhi's assassination during his campaign in Tamil Nadu.
- As recently as March this year, elections to 18 Rajya Sabha seats were postponed by the Commission due to the COVID19 pandemic.
- **In the case of Early Dissolution:** EC has to ensure (as far as possible) that a new Lok Sabha or Assembly is in place within six months of the dissolution.
- **Once announced:** An election once called usually proceeds as per schedule. However, in some exceptional cases, the process can be postponed or even scrapped after its announcement under extraordinary circumstances.

Possibility of Postponing Election in Bihar:

- **Exercise of powers under Section 153:** Only after an election schedule has been notified. If the EC wants to postpone Bihar elections, it will have to be done through its extraordinary powers under Article 324.
- **The Commission will have to Inform:** The government of its inability to hold polls on time.
- The government and the President will then decide: The future course to impose President's Rule or allow the incumbent Chief Minister to continue for six months.
- **Circumstances under which EC decides to postpone an election:**
- **No specific legal provision:** That specifies the circumstances under which elections can be deferred.

- **Circumstances beyond EC's Control:** Law and order, natural calamities like earthquakes and floods, or any other compelling circumstances would be guiding factors for the Commission to take a decision in the matter.
- **Inputs from different Stakeholders:** The decision on postponement is usually made after taking inputs from the ground and the central and State Governments.

6. Draft Transgender Persons (Protection of Rights) Rules, 2020

Why in News?

- The Government has released a new Draft of Transgender Persons (Protection of Rights) Rules, 2020, along with giving a window of 30 days for suggestions and amendments.

Highlights:

- In 2014, the Supreme Court recognised a transgender person's right to self-identify their gender as male, female or the third gender.
- Further, the Court directed central and state governments to grant legal recognition to transgender persons, address social stigma and discrimination faced by them, and provide social welfare schemes for them.
- The Transgender Persons (Protection of Rights) Act, 2019 was passed on November 26, 2019.
- It allows persons to self-perceive their gender identity, provides for the identification of transgender persons, and confers them with certain rights and benefits.
- Following the notification of the Act, the government circulated the Draft Rules to the Act on April 16, 2020 for public feedback.

Rules:

- The Centre has done away with the requirement of a medical examination for trans persons applying for a certificate of identity to the district magistrate.
- They would be required to fill out a form and submit an affidavit saying they perceive themselves to be “a transgender person whose gender does not match with the gender assigned at birth” and that they “declare” themselves to be transgender
- In case of gender change application by a trans person, a certificate from the medical superintendent or chief medical officer of the medical institution where the applicant underwent the intervention would be required.
- **A series of welfare measures has also been proposed Including –**

- ✓ Making at least one hospital in each State equipped to provide safe and free gender affirming surgery, hormone replacement therapy and counselling.
- ✓ Providing medical insurance cards to them.
- ✓ Awarding scholarships, facilitating accommodation and schooling for trans children.
- ✓ Ensuring access to food security to them.

The Transgender Persons (Protection of Rights) Act, 2019:

- It defines a transgender person as one whose gender does not match the gender assigned at birth.
- It includes trans-men and trans-women, persons with intersex variations, gender-queers, and persons with socio-cultural identities, such as kinnar and hijra.
- It prohibits the discrimination against a transgender person, including denial of service or unfair treatment in relation to: (i) education; (ii) employment; (iii) healthcare; (iv) access to, or enjoyment of goods, facilities, opportunities available to the public.
- Every transgender person shall have a right to reside and be included in his household. If the immediate family is unable to care for the transgender person, the person may be placed in a rehabilitation centre, on the orders of a competent court.
- A transgender person may make an application to the District Magistrate for a certificate of identity, indicating the gender as 'transgender'.
- A revised certificate may be obtained only if the individual undergoes surgery to change their gender either as a male or a female.
- It states that the relevant government will take measures to ensure the full inclusion and participation of transgender persons in society.
- National Council for Transgender persons (NCT) would be established to advise the central government as well as monitor the impact of policies, legislation and projects with respect to transgender persons.
- It will also redress the grievances of transgender persons.
- It will consist of:
 - ✓ Union Minister for Social Justice (Chairperson);
 - ✓ Minister of State for Social Justice (Vice- Chairperson);
 - ✓ Secretary of the Ministry of Social Justice;
 - ✓ one representative from ministries including Health, Home Affairs, and Human Resources Development.
 - ✓ Other members include representatives of the NITI Aayog, and the National Human Rights Commission.

- ✓ State governments will also be Represented.
- ✓ The Council will also consist of five members from the transgender community and five experts from non-governmental organisations.

7. Postponing the Elections

Why in News?

- A political party member demands to postpone Bihar polls till the COVID19 outbreak is Contained.

EC's Power to Hold Election:

- Under Section 151A of the Representation of the People Act, Election Commission (EC) is mandated under law to hold elections at any time within 6 months before the five-year term of the Lok Sabha or Legislative Assembly expires.
- In the case of early dissolution, EC has to ensure that a new Lok Sabha or Assembly is in place within Six months of the Dissolution.

Is the EC Empowered to Delay Elections at will?

- An election once called usually proceeds as per schedule. However, in some cases, the process can be postponed or even scrapped under extraordinary circumstances.
- Under Section 153 of the Representation of the People Act, the poll panel can “extend the time” for completing an election, but such extension should not go beyond the date of the normal dissolution of the Lok Sabha or the Assembly.
- Powers under Section 153 can be exercised only after an election schedule has been Notified.

Process of Postponing the Elections:

- If the EC wants to postpone elections, it will have to be done through its extraordinary powers under Article 324 (Superintendence, direction and control of elections to be vested in EC). The Commission will have to inform the government of its inability to hold polls on time. The government and the President will then decide the future course, either to impose President's Rule or allow the incumbent Chief Minister to continue for six months.

Under what Circumstances can the EC decide to Postpone an Election?

- There is no specific legal provision that specifies the circumstances under which elections can be deferred. Law and order, natural calamities like earthquake and floods, or any other compelling circumstances that are beyond EC's control would be guiding factors for EC to take a decision in the matter.

8. First legislature representative for Siddi community

Why in News?

- The state government in Karnataka has nominated Shantaram Budna Siddi as a Member of the Legislative Council (MLC) Recently.

Highlights:

- With the nomination, the backward Siddi community has got its first representative in the State legislature.
- Shantaram is the first graduate from the Siddi community, has been working among tribal communities in the State for the past three decades.
- There are around 50,000 Siddis, descendants of African people, in Karnataka.
- Considering their low numbers, the Siddis have never managed to get a political representative elected directly.
- They have been racially discriminated in the past and have historically not been part of Mainstream Society.

Siddi Community:

- Siddi Tribe in Karnataka mainly lives in Dharwad, Belagavi and Uttar Kannada districts.
- Classified under the list of Scheduled Tribes by the union government in 2003.
- The economically and socially backwards community is included in Centre's list of Particularly Vulnerable Tribal Groups (PVTGs).
- They were dependent on hunting and gathering traditionally, but at present, their main source of livelihood is labour and agriculture.
- Believed to be of African origin as they clearly show the Negroid racial strain in their physical features.
- Records show that Africans came to India as soldiers and as slaves.
- Many of these slaves were freed in the 18th century and it is speculated that they found their way to the jungles in today's north-west Karnataka.

2. GOVERNANCE

1. United Nations Convention against Torture

Why in News?

- The alleged torture and killing of two Tamil Nadu traders, a father and son, by police last week pointed towards a broken criminal justice system and highlighted the need for police reforms and the ratification of the United Nations Convention Against Torture (UNCAT).

Highlights:

- A father and son, in Thoothukudi, Tamil Nadu were arrested for allegedly keeping their shops open past the permitted hours during the COVID-19 lockdown.
- The Executive Committee (India) of the Commonwealth Human Rights Initiative underlined the urgent need for a strong law in fulfilment of legal obligations.
- The custodial violence and torture were rampant in the country and India remain among a handful of countries yet to ratify the UN Convention against Torture (UNCAT).



United Nations Convention against Torture:

- The United Nations Convention against Torture (UNCAT) is an international human rights treaty, under the review of the United Nations, that came into force on 26 June 1987.
- It aims to prevent torture and other acts of cruel, inhuman, or degrading treatment or punishment around the world.
- 26 June is now recognized as the International Day in Support of Victims of Torture, in honour of the Convention.

Key Provisions:

- The Convention requires states to take effective measures to prevent torture in any territory under their jurisdiction and forbids states to transport people to any country where there is reason to believe they will be tortured.
- The Convention defines torture as a criminal offence.

India's contentions over UNCAT:

- India had signed UNCAT in 1997 but has not ratified it yet.
- India is among the few countries that have not ratified the CAT which has been ratified by 170 countries including Pakistan and China.
- The National Human Rights Commission has been urging the government to recognise torture as a separate crime and codify the punishment in a separate penal law.
- The centre contends some States were not in favour of such a law and the Indian Penal Code and the Criminal Procedure Code were more than Sufficient.

2. PM Formalization of Micro Food Processing Enterprises (PM FME) scheme

Why in News?

- Minister for Food Processing Industries Smt. Harsimrat Kaur Badal launched the PM Formalization of Micro Food Processing Enterprises (PM FME) scheme.

Highlights:

- With a view to providing financial, technical and business support for upgradation of existing micro food processing enterprises, the Ministry of Food Processing Industries (MoFPI) has launched an all India “Centrally Sponsored PM Formalisation of Micro food processing Enterprises (PM FME) scheme” to be implemented over a period of five years from 2020-21 to 2024-25 with an outlay of Rs 10,000 crore.
- The expenditure under the scheme would to be shared in 60:40 ratio between Central and State Governments, in 90:10 ratio with North Eastern and Himalayan States, 60:40 ratio with UTs with legislature and 100% by Centre for other UTs.
- The Scheme adopts One District One Product (ODODP) approach to reap benefit of scale in terms of procurement of inputs, availing common services and marketing of products. The States would identify food product for a district keeping in view the existing clusters and availability of raw material.
- The ODOP product could be a perishable produce based product or cereal based products or a food product widely produced in a district and their allied sectors. Illustrative list of such products includes mango, potato, litchi, tomato, tapioca, kinnow, bhujia, petha, papad, pickle, millet based products, fisheries, poultry, meat as well as animal feed among others. Preference would be given to those producing ODOP products.

- However, units producing other products would also be supported. Support for common infrastructure and branding & marketing would be for ODOP products. The Scheme also place focus on waste to wealth products, minor forest products and Aspirational Districts.
- Existing Individual micro food processing units desirous of upgradation of their unit can avail credit-linked capital subsidy @35% of the eligible project cost with a maximum ceiling of Rs.10 lakh per unit. Seed capital @ Rs. 40,000/- per SHG member would be provided for working capital and purchase of small tools. FPOs/ SHGs/ producer cooperatives would be provided credit linked grant of 35% for capital investment along the value chain.
- Support would be provided through credit linked grant @ 35% for development of common infrastructure including common processing facility, lab, warehouse, cold storage, packaging and incubation center through FPOs/SHGs/cooperatives or state owned agencies or private enterprise to use by micro units in the cluster.
- Support for marketing & branding would be provided to develop brands for micro units and groups with 50% grant at State or regional level which could benefit large number of micro units in clusters.
- The Scheme places special focus on capacity building and research. NIFTEM and IIFPT, two academic and research institutions under MOFPI along with State Level Technical Institutions selected by the States would be provided support for training of units, product development, appropriate packaging and machinery for micro units.
- All the processes of the Scheme would take place on an MIS including applications by entrepreneurs, their processing, approval of various projects by the States and MoFPI, release of grant and other funds and monitoring of the project. Individual entrepreneurs and other stake holders desirous of availing assistance under the scheme may contact the State Nodal Agencies of their respective states/ UTs regarding the roll out of scheme and contact points at the district level.

3. Pradhan Mantri Jan Vikas Karyakram

Why in News?

- The Sanskritik Sadbhav Mandap is a community centre being constructed by Union Minority Affairs Ministry under Pradhan Mantri Jan Vikas Karyakram (PMJVK).
- It will be utilized for various socio-economic-cultural activities, skill development training, coaching, relief activities during a disaster such as Corona and different sports activities.

Pradhan Mantri Jan Vikas Karyakram:

- Multi-sectoral Development Programme (MsDP) was revamped as Pradhan Mantri Jan Vikas Karyakram in May 2018.
- The Centrally sponsored scheme seeks to provide better socio-economic infrastructure facilities to the minority communities particularly in the field of education, health & skill development which would further lead to the lessening of the gap between the national average and the minority communities.
- The restructured scheme is to be implemented by the Ministry of Minority Affairs.

Beneficiaries of PMJVK:

- At present 6 (six) communities namely Muslims, Sikhs, Christians, Buddhists, Zoroastrians (Parsis) and Jains have been notified as Minority Communities under Section 2 (c) of the National Commission for Minorities Act, 1992.
- The Programme aims to address development deficits in the identified minority concentration areas.
- The identification of minority concentration areas has been done based on the presence of a substantial population of notified Minority Communities based on Census, 2011.

Special Focus:

- 80% of the resources under the PMJVK would be earmarked for projects related to education, health and skill development.
- 33 to 40% of resources under the PMJVK would be specifically allocated for women-Centric Projects.

4. MyGov Corona Helpdesk

Why in News?

- India's AI-enabled MyGov Corona Helpdesk bagged two awards at Global Leadership Summit and Festival of AI & Emerging Technology, CogX 2020.

Highlights:

- AI-enabled MyGov Corona Helpdesk bagged two awards at CogX 2020, which is a prestigious Global Leadership Summit and Festival of AI & Emerging Technology held annually in London.
- The awards were won by Technical Partner of MyGov, JioHaptik Technologies Limited.
- **The Categories under which the Awards were Won are:**
 - ✓ Best Innovation for Covid-19 – Society

- ✓ People's Choice Covid-19 Overall Winner

MyGov:

- MyGov is the world's largest citizen engagement platform, which facilitates two-way communication between the Indian Government and the Citizen.
- It helps in facilitating participatory governance.
- In the fight against COVID-19, MyGov, JioHaptik and WhatsApp collaborated to develop AI-enabled MyGov Corona Helpdesk in a record time of 5 days.
- MyGov Corona Helpdesk is a WhatsApp Chatbot and is available to all WhatsApp users.
- The person in need is only required to save the prescribed number in their contact list and send a message to the MyGov Corona Helpdesk.
- The chatbot engages citizens in a user-friendly manner with personalized information and updates on COVID-19, government advisories, advice of medical experts, stories of COVID-19 survivors, myth busters and musical interludes.
- The move is intended to mitigate the circulation of fake news and the spreading of misinformation among the masses pertaining to coronavirus.
- This initiative by the Centre will also help in creating awareness among the citizens about the preventive measures that could save them from falling prey to the coronavirus.
- In response to the COVID-19 outbreak, the 'MyGov Corona Helpdesk' has received more than 76 million messages and processed over 41 million conversations.

CogX:

- CogX is one of the world's largest events on AI, held annually in London with over 15,000 participants in attendance from the highest levels of business, government, industry, and research. The CogX Awards are given out to the best-of-the-best in AI and emerging technologies across the world.

5. Accelerate Vigyan

Why in News?

- The Science and Engineering Research Board has launched a new inter-ministerial scheme called Accelerate Vigyan to provide a single platform for research internships, capacity building programs, and workshops across the country.

Highlights:

- To give more thrust on encouraging high-end scientific research and preparing scientific manpower, which can lead to research careers and knowledge-based Economy.

- **Vision:**
 - ✓ To expand the research base, with three broad goals:
 - ✓ Consolidation/aggregation of all scientific programs,
 - ✓ Initiating high-end orientation workshops, and
 - ✓ Creating opportunities for research internships for those who do not have access to such resources/facilities.
- Accelerate Vigyan (AV) will initiate and strengthen mechanisms of identifying research potential, mentoring, training and hands-on workshop on a national scale.
- There is a plan to organize about 1000 high-end workshops to provide opportunities to about 25,000 postgraduate and doctoral students in the next five years, in collaboration with premier scientific institutions and laboratories.

Mission SAMOOHAN:

- Mission Samoohan marks the beginning of Accelerate Vigyan.
- It aims to encourage, aggregate and consolidate all scientific interactions in the country under one common roof.
- This mission caters to a varied audience – R&D Departments, Institutes in Science & Technology as well as Stakeholders – mentors, coordinators, participants and students.
- It has been sub-divided into SAYONJIKA and SANGOSHTI.
- SAYONJIKA is an open-ended program to catalogue the capacity building activities in science and technology supported by all government funding agencies.
- SANGOSHTI is aimed to facilitate the scientific community to establish an interaction with other individuals and Research Groups to enhance Knowledge Exchange.

6. China Factor in Increasing Price of Heparin

Why in News?

- India's drug pricing regulator has allowed pharmaceutical companies to increase the ceiling price of essential medicine heparin by 50 % until December 31.

Heparin:


- Heparin is a blood thinner used in patients vulnerable to blood clots in their legs, lungs, heart or other body parts.
- It is used to reduce their risk of heart attacks, strokes and Pulmonary Embolism.
- Several patients with critical illnesses, including those requiring kidney dialysis, are given the Drug.

- During the Covid-19 pandemic, the Ministry of Health and Family Welfare included the drug in its clinical management guidelines for the treatment of Covid-19 patients in the ICU.

Why did Companies seek a hike on its Ceiling Price?

- National Pharmaceutical Pricing Authority had capped heparin's ceiling price in 2018, keeping in mind it is essential to high-risk patients.
- There has been a shortage of this drug during the pandemic because the active pharmaceutical ingredient (API), which forms a considerable amount of the cost of making the drug in India, has increased drastically.
- APIs are crucial elements in drug production as they give medicines their therapeutic effect.
- Since September 2018, the price of this API has shot up 211 per cent.
- With the maximum price that companies can charge for the drug fixed, but the API costs rising, they claimed it had become unviable to continue manufacturing and selling the drug in India.

National Pharmaceutical Pricing Authority (NPPA)

It was constituted as an attached office of the Department of Pharmaceuticals (DoP), Ministry of Chemicals & Fertilizers as an independent Regulator for the pricing of drugs and to ensure availability and accessibility of medicines at affordable prices.

Functions of NPPA

- To implement and enforce the provisions of the Drugs (Prices Control) Order in accordance with the powers delegated to it.
- To deal with all legal matters arising out of the decisions of the Authority.
- To monitor the availability of drugs, identify shortages, if any, and to take remedial steps.
- To undertake and/or sponsor relevant studies in respect to pricing of drugs/ pharmaceuticals.
- To render advice to the Central Government on changes/ revisions in the drug policy.

Price Monitoring & Resource Unit (PMRU)

- It is a registered society and shall function under the direct control and supervision of the State Drug Controller of respective states.
- The unit shall be funded by NPPA for its recurring and non recurring expenses.
- It helps NPPA and State Drug Controller in ensuring the availability and accessibility of medicines at affordable prices.
- It also collect samples of medicines, collect and analyze data and make reports with respect to availability and over- pricing of medicines for taking action under the provisions of Drug Price Control Order (DPCO).

Powers used to Increase the Price of Heparin:

- NPPA used extraordinary emergency powers provided to it under paragraph 19 of the Drugs (Prices Control) Order, 2013.
- This provision allows the regulator to fix the ceiling or retail prices of any drug (in extraordinary circumstances) regardless of whether they were under or eligible for price control under normal circumstances.
- It also allows NPPA to increase or decrease their prices irrespective of the annual wholesale price index of that year.

Role of China:

- The heparin sodium API for the injections made in India majorly comes from China and there are not many alternative manufacturers for the API, in India.
- India heavily relies on China for various APIs used to make crucial antibiotics and vitamins.
- In the last three-six months, prices of APIs from China have gone up 20-35 per cent.

- China consists of around 68 per cent of over \$3.5 billion worth of Ingredients that Indian drug-makers imported to manufacture several essential medicines in 2018-19.
- The increase in heparin's API costs has happened over the last two years.
- Even the costs of APIs for other drugs from China have been on the rise since before the clash at Galwan Valley.

Active Pharmaceutical Ingredient:

- It is the active ingredient which is contained in the medicine. For example, an active ingredient to relieve pain is included in a painkiller.
- All drugs are made up of two core components: Active and Inactive.
- API, the central ingredient of the drug, is an active component while the excipient, the substances other than the drug that helps deliver the medication to the human body, is chemically inactive substances. The excipient can be lactose or mineral oil in the pill.

7. Swachh Survekshan 2021

Why in News?

- A new category of awards titled 'Prerak Dauur Samman' announced as part of Swachh Survekshan 2021.

Highlights:

- The Prerak Dauur Samman has a total of five additional subcategories – Divya (Platinum), Anupam (Gold), Ujjwal (Silver), Udit (Bronze), Aarohi (Aspiring) – with top three cities being recognized in each.
- In a departure from the present criteria of evaluating cities on 'population category', this new category will categorize cities on the basis of six select indicator-wise performance criteria which are as follows:
 - ✓ Segregation of waste into Wet, Dry and Hazard categories
 - ✓ Processing capacity against wet waste generated
 - ✓ Processing and recycling of wet and dry waste
 - ✓ Construction & Demolition (C&D) waste processing
 - ✓ Percentage of waste going to landfills
 - ✓ Sanitation status of cities
- To Encourage cities to Improve urban sanitation, the Ministry of Housing and Urban Affairs has been conducting the Swachh Survekshan since 2016.

- The competition has been able to imbibe a spirit of healthy competition among the citizens with respect to improving the cleanliness of their cities.
- In the 2020 Swachh Survekshan, an unprecedented 1.87 crore citizens participated. The results for 2020 are yet to be released by the Ministry.
- While Mysuru had won the award for the Cleanest City of India in the first edition of the survey, Indore has retained the top position for three consecutive years (2017, 2018, 2019).

8. Dhanvantri Rath

Why in News?

- A mobile van providing non-COVID essential healthcare services to the doorsteps of the people in the city of Ahmedabad has been set by the Ahmedabad Municipal Corporation (AMC).

Dhanvantri Rath:

- The mobile van has been named the 'Dhanvantri Rath'.
- These vans have an Ayush Doctor, paramedic and nursing staff along with local Medical Officer from Urban Health Centre of AMC.
- These vans have been visiting various areas and providing OPD services for non-COVID essential services and field medical consultations to people all over Ahmedabad City at their doorsteps.
- The mobile medical vans carry all essential medicines including ayurvedic & homeopathic medicines, vitamin supplements, basic testing equipment along with pulse-oxymeter.
- In addition to healthcare services reaching the people who cannot access hospital OPD services for various reasons, Dhanvantri Rath has helped identify those who need further clinical treatment or an IPD admission, and ensured that they reach the hospital in a timely manner. In view of the coming monsoons, the scope of health services of mobile medical vans has been extended to include malaria & dengue tests

9. NHAI to Rank Roads for Quality Service

Why in News?

- In its effort to improve the quality of roads, the National Highways Authority of India (NHAI), under the Ministry of Road Transport and Highways, has decided to undertake Performance Assessment and Ranking of the Highways in the Country.

Highlights:

- The assessment audit and ranking of the National Highways are aimed to take corrective recourse, wherever needed, to improve the quality and provide a higher level of service to highway commuters.
- The assessment parameters are based on different international practices and studies for benchmarking highway performances in the Indian context.
- The criteria for the assessment have been broadly categorised in three main heads:
 - ✓ Highway efficiency (45%)
 - ✓ Highway safety (35%)
 - ✓ User services (20%)
- Additionally, important parameters like operating speed, access control, time taken at toll plaza, road signages, road markings, accident rate, incident response time, crash barriers, illumination, availability of Advanced Traffic Management System (ATMS), functionality of structures, provision for grade-separated intersections, cleanliness, plantation, wayside amenities and customer satisfaction will also be considered while conducting the assessment. The score obtained by each Corridor in each of the parameters will provide feedback and corrective recourse for higher standards of operation, better safety and user experience to improve existing highways.
- This will also help in identifying and filling gaps of design, standards, practices, guidelines and contract agreements for other NHAI projects.

10. Guidelines for Evaluation of Nano-based Agri-input

Why in News?

- Guidelines for “Evaluation of Nano-based Agri-input and food products in India” was Virtually Launched.

Highlights:

- The present Guidelines apply to nano-agri-input products (NAIPs) and nano-agri products (NAPs). These Guidelines also apply to nano composites and sensors made from NMs and those that require direct contact with crops, food and feed for data acquisitions.

Key Definition:

- **Nanomaterial (NM):** Material that ranges in size from 1 to 100 nm at least in one dimension or any materials that possess improved properties because of the effect of dimension(s), even if these dimension fall outside the nanoscale range, up to 1000 nm.

- **Nano-agri-input product (NAIP):** Agricultural input preparation containing NMs intended for applications on crop for the purpose of farming.
- **Nano-agri product (NAP):** Agricultural preparation containing NMs for consumption or application in food/feed and their supplements.

Categorization:

- NAIPs and NAPs can be categorized depending on the properties of NMs:
 - ✓ According to Nanoform of the ingredient: i) Nanocarriers loaded with Active ingredient (AI) and ii) Active molecules/compounds converted to Nano form.
 - ✓ According to the synthesis: Biologically synthesized NMs, chemically synthesized OR Physically synthesized
 - ✓ According to chemical nature of NMs: Organic, Inorganic OR Composite NMs
 - ✓ According to degradation nature of NM: Biodegradable OR Non-biodegradable
- **Scientific Rationale Needed to manufacture NAIP/NAPs:** The rationale underlying manufacturing of NAIPs and NAPs should be specified with reference to their claimed advantages in comparison to conventional products.
- **Provide assistance on specific requirements for NAIPs and NAPs:** General requirements as specified in the provisions of CIB&RC (Central Insecticides Board & Registration Committee), Fertilizer Control Order (FCO), FSSAI and Bureau of Indian Standards (BIS) will be applicable for any new NAIP/NAPs.
- **It also Provides Guidelines on:**
 - ✓ General storage stability requirements
 - ✓ Safety Assessment of Manufactured NAIPs and NAPs
 - ✓ Provide the list of information which is required before the evaluation of NAIP/NAPs

Significance:

- Help policy makers and regulators to frame effective provisions for future novel nano-based products in the agri-input and food sectors of India.
- Compared to bulk form of chemical inputs in crops, use of nano-nutrients can reduce nutrient run-off into ground and surface water and thus can reduce environmental pollution. Guidelines will pave the way for significant benefits for our mission on 'Doubling Farming Income by 2022'.
- Provide directions to the funding agencies to plan the road map to promote nanotechnology interventions in agri and food sectors.
- Facilitate R&D activities while maintaining desired safety practices towards product or process development or else Basic Research.

11. Ex-Servicemen Contributory Health Scheme

Why in News?

- The Government has now decided to treat unmarried permanently disabled and financially dependent sons of ECHS beneficiaries who have become disabled after attaining the age of 25 years as dependent and hence eligible for availing benefits under Ex-servicemen Contributory Health Scheme.

Highlights:

- Ex-servicemen Contributory Health Scheme (ECHS) is a flagship Scheme of the Department of Ex-Servicemen Welfare, Ministry of Defence and was launched with effect from 01 April 2003.
- The aim of Scheme is to provide quality healthcare of Ex-servicemen pensioners and their dependents.
- It provides allopathic and AYUSH medicare through a network of ECHS Polyclinics, Service medical facilities and civil empanelled/Govt hospitals/specified Govt. AYUSH hospitals spread across the country.
- ECHS provides cashless transactions, as far as possible, for the patients and is financed by the Government of India.
- Policy framework for the Scheme is laid down by the Govt and executive control is exercised by the Department of Ex-servicemen Welfare.

Eligibility Criteria:

- To be eligible for membership of ECHS, a person must meet the following twin conditions:
 - ✓ Should have ESM status.
 - ✓ Should be drawing normal Service /Disability/ Family Pension.

12. Going Online As Leaders (GOAL) Project

Why in News?

- The Ministry of Tribal Affairs hosted a Webinar along with Facebook India for sensitization of Members of Parliament (MPs) from Scheduled Tribe (ST) Constituencies of India on Going Online As Leaders (GOAL) Project.



Highlights:

- Going Online As Leaders (GOAL) is a digital skilling and mentorship initiative that will engage renowned leaders and experts in their respective domains - from business, education, health, politics, arts and entrepreneurship, to personally mentor scheduled tribe youths across India through digital mechanisms.
- This program will empower and enable scheduled tribe youths to become change makers of tomorrow.

Purpose of the Initiative:

- **Capacity Building:** The initiative primarily targets capacity building of youths living in tribal areas which will inspire, guide and encourage them to boost their confidence level and ignite higher aspirations among them.
- **Improving socio-economic status of Society:** The acquired skills and abilities will help them gain leadership skills, identify problems in their society, find solutions to fight the challenges and use their knowledge to support their livelihood as well as the society's socio-economic status.
- The core areas of mentorship program are Digital Literacy, life Skills and Leadership & Entrepreneurship.
- A bridge between Mentor and Mentee for the exchange of their creative ideas as the aim of GOAL is to create opportunities for them as Digital Medium has become a part of our life.
- Showcase creative potential: The tribals despite their creative potentials, used to get isolated in our country and Digital medium like GOAL will give them an opportunity to come on the front stage by showcasing their creative potential.

GOAL Project:

- GOAL (Going Online as Leaders) is an initiative launched by the Ministry of Tribal Affairs (MoTA) in partnership with Facebook India.
- It aims to digitally skill and empower 5000 youth from tribal communities to become leaders of tomorrow by leveraging the power of digital technology.
 - ✓ Youth from tribal communities between 18-35 years of age can apply to become mentee.
 - ✓ It is open for all youth from tribal communities irrespective of whether they are part of any educational institute or not or in any kind of profession or even undertaking any training.

- The Project is aimed at identifying and mobilizing 2500 renowned people from industry (policy makers and influencers), teachers, artists, entrepreneurs, social workers etc. known for their achievements in their domain areas, to personally mentor tribal youths across India.
- It is not necessary for the mentor to be from tribal or ST background as a condition to apply.
- The initiative has been designed to allocate two mentees to a mentor.
- The program targets to work in structured phases including
 - ✓ Preparatory and design phases;
 - ✓ Selection of mentors and mentees;
 - ✓ Execution that includes mentoring,
 - ✓ Training, internships; and
 - ✓ Follow-up youth economic and leadership activities.
- The program also seeks to provide handholding support to the youth even after they graduate out for upcoming jobs or self-employment or entrepreneurial initiatives through government schemes.
- The program seeks to have a strong component of quality assurance, monitoring, concurrent evaluation protocols and uses analytics and technology for continuous improvement, decision making and sustainability.
- The MoTA has partnered with the Ministry of Electronics and Information Technology for leveraging the strong network of its Common Service Centres (CSCs).
- Youths from tribal communities can visit their nearest CSC to apply under this program.

13. Draft Aids to Navigation Bill 2020

Why in News?

- The draft Aids to Navigation Bill 2020 was issued by the Ministry of Shipping for public consultation.
- A need was felt to change the role of authorities regulating and operating maritime navigation with the advent of modern technologically improved aids to maritime navigation.

Highlights:

- The draft bill will replace the Lighthouse Act, 1927.

- It seeks to incorporate the global best practices, technological developments and India's International obligations in the field of Aids to Marine Navigation.
- The bill aims to regulate state-of-the-art technologies of marine navigation which used to conflict with the statutory provisions of Lighthouse Act, 1927.
- The bill empowers the Directorate General of Lighthouses and Lightships (DGLL) with additional power and functions such as Vessel Traffic Service, Wreck flagging, training and certification, implementation of other obligations under International Conventions, where India is a signatory.
- The bill contains a new schedule of offences, along with commensurate penalties for obstructing and damaging the aids to navigation, and non-compliance with directives issued by the Central Government and other bodies under the draft bill.
- The bill also provides for identification and development of heritage Lighthouses.

14. PRAGYATA Guidelines on Digital Education

Why in News?

- The Union Human Resource Development Minister released PRAGYATA Guidelines on Digital Education Recently.

Highlights:

- The COVID-19 pandemic has led to closure of schools and has impacted over 240 million children of the country who are enrolled in schools.
- Extended school closures may cause loss of learning.
- To mitigate the impact of the pandemic, schools will have to remodel and reimagine the way teaching and learning have happened so far.
- The schools will also need to introduce a suitable method of delivering quality education through a healthy mix of schooling at home and schooling at school.

PRAGYATA Guidelines:

- Developed from the perspective of learners, with a focus on online/blended/digital education for students who are presently at home due to lockdown.
- These guidelines on Digital/ Online Education provide a roadmap or pointers for carrying forward online education to enhance the quality of education.
- The guidelines will be relevant and useful for a diverse set of stakeholders including school heads, teachers, parents, teacher educators and students.

- The guidelines stress upon the use of an alternative academic calendar of NCERT, for both, learners having access to digital devices and learners having limited or no access.
- The PRAGYATA guidelines include eight steps of online/ digital learning that is, Plan- Review- Arrange- Guide- Yak(talk)- Assign- Track- Appreciate.
- These steps guide the planning and implementation of digital education step by step with examples.

15. World Population Day 2020

Why in News?

- The World Population Day is observed on July 11 in an attempt to raise awareness about the trend of growing global population and its implications. It was established in 1989 by the governing council of the United Nations Development Programme (UNDP).
- The theme of the World Population Day 2020 is to raise awareness about safeguarding sexual and reproductive health needs and vulnerabilities of women and girls during the Covid-19 pandemic

Highlights:

- It took hundreds of thousands of years for the world population to grow to 1 billion – then in just another 200 years or so, it grew sevenfold.
- In 2011, the global population reached the 7 billion mark, and today, it stands at about 7.7 billion, and it's expected to grow to around 8.5 billion in 2030, 9.7 billion in 2050, and 10.9 billion in 2100. A study by the UN Population Fund (UNFPA) revealed that 800 women die every day during the process of childbirth.
- UNFPA research highlighted that if the lockdown continues for 6 months, with continued major disruption to health services, then 47 million women in low and middle-income countries might not have access to modern contraceptives. This would, in turn, lead to 7 million unintended pregnancies.
- This could lead to a rise in gender-based violence, female genital mutilation and child marriages, and thus threaten the transformative results attained thus far in raising the health conditions of women.

India's Concerns:

- India has 2% of the world's landmass and 16% of the global population. It is the second-most populous country in the world with an estimated population of around 1.37 billion by 2019.

- Between the Census of 2001 and 2011, India added 18% more people to its population – translating to around 181 million.
- According to the Population Division of the UN Department of Economic and Social Affairs, India’s population is expected to add nearly 273 million people in the next three decades and surpass China’s population within the next 7 years.

16. Non-Personal Data Governance Framework

Why in News?

- A Government Committee headed by Infosys co-founder Kris Gopalakrishnan has suggested that non-personal data generated in the country be allowed to be harnessed by various Domestic Companies and Entities.

Highlights:

- The nine-member committee has released the draft report for the public to send suggestions.
- It has also suggested setting up of a new authority which would be empowered to monitor the use and mining of such non-personal data.
- A data-sharing regulation: To shift data’s economic benefits for citizens and communities in India as well as help the government in policy making and service delivery.
- The report’s proposed regulation would require companies to share their private data, excluding “proprietary data”, at no remuneration.
- Citizens, startups, researchers, and the government can request data for purposes of national security, legal, public interest (such as service delivery), and economic purposes to create a level playing field.
 - ✓ Non-personal data: Refers to any set of data which does not contain personally identifiable information. The report focuses on three types of non-personal data:
 - ✓ Public non-personal data, owned by governments
 - ✓ Private non-personal data, owned by non-government players and derived from assets or processes privately-owned, and
 - ✓ Community data which is the raw data of a group of people that may also be collected by private players.
- A broader version of this proposal had made its way into the IT Ministry’s Personal Data Protection (PDP) Bill (currently in the Parliament).
- A new business category called “Data Businesses”: That exists horizontally across sectors.

- **Community Data:** The report argues that legal and ownership rights over this type of data should be given to a trustee of the community, most often a community body or government agency.
- This trustee can collaborate with a new data regulator called the Non-Personal Data Authority (separate from a Data Protection Authority called for by the pending Data Bill) to seek and enforce data sharing.

17. Anabin

Why in News?

- National Institutes of Design students will be able to easily apply for work permits in Germany now, as NIDs have been included in the Anabin database, Germany.

Anabin:

- Anabin is a German database that lists foreign degrees and higher education qualifications in relation to German diplomas and degrees.
- Recognition of foreign university-level qualifications in Germany is often an essential prerequisite for securing a German Work Visa, Job Seekers Visa or German Blue Card.
- NID Ahmedabad was included in the Anabin list in 2015 and the other new NIDs have also now been incorporated in this database recently.

National Institutes of Design (NID):

- Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India has established five National Institutes of Design (NID) in India for imparting world-class design education.
- NID Ahmedabad (with campuses in Ahmedabad, Gandhinagar & Bengaluru) commenced its activities in 1961. Four new NID's namely – NID Andhra Pradesh, NID Haryana, NID Assam, and NID Madhya Pradesh came up in the last few years.
- NIDs are declared as Institutions of National Importance by virtue of the Act of Parliament and are internationally acclaimed premier design institutes.

18. Post Covid Coach to fight COVID-19

Why in News?

- Indian Railways has taken numerous steps and measures to prevent the spread of COVID-19 Virus Infection.
- Sustaining the ruthless fight against COVID-19, Indian Railways' production unit, Rail Coach Factory, Kapurthala, has developed a Post Covid Coach to fight Covid 19.

- This Post Covid Coach has design improvements in the coach like handsfree amenities, copper-coated handrails & latches, plasma air purification and titanium di-oxide coating for Covid free Passenger Journey.

Highlights:

- **Handsfree Amenities:** Post Covid Coach is having handsfree amenities like foot operated water tap & soap dispenser, foot operated lavatory door (outside), foot operated flush valve, foot operated latches in lavatory door, outside washbasin with foot operated water tap and soap dispenser and forearm operated handle on compartment door.
- **Copper-coated handrails & latches:** Post Covid Coach equipped with copper-coated handrails & latches because copper degrades the virus landed on it within few hours. Copper has anti-microbial properties. When virus lands on copper, Ion blasts pathogen and destroy the DNA and RNA inside the virus.
- **Plasma Air Purification:** Post Covid Coach is having provision of plasma air equipment in AC duct. This plasma air equipment will sterilize the air and surfaces inside the AC coach using ionised air to make the coach Covid-19 and particulate matter resistant. This provision will also improve the ion concentration from 100 ions/cm³ to more than 6000 ions/cm.
- **Titanium Di-oxide Coating:** Post Covid Coach is having Titanium Di-oxide coating in the coach. Nano structured Titanium Dioxide Coating functions as photoactive material. This is aeco-friendly water-based coating that kills viruses, bacteria, mould, and fungal growth and most importantly enhances indoor air quality.
- It is non-toxic and approved by food testing laboratory of the United States Food & Drug Administration (FDA), CE certified. TiO₂ is considered to be a safe substance and is harmless to humans. This Titanium Di-oxide coating applied on washbasins, lavatory, seats & berths, snack table, glass window, floor, virtually every surface that comes in human contact. Effective life of this coating is 12 months.

19. Prashad Scheme

Why in News?

- Union Minister of State(IC) for Tourism virtually joins the inauguration of project 'Development of Pilgrimage Amenities at Somnath, Gujarat' under Prashad scheme.

Highlights:

- National Mission on Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive' (PRASHAD) launched by the Ministry of Tourism in the year 2014-15.

- The objective is for the integrated development of identified pilgrimage and heritage destinations.
- The scheme aimed at infrastructure development such as entry points (Road, Rail and Water Transport), last-mile connectivity, and basic tourism facilities like Information/ Interpretation Centers, etc.

Somnath Temple:

- The Somnath temple is located near Junagadh in Saurashtra on the western coast of Gujarat.
- It is believed to be the first among the twelve jyotirlinga shrines of Shiva.
- It is an important pilgrimage and tourist spot of Gujarat.
- Reconstructed several times in the past after repeated destruction by several Muslim invaders and rulers.
- The present temple was reconstructed in Chaulukya style of Hindu temple architecture and completed in May 1951.

20. COVID Protection System (COPS) for Workplace

Why in News?

- CSIR-CMERI, Durgapur, unveils the COVID Protection System (COPS) for Workplace.

CMERI:

- CMERI or the Central Mechanical Engineering Research Institute is the apex R&D institute for mechanical engineering under the aegis of the Council of Scientific and Industrial Research (CSIR). The institute's mandate is to serve the industry and develop mechanical engineering technology so that India's dependence on foreign collaboration is substantially reduced in strategic and economic sectors.
- Besides, the institute is facilitating innovations and inventions for establishing the claims of Indian talent in international fields where Indian products shall ultimately compete.
- It is located in Durgapur, West Bengal.

COVID Protection System (COPS) for Workplace:

- This system can be utilised by organisations as healthcare workers and frontline security guards are vulnerable to COVID-19 through infected individuals and contaminated objects.
- The COPS is a conglomeration of Solar Based Intelligent Mask Automated Dispensing Unit cum Thermal Scanner (IntelliMAST), Touchless Faucet (TouF) and 360 degree Car Flusher.

- ✓ IntelliMAST: It is an Intelligent surveillance kiosk which identifies the body temperature and whether an individual is wearing face mask or not through customized software solutions.
- ✓ Touchless Faucet (TouF): It is being launched for households and office spaces. The system dispenses liquid soap and water from the same faucet with a time-gap of 30 seconds, which is as per the latest Government guidelines.
- ✓ 360 degree Car Flusher: It is a sodium hypochlorite water screen that uses specialized nozzle design to ensure that the sanitizer diffused water is evenly spread over and under the car body or wheels with adequate water force and coverage.
- ✓ These are now available for Technology Transfers and Product Orders.

21. Restructured Prime Minister's Awards for Excellence in Public Administration 2020 scheme

Why in News?

- The Union Minister of State Jitendra Singh has launched the restructured Prime Minister's Awards for Excellence in Public Administration 2020 Scheme.

Highlights:

- The Government of India instituted The Prime Minister's Awards for Excellence in Public Administration in the year 2006 to acknowledge, recognize and reward the extraordinary and innovative work done by Districts/ Organizations of the Central and State Governments.
- The Scheme was restructured in 2014 for recognizing the performance of District Collectors in Priority Programmes, Innovations and Aspirational Districts and was further restructured in 2020 to recognize the performance of District Collectors towards economic development of the District.
- Additionally, the awards also seek to recognize the efforts of District level officials involved in the Namami Gange Programme. Under this award category, one award shall be given to a district out of the 57 notified District Ganga Committees under the Namami Gange Programme.
- The award has been scheduled to be distributed on the occasion of Rashtriya Ekta Diwas on October 31st, 2020.

Parameters for Evaluation Include:

- Regular and effective conduct of the meeting of District Ganga Committee leading to an overall positive impact on programmes in the district.
- Protection and Rejuvenation of traditional water bodies in the district for helping toward Aviral Ganga.
- Cleanliness of ghats and areas in the vicinity of the river.
- The extent of organic farming within 5 km on both sides of river Ganga within their districts
- Plantation along river Ganga (Ganga Van).
- Protection of aquatic life & biodiversity conservation.
- Awareness generation and ensuring public participation through the involvement of NYK, NCC, NSS with special attention to youth and students.

22. Sero-prevalence study conducted by National Centre for Disease Control

Why in News?

- The Ministry of Health and Family Welfare (MoHFW) commissioned a sero-surveillance study in Delhi.

Highlights:

- This study has been done by the National Centre for Disease Control (NCDC) in collaboration with Govt. of the National Capital Territory of Delhi, following a rigorous multi-stage sampling study design.
- Blood samples were collected from selected individuals after taking written informed consent and then their sera were tested for IgG antibodies and infection using COVID KAVACH ELISA.
- It is one of the largest sero-prevalence studies conducted in the country using the ELISA testing.
- 21,387 samples were collected as per lab standards and were tested.
- The tests help in identifying the of presence of antibodies in the general population.
- These tests performed are not diagnostic tests but only provides information about past infection due to SARS-CoV-2 in individuals who test positive.

- Antibody testing repeatedly done over time i.e. sero-surveillance, generates important evidence for assessing the spread of the pandemic from time to time.

What do the Results Show?

- The results of the sero-prevalence study show that on an average, across Delhi, the prevalence of IgG antibodies is 23.48 %.
- The Study also indicates that a large number of infected persons remain asymptomatic.

Sero-prevalence:

- Sero-prevalence is the number of persons in a population who test positive for a specific disease based on serology (blood serum) specimens.
- It is often presented as a percent of the total specimens tested or as a proportion per 100,000 persons tested.
- As positively identifying the occurrence of the disease is usually based upon the presence of antibodies for that disease (especially with viral infections such as Herpes Simplex, HIV, and SARS-CoV-2), this number is not significant if the specificity of the antibody is low.

National Centre for Disease Control (NCDC):

- The organisation was established to function as a national centre of excellence for control of communicable diseases.
- It works under the Directorate General of Health Services, Ministry of Health & Family Welfare, GOI.
- It was formerly known as the National Institute of Communicable Diseases (NICD).
- Its origins can be traced back to the Central Malaria Bureau, formed in 1909 in Kasauli. It was renamed as the Malaria Survey of India in 1927.
- In 1938, it shifted to Delhi under the name Malaria Institute of India (MII). In 1963, the MII became the NICD.

23. Uttarakhand Char Dham Devasthanam Management Act, 2019

Why in News?

- Uttarakhand High Court upholds constitutional validity of Uttarakhand Char Dham Devasthanam Management Act. Public interest litigation (PIL) was filed against the state government's takeover of the Char Dhams and 51 other shrines through the formation of the Char Dham Devasthanam Management Board.

- The court ruled that the ownership of the temple properties would vest in Char Dham shrines and power of the Board would be confined only to the administration and management of the properties.

Highlights:

- The Act entrusted the management of Char Dham temples to a Board whose Chairman and members are to be nominated by the State Government.
- A senior Indian Administrative Services (IAS) officer will be the chief executive officer (CEO) of the board, while the Chief Minister will be its president. It is also proposed that chief priest of the Char Dham temples as well as the area MLA, MP and a representative of the Tehri royal family will be part of the board.
- The board will bring Kedarnath, Badrinath, Gangotri, Yamunotri and 51 other temples in the hill state under the ambit of the state government and will also result in the dismantling of the existing temple managements such as the Badri-Kedar Temple Committee.
- The provisions and composition of the Act will be like the Vaishno Devi shrine board and Tirupati Balaji shrine board.

24. HIL (India)

Why in News?

- HIL (India) Limited has supplied Dichlorodiphenyltrichloroethane (DDT) to South Africa to support its Malaria Control Programme.

HIL (India):

- HIL (India) Limited was formerly known as Hindustan Insecticides Limited (HIL).
- It is a PSU under the Ministry of Chemicals and Fertilizers The company was incorporated in the year 1954 to manufacture and supply DDT to Government of India's Ministry of Health and Family Welfare for the malaria control programme.
- The company has diversified into agro-inputs to meet the requirements of the agriculture sector.
- HIL (India) is the sole manufacturer of DDT globally.
- The Company will be supplying DDT 75% WP to Zimbabwe (128 MT) and Zambia (113 MT) in the current FY 2020-21.
- The shareholding of the Government of India in the company is 100%.

National Vector Borne Disease Control Programme:

- Launched in 2003-04, the National Vector Borne Disease Control Programme (NVBDCP) is concerned with prevention and control of vector-borne diseases namely Malaria, Filariasis, Kala-azar, Dengue and Japanese Encephalitis (JE).
- The Directorate of NVBDCP is the nodal agency for implementation. This Directorate provides technical assistance and support in terms of cash and commodity to the various states/UTs. The programme implementation is the responsibility of the states/UTs.

25. India Idea Summit 2020

Why in News?

- Recently, the Prime Minister delivered the keynote address at the India Ideas Summit 2020.

India Idea Summit:

- The Summit is hosted by the US-India Business Council (USIBC).
- The theme is 'Building a Better Future'.
- The virtual summit featured high-level presence from Indian and US government policymakers, state-level officials, and thought leaders from business and society.

U.S.-India Business Council:

- Formed in 1975 at the request of the U.S. and Indian governments, the U.S.-India Business Council (USIBC) represents top global companies operating across the United States and India.
- 2020 marks the 45th anniversary of the formation of the Council.
- USIBC serves as the premier voice of the industry, creating connections between businesses and governments in both countries.
- Main offices are located in Washington, D.C., and New Delhi.
- The Council's mission is to promote trade relations between India and the United States by supporting pro-growth policies and increased bilateral engagement, focusing on achieving the shared goal of \$500 billion in two-way trade

Current Priorities:

- Engage the U.S. and Indian governments to advocate for a bilateral trade deal that resolves longstanding trade irritants, including medical device price controls, market access for agricultural goods, information and communications technology (ICT) tariffs, and section 232 tariffs on aluminium and steel.

- Urge the Government of India to implement targeted economic reforms that improve India's ease of doing business and jumpstart growth, with the goal of growing U.S.-India bilateral trade to \$500 billion by 2030.
- Advocate against protectionist legislation that disadvantages non-Indian companies. This includes a move towards compulsory data localization, which hinders the free flow of data, increases cyber risk and inhibits trade, competition and innovation, as well as policies that restrict e-commerce activities.

26. Unnat Bharat Abhiyan

Why in News?

- The Tribal Cooperative Marketing Development Federation of India (TRIFED) under Ministry of Tribal Affairs entered into a partnership with IIT Delhi for the Unnat Bharat Abhiyan (UBA).
- Tribal entrepreneurs under TRIFED's Van Dhan programme will now be able to get access to the expertise of the entire network of 2600 + academic and research institutions under Unnat Bharat Abhiyan (UBA).

Unnat Bharat Abhiyan:

- Unnat Bharat Abhiyan (UBA) is a flagship national programme of the Ministry of Human Resource Development (MHRD).
- **Mission:**
 - ✓ Enable higher educational institutions to work with the people of rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth.
 - ✓ It also aims to create a virtuous cycle between society and an inclusive academic system by providing knowledge and practices for emerging professions and to upgrade the capabilities of both the public and the private sectors in responding to the development needs of rural India.

Goals:

- To build an understanding of the development agenda within institutes of Higher Education and institutional capacity and training relevant to national needs, especially those of rural India.
- To re-emphasize the need for fieldwork, stake-holder interactions and design for societal objectives as the basis of higher education.

- To stress on rigorous reporting and useful outputs as central to developing new professions. To provide rural India and regional agencies with access to the professional resources of the institutes of higher education, especially those that have acquired academic excellence in the field of science, engineering and technology, and management.
- To improve development outcomes as a consequence of this research. To develop new professions and new processes to sustain and absorb the outcomes of the research.
- To foster a new dialogue within the larger community on science, society and the environment and to develop a sense of dignity and collective destiny.

Van Dhan Yojana (VDY):

- Implemented by the TRIFED
- Van Dhan Yojana (VDY) is a programme for value addition, branding and marketing of Minor Forest Produce (MFP) by establishing Van Dhan Kendras of around 300 tribal members each across the country to facilitate the creation of sustainable livelihoods for the forest-based tribal gatherers.
- The Van Dhan Vikas Kendras emerged as a source of employment generation for tribal gatherers and forest dwellers and the home-bound tribal artisans. So far, 1205 Tribal Enterprises spread across 18500 SHGs have been established to provide employment opportunities to 3.6 lakh tribal gatherers and 18000 Self-help Groups in 22 States.

Tribal Cooperative Marketing Development Federation of India (TRIFED):

- It was established in 1987 and became operational from April 1988.
- The basic objective of the TRIFED is to provide a good price of the 'Minor Forest Produce (MFP) collected by the tribes of the country.
- TRIFED is a national-level apex organization functioning under the administrative control of Ministry of Tribal Affairs.

27. Restrictions on Public Procurement from Certain Countries

Why in News?

- Government of India today amended the General Financial Rules 2017 to enable imposition of restrictions on bidders from countries which share a land border with India on grounds of defence of India, or matters directly or indirectly related thereto including National Security.
- The Department of Expenditure has, under the said Rules, issued a detailed Order on public procurement to strengthen the defence of India and national security.

Highlights:

- As per the Order any bidder from such countries sharing a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority.
- The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). Political and security clearance from the Ministries of External and Home Affairs respectively will be mandatory.
- The Order takes into its ambit public sector banks and financial institutions, Autonomous Bodies, Central Public Sector Enterprises (CPSEs) and Public Private Partnership projects receiving financial support from the Government or its undertakings.
- State Governments too play a vital role in national security and defence of India. The Government of India has written to the Chief Secretaries of the State Governments invoking the provisions of Article 257(1) of the Constitution of India for the implementation of this Order in procurement by State Governments and state undertakings etc. For State Government procurement, the Competent Authority will be constituted by the states but political and security clearance will remain necessary.
- Relaxation has been provided in certain limited cases, including for procurement of medical supplies for containment of COVID-19 global pandemic till 31st December 2020. By a separate Order, countries to which Government of India extends lines of credit or provides development assistance have been exempted from the requirement of prior registration.
- The new provisions will apply to all new tenders. In respect of tenders already invited, if the first stage of evaluation of qualifications has not been completed, bidders who are not registered under the new Order will be treated as not qualified.
- If this stage has been crossed, ordinarily the tenders will be cancelled and the process started de novo.
- The Order will also apply to other forms of public procurement. It does not apply to procurement by the private sector.

28. Financial Management Index for Rural Development Programmes

Why in News?

- Recently, the Union Minister of Rural Development & Panchayati Raj, Agriculture & Farmers' Welfare, inaugurated a video conference on "Strengthening of the Risk-Based Internal Audit of Rural Development Programmes.

Highlights:

- During the event, the Financial Management Index for Rural Development Programmes was also launched.
- The Financial Management Index for Rural Development Programmes seeks to rank states on efficient management of financial resources allocated for implementing half a dozen Rural Development Schemes.

Parameters:

- Preparation of annual plan, projecting the requirement of funds for the financial year, the expeditious release of State's share, timely utilization of the funds and submission of the Utilization Certificates etc.
- Optimum implementation of Public Financial Management System (PFMS) & Direct Benefit Transfer.
- Internal Audit
- Social Audit.

29. India Report on Digital Education, 2020

Why in News?

- India Report on Digital Education 2020 was recently launched by the Ministry of Human Resource Development.

Highlights:

- The report focuses on initiatives taken at the centre and state level so as to ensure the continuity of instruction amid the pandemic.
- Some of the major medium to connect to the students were using social media tools like WhatsApp Group for all the classes, Online classes through YouTube channel, Google meet, Skype etc.,
- E-learning portal, TV (Doordarshan & regional channels), Radio (AIR), use of Diksha was the most prominent choice of all the stakeholders.

- It has been prepared by the Digital Education Division of MHRD in consultation with Education Departments of States and UTs.

Initiatives:

- **By HRD Ministry:**

- ✓ It has initiated many projects to assist teachers, scholars and students in their pursuit of learning like -
- ✓ DIKSHA platform - It is a platform for school education which offers teachers, students and parents engaging learning material relevant to the prescribed school curriculum.
- ✓ Swayam Prabha TV Channel, Online MOOC courses,
- ✓ On Air – Shiksha Vani, DAISY by NIOS for differently-abled, e-PathShala,
- ✓ National Repository of Open Educational Resources (NROER) to develop e-content and energized books etc.

- **By State Governments:**

- ✓ Some of the major digital initiatives are SMILE (Social Media Interface for Learning Engagement) in Rajasthan, Padhai Tunhar duvaar (Education at your doorstep) in Chhattisgarh, Mission Buniyaad in NCT of Delhi etc.
- ✓ Some states have launched innovative mobile apps and portals as means to facilitate remote learning.
- ✓ Madhya Pradesh has launched Top Parent App, a free mobile app that empowers parents of young children (3-8 years) with knowledge and strategies around child development to help them meaningfully engage with their children.
- ✓ Assam has launched the Biswa Vidya Assam Mobile Application for class 6 to 10.
- States are also pioneering Whatsapp as a medium for education and to encourage teachers, parents, and students to stay connected.
 - ✓ Odisha Shiksha Sanjog - a Whatsapp based digital learning programme has been launched in Odisha that shares e-content with class groups in a streamlined way
- Many states have had to be creative with low tech forms of teaching and instruction delivery with low or nil requirements of the internet.
 - ✓ In Arunachal Pradesh, primary class students are receiving interesting Radio talks in their mother tongue through All India Radio, Itanagar.
 - ✓ The districts of Jharkhand have localized actual teachers addressing children through regional Doordarshan and available radio slots.
- **Collaboration with NGOs has also been witnessed.**

- ✓ Ladakh is collaborating with NGOs like EMBIBE Bangalore and 17000 feet in providing online education to students even in low connectivity zones.
- **NIOS & Swayam Prabha** contents are disseminated focusing on children who are not connected to the internet and have limited access to radio & TV.
- The Initiatives from states to make available the content through innovative mediums are Ensuring Inclusion.
 - ✓ Jammu & Kashmir has distributed free tabs to students, along with laptops & Braille tactile readers for visually impaired learners.
 - ✓ Andhra Pradesh has started Toll Free Call Centre and Toll Free Video call centre for students for understanding critical topics and clearing their doubts.
 - ✓ Jharkhand has started the Roving teacher where many teachers keep moving to teach children.
- To ensure inclusive learning in remote areas where internet connectivity and electricity is poor and sporadic, States and UTs have also distributed textbooks at children's doorsteps.
 - ✓ Some of the states that have taken this initiative to reach students are Odisha, Madhya Pradesh (under Dakshata Unnayan Programme), Dadra & Nagar Haveli and Daman & Diu, etc.
- **Psychological well-being is also focused upon.**
 - ✓ Mental well-being of children is also taken care of through happiness classes channelized through SMS/IVR for primary grade children in the national capital.

3. SCIENCE & TECHNOLOGY

1. Gold Nanoparticles

Why in News?

- The National Centre for Polar and Ocean Research (NCPOR) and the Goa University (GU) have successfully synthesized gold nanoparticles (GNPs) using psychrotolerant Antarctic bacteria through a non-toxic, low-cost, and eco-friendly way.

Highlights:

- Through a study, NCPOR and GU have established that 20-30-nm-sized spherical-shaped GNPs could be synthesized in a controlled environment.
- These GNPs can be used as a composite therapeutic agent clinical trials, especially in anti-cancer, anti-viral, anti-diabetic, and cholesterol-lowering Drugs.

Nano Technology:

- Nanotechnology is a technology that creates new and novel materials through controlled manipulation at a size range of 1 nm (nanometer) to 100 nm (1 nm equals to 10^{-9} m)
- Nano Particles are those materials that are at least one dimension smaller than 100 nanometres.
- NPs have a high surface-to-volume ratio and they can provide tremendous driving force for diffusion, especially at elevated temperatures. Sintering, i.e., coalescing into solid or porous mass by means of heating without liquefaction, can occur at lower temperatures at shorter time scales than larger particles.
- GNPs are melted at much lower temperatures ($300\text{ }^{\circ}\text{C}$) than bulk gold ($1064\text{ }^{\circ}\text{C}$). NPs have been found to impart various desirable properties to different day-to-day products. For example, GNPs are found to have greater solar radiation absorbing ability than the conventional bulk gold, which makes them a better candidate for use in the photovoltaic cell manufacturing industry.
- Nanoparticles (NPs) have wide variety of potential applications in the fields of biomedical, optical and electronics research. Metallic NPs have been efficiently exploited for biomedical applications and among them GNPs are found to be effective in biomedical research.
- NCPOR and GU have resorted to environmentally acceptable green chemistry procedures to reduce gold ion to GNPs using psychrotolerant Antarctic bacteria. Moreover, they did not have to use synthetic chemical additives as stabilizing or reducing agents.

- Use of psychrotolerant Antarctic bacteria is found to have special advantages like mild reaction condition to reduce gold ion to Gold Nanoparticles (GNPs) with a good dispersion capability.

Gold Nano Particles:

- Gold nanoparticles (AuNPs) are small gold particles with a diameter of 1 to 100 nm which, once dispersed in water, are also known as colloidal gold.
- GNPs have unique optical properties too. For example, particles above 100 nm show blue or violet colour in water, while the colour becomes wine red in 100 nm gold colloidal particles. They can thus be used of therapeutic imaging.
- GNPs also have unique physicochemical properties. Their biocompatibility, high surface area, stability, and nontoxicity make them suitable for various applications in therapeutic use including detection and diagnosis of diseases, bio-labeling, and targeted drug delivery.
- As nano-carriers, GNPs are capable of transferring various drugs made out of peptides, proteins, plasmid DNAs, small interfering RNAs, and chemotherapeutic agents to target diseased cells of the human body.
- GNPs are also found to be useful in the electronics industry. Scientists have constructed a transistor known as NOMFET (Nanoparticle Organic Memory Field-Effect Transistor) by embedding GNPs in a porous manganese oxide as a room temperature catalyst to break down volatile organic compound in air and combining GNPs with organic molecules. NOMFETs can mimic the feature of the human synapse known as plasticity, or the variation of the speed and strength of the signal going from neuron to neuron. These novel transistors can now facilitate better recreation of certain types of human cognitive processes, such as recognition and image processing and have their application in Artificial Intelligence.

2. Phobos: The Closest and Biggest Moon of Mars

Why in News?

- The Mars Colour Camera (MCC) onboard ISRO's Mars Orbiter Mission (MOM) has captured the image of Phobos, the closest and biggest moon of Mars.

Phobos:

- Phobos is the innermost and larger of the two natural satellites of Mars, the other being Deimos.
- Both moons were discovered in 1877 by American astronomer Asaph Hall.

- Phobos is a small, irregularly shaped object with a mean radius of 11 km and is seven times as massive as the outer moon, Deimos.
- Phobos is largely believed to be made up of carbonaceous chondrites.
- The violent phase that Phobos has encountered is seen in the large section gouged out from a past collision (Stickney crater) and Bouncing Ejecta.

Mars Orbiter Mission (MOM):

- The MOM also called Mangalyaan is a space probe orbiting Mars since 24 September 2014. It was launched on 5 November 2013 by the Indian Space Research Organisation (ISRO).
- It aims at studying the Martian surface and mineral composition as well as scans its atmosphere for methane (an indicator of life on Mars).
- It is India's first interplanetary mission and it made it the fourth space agency to reach Mars, after Roscosmos, NASA, and the European Space Agency.
- It made India the first Asian nation to reach Martian orbit and the first nation in the world to do so on its maiden attempt.
- It was initially meant to last six months, but subsequently, ISRO had said it had enough fuel for it to last "many years."

3. Stevioside can make cancer therapy more efficient

Why in News?

- Researchers at the Institute of Nano Science & Technology have found that stevioside, when coated on nanoparticles can increase the efficiency of Magnetic hyperthermia-mediated cancer therapy (MHCT).

Highlights:

- Stevioside is a natural plant-based glycoside found in leaves of Honey yerba.
- MHCT method of Cancer Therapy is based on heating the tumour tissues using magnetic nanoparticles.
- It is based on the generation of localised heat at the tumour site on exposure to AMF (alternating magnetic field) in the presence of magnetic nanoparticles.
- Coating the nanoparticles with the stevioside, a biosurfactant not only improved the cellular uptake of the nano-magnets in glioma C6 cancer cells but also enhanced its retention time.

4. National Atlas and Thematic Mapping Organization (NATMO)

Why in News?

- National Atlas and Thematic Mapping Organization (NATMO) functioning as a subordinate department under the Department of Science & Technology, Ministry of Science & Technology, Government of India published the 4th updated version of COVID-19 Dashboard.

NATMO Covid Dashboard:

- To spread awareness among citizens and to overcome an anxious and worrisome panic most popular approach is the visualisation of situation analysis through Dashboard.
- NATMO took an initiative to host its COVID19 Dashboard under the guidance of Geospatial Group, Department of Science & Technology, Ministry of Science & Technology, to create a single-window platform to integrate all Government Department data including COVID19 combat initiatives. It has been observed commonly that the other COVID dashboards focus on state/district-wise distribution of COVID cases only. But NATMO, in its dashboard, provisioned dissemination of health infrastructure-related information that may help common people to find relevant information on the issue.
- After the initial hosting of COVID19 Dashboard, it has been updated from time to time to keep pace with the changing situation, depending on availability of Authenticated Thematic Information.

NATMO:

- National Atlas and Thematic Mapping Organization is a specialized institution of its kind in the world.
- This organization was assigned with responsibility in the field of thematic cartography and geographical research at national level.
- A subordinate office under Department of Science & Technology, it is the sole authority for depicting National framework data in the form of thematic maps and atlases to cater the actual picture of the development and planning initiatives of the country among the users.

5. Lithium Nucleosynthesis in Stars

Why in News?

- A forty-year-old puzzle regarding the production of lithium in stars has been solved by Indian Researchers.

Lithium Nucleosynthesis in Stars:

- Stars, as per known mechanisms of evolution, actually destroy lithium as they evolve into red giants.
- Planets were known to have more lithium than their stars — as is the case with the Earth-Sun pair.
- However, leading to a contradiction, some stars were found that were lithium-rich.
- The new work by an Indian researcher shows that when stars grow beyond their Red Giant stage into what is known as the Red Clump stage, they produce lithium.
- This is known as a Helium Flash and this is what enriches them with lithium.
- Studying lithium-rich stars
- About 40 years ago, a few large stars were spotted that were lithium-rich.
- This was followed by further discoveries of lithium-rich stars, and that posed a puzzle — if stars do not produce lithium, how do some stars develop to become lithium-rich.
- The planet engulfment theory was quite popular. For example, Earth-like planets may increase the star's lithium content when they plunge into [their] star's atmosphere when the latter become Red Giants.

Findings of the Indian Research:

- Indian researchers have been working on this puzzle for nearly 20 years to devise a method of measuring lithium content using low-resolution spectra in a large number of stars.
- The study demonstrated that lithium abundance enhancement among low mass giant stars is common.
- Until now, it was believed that only about 1% of giants are lithium-rich.
- Secondly, the team has shown that as the star evolves beyond the Red Giant stage, and before it reaches the Red Clump stage, there is a helium flash which produces an abundance of lithium.

Lithium:

- Lithium is a chemical element with the symbol Li and atomic number 3. It is a soft, silvery-white alkali metal. Under standard conditions, it is the lightest metal and the lightest solid element. A light element commonly used today in communication device technology, it has an interesting story.
- It was first produced in the Big Bang, around 13.7 billion years ago when the universe came into being, along with Other Elements.

- While the abundance of other elements grew millions of times, the present abundance of lithium in the universe is only four times the original [Big Bang] value. It is actually destroyed in the stars.
- The Sun, for instance, has about a factor of 100 lower amount of lithium than the Earth.

6. Rheumatoid Arthritis

Why in News?

- INST scientists formulate nanoparticle to reduce the severity of rheumatoid arthritis.

Highlights:

- Scientists from the Institute of Nano Science & Technology (INST), Mohali, an autonomous institute of the Department of Science and Technology, Government of India, have formulated nanoparticles with chitosan and loaded these nanoparticles with zinc gluconate for reducing the severity of Rheumatoid Arthritis.

Rheumatoid Arthritis:

- Rheumatoid arthritis (RA) is an autoimmune disease that can cause joint pain and damage throughout the human body.
- It is a chronic inflammatory disorder.
- In some people, the condition can damage a wide variety of body systems, including the skin, eyes, lungs, heart and blood vessels, apart from the joints.
- Rheumatoid arthritis occurs when the immune system mistakenly attacks the body's tissues. Unlike the wear-and-tear damage of osteoarthritis, rheumatoid arthritis affects the lining of the joints, causing a painful swelling that can eventually result in bone erosion and joint Deformity. Severe rheumatoid arthritis can cause physical disabilities.
- There is no cure for RA but there are treatments that can help manage it.
- The element Zinc is vital for maintaining normal bone homeostasis, and its levels are reported to get reduced in Rheumatoid Arthritis Patients.

7. ZyCoV-D

Why in News?

- BIRAC has announced that ZyCoV-D, the plasmid DNA vaccine designed and developed by Zydus and partially funded by the Department of Biotechnology, Government of India has initiated Phase I/ II clinical trials in healthy subjects, making it the first indigenously developed vaccine for COVID-19 to be administered in Humans in India.

- Vaccine Discovery Programme supported by the Department of Biotechnology, Govt. of India under the National Biopharma Mission, implemented by BIRAC moves into clinical trials

National Biopharma Mission:

- The Industry-Academia Collaborative Mission of Department of Biotechnology (DBT), Govt of India. The mission was approved in 2017 at a total cost of Rs 1500 crore and is 50% co-funded by World Bank loan.
- Implemented at Biotechnology Research Assistance Council (BIRAC).
- This program is dedicated to delivering affordable products to the nation to improve the health standards of India's population.
- The oversight of the mission activities is provided by the inter-ministerial Steering Committee chaired by the Secretary-DBT.
- The Technical Advisory Group (TAG) provides approval and reviews the scientific progress of its components. Additionally, domain-specific Scientific Advisory Groups (SAG), each for the activities/ product development partnerships, are responsible for providing scientific decision making and knowledge and oversight necessary for TAG.

4 Verticals:

- Development of product leads for Vaccines, Biosimilars and Medical Devices that are relevant to the public health need by focussing on managed partnerships.
- Upgradation of shared infrastructure facilities and establishing them as centres of product discovery/discovery validations and manufacturing.
- Develop human capital by providing specific training to address the critical skills gap among the nascent biotech companies across the product development value chain in areas such as Product development, intellectual property registration, technology transfer and regulatory standards.
 - ✓ Help enhance industry-academia inter-linkages and provide increased opportunities for academia, innovators and entrepreneurs to translate knowledge into products and technologies.

8. Kakrapar-3 Nuclear Reactor

Why in News?

- The third unit of the Kakrapar Atomic Power Project (KAPP-3) in Gujarat achieved its 'first criticality', a term that signifies the initiation of a controlled but Sustained Nuclear Fission Reaction.

Highlights:

- This is a landmark event in India's domestic civilian nuclear programme given that KAPP-3 is the country's first 700 MWe (megawatt electric) unit, and the biggest indigenously developed variant of the Pressurised Heavy Water Reactor (PHWR).
- The PHWRs, which use natural uranium as fuel and heavy water as moderator, are the mainstay of India's nuclear reactor fleet. Until now, the biggest reactor size of the indigenous design was the 540 MWe PHWR, two of which have been deployed in Tarapur, Maharashtra.
- The operationalisation of India's first 700MWe reactor marks a significant scale-up in technology, both in terms of optimisation of its PHWR design and an improvement in the economies of scale, without significant changes to the design of the 540 MWe reactor.
- As India works to ramp up its existing nuclear power capacity of 6,780 MWe to 22,480 MWe by 2031, the 700MWe capacity would constitute the biggest component of the expansion plan.
- Currently, nuclear power capacity constitutes less than 2% of the total installed capacity of 3, 68,690 MW (end-January 2020).

Nuclear Fission Reaction:

- Fission is a process in which the nucleus of an atom splits into two or more smaller nuclei, and usually some by-product particles.
- When the nucleus splits, the kinetic energy of the fission fragments is transferred to other atoms in the fuel as heat energy, which is eventually used to produce steam to drive the turbines.
- For every fission event, if at least one of the emitted neutrons on average causes nuclear fission, a self-sustaining chain reaction will take place.
- A nuclear reactor achieves criticality when each fission event releases a sufficient number of neutrons to sustain an Ongoing series of Reactions.

9. Drop in Seismic Noise due to Covid-19

Why in News?

- The ongoing Covid-19 pandemic has brought the world to a grinding halt and high-frequency noise generated by industrial plants, traffic, and other human activities fell sharply during a period marked by Lockdowns and Social Isolation.

Highlights:

- Soon after the COVID-19 pandemic was declared a global health emergency earlier this year, countries across the world responded by imposing stringent lockdown measures and enforcing social distancing norms.
- A team of seismologists studied the impact of the coronavirus pandemic on noise-levels worldwide and found that high-frequency noise caused by human activities dropped by as much as 50 percent between March and May, this year.
- The period of quiet induced by this global health crisis is the longest and most prominent noise reduction on record. The team analysed data collected from 268 seismic sensors located across 117 countries, and found that human-generated noise had fallen significantly in 185 of them. The most substantial declines were observed in highly-populous urban areas like Singapore and New York as well as tourist hotspots like Barbados and in European ski resorts. Seismic noise refers to vibrations within the Earth, which are triggered by natural and man-made phenomena like earthquakes, volcanoes, and bombs. Seismometers, specialised devices that record ground motions, also capture seismic noise. Everyday human activity such as road traffic, manufacturing in factories, the sound produced by planes, or simply people walking down the street also generates seismic noise, which is recorded as a near-continuous signal on seismometers.
- The sound signals created by human beings are often referred to as anthropogenic seismic noise. Many scientists have noticed favourable changes in the environment, such as reductions in nitrous oxide emissions and improved air quality, due to the pandemic.
- But the team of seismologists from around the world has found that the coronavirus outbreak also resulted in unparalleled noise reduction globally.
- Low noise levels of background noise during COVID-19 lockdowns could thus allow detection of signals from new sources in areas with incomplete seismic catalogs.

10. Recombinant BCG Vaccine

Why in News?

- Serum Institute of India Pvt Ltd (SIPL) has conducted a clinical trial of a recombinant BCG vaccine candidate, VPM1002.

Highlights:

- The clinical trial has been supported under the Department of Biotechnology's National Biopharma Mission.

- The objective of this trial is to evaluate the ability of VPM1002 in reducing infection incidence and severe disease outcomes of COVID-19 among high-risk persons of advanced age or co-morbidities and high-exposure healthcare workers (HCWs).
- About 6,000 health workers and high-risk individuals have been enrolled in a clinical trial to determine if the recombinant Bacillus Calmette-Guerian (rBCG) can boost immunity to fight against the virus.

BCG Vaccine:

- It is administered routinely to all newborn babies as a part of the National childhood immunization programme to prevent tuberculosis (TB), an infection caused by bacteria that mainly affects the lungs. It has beneficial heterologous effects and proven antiviral and immune modulatory properties that protect against infectious diseases through induction of trained innate Immunity and Heterologous Adaptive Immunity.

11. Start of Assembly of the ITER Tokamak

Why in News?

- The International Thermonuclear Experimental Reactor (ITER) Organization is celebrating the Start of Assembly of the ITER Tokamak in France.
- On this occasion, the Prime Minister of India congratulated the ITER organization. India's contributions to the project include the cryostat, in-vessel shields, contributions to the cooling water and among others.

ITER:

- ITER is an experimental fusion reactor facility being constructed in France to prove the feasibility of nuclear fusion for future source of energy.
- ITER partners are the European Union, China, India, Japan, South Korea, Russia and the United States of America. European Union being the host party contributes 45% while the rest of the parties contribute 9% each. Most of these contributions are through 'in-kind' procurement of ITER components. India formally joined the ITER Project in 2005 and the ITER Agreement between the partners was signed in 2006.
- ITER's First Plasma is scheduled for December 2025.

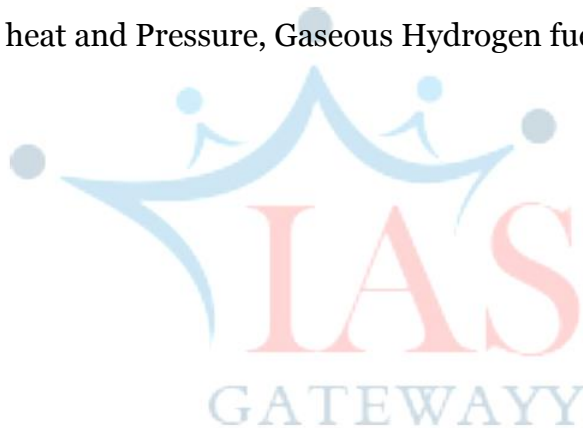
Fusion:

- Fusion is the energy source of the Sun and stars. In the tremendous heat and gravity at the core of these stellar bodies, hydrogen nuclei collide, fuse into heavier helium atoms and release tremendous amounts of energy in the process.

-
- Three conditions must be fulfilled to achieve fusion in a laboratory: very high temperature (on the order of $150,000,000^{\circ}$ Celsius); sufficient plasma particle density (to increase the likelihood that collisions do occur); and sufficient confinement time (to hold the plasma, which has a propensity to expand, within a defined volume).

Tokamak:

- First developed by Soviet research in the late 1960s. The term tokamak stands for the toroidal chamber with magnetic coils.
- A tokamak is an experimental machine designed to harness the energy of fusion. Inside a tokamak, the energy produced through the fusion of atoms is absorbed as heat in the walls of the vessel.
- Just like a conventional power plant, a fusion power plant will use this heat to produce steam and then electricity by way of turbines and generators.
- The heart of a tokamak is its doughnut-shaped vacuum chamber. Inside, under the Influence of Extreme heat and Pressure, Gaseous Hydrogen fuel Becomes a Plasma.



4. ECONOMY

1. Udyam Registration

Why in News?

- New process of MSME registration takes off in the name of Udyam Registration.

Highlights:

- A new process of classification and registration of MSMEs is starting from 1st July 2020.
- An enterprise for this purpose will be known as Udyam and its Registration Process will be known as 'Udyam Registration'.
- The MSME Ministry has launched a new portal for this purpose.
- MSME registration process is fully online, paperless and based on self-declaration. No documents or proof are required to be uploaded for registering an MSME.
- The user will need to provide their 12-digit biometric Aadhaar number for the registration process. A registration number will be given after completion of the entire process and an Udyam Registration Certificate will be issued.
- The Udyam Registration Certificate will have a dynamic QR Code from which the web page on the Portal and details about the enterprise can be accessed. There will be no need for renewal of the registration.
- The PAN & GST linked details on investment and turnover of enterprises will be taken automatically from the respective Government databases.
- No enterprise will be allowed to file more than one Udyam Registration. Any number of activities including manufacturing or service or both may be specified or added under one Registration.
- The registration process will be completely free of cost.

2. Special Liquidity Scheme for NBFCs and HFCs

Why in News?

- With a view to improving the liquidity position of NBFCs and HFCs, the Union Finance Minister had announced in March 2020 the launch of a Special Liquidity Scheme of Rs. 30,000 Crores.

Highlights:

- The scheme is being launched through a Special Purpose Vehicle in the form of SLS Trust set up by SBI Capital Markets Limited (SBICAP).

- RBI will provide funds for the Scheme by subscribing to government-guaranteed special securities issued by the Trust.
- The total amount of such securities issued outstanding shall not exceed Rs. 30,000 crores at any point in time.
- The Government of India will provide an unconditional and irrevocable guarantee to the special securities issued by the Trust.
- Any NBFC including Microfinance Institutions registered with RBI (excluding those registered as Core Investment Companies) and any HFC registered with the National Housing Bank (NHB) complying with the following broad conditions will be eligible to raise funding from the said facility:
 - ✓ Compliance with RBI regulations on Capital adequacy
 - ✓ Net NPA is less than 6% as on 31.03.2019
 - ✓ Net profit in at least one of the two preceding financial years
 - ✓ Rated as Investment Grade by a Rating Agency
- Is not reported under SMA-1 or SMA-2 category by any bank for their borrowing during the period one year prior to 01.08.2018
- The Scheme will remain open for 3 months for making subscriptions by the Trust.
- The period of lending (CPs/NCDs of NBFCs/HFCs for a short duration of up to 90 days) by the Trust shall be for a period of up to 90 days.
- The financing would be used by the NFBCs/HFCs only to repay existing liabilities and not to expand assets.
- Further, those market participants who are looking to exit their standard investments with a residual maturity of 90 days may also approach the SLS Trust.
- This facility is a part of the Government of India and RBI's efforts to alleviate the concerns of the market participants on the availability of funds to the sector.

3. World Bank Emergency Response Programme

Why in News?

- The World Bank and the Government of India signed the \$750 million agreement for the MSME Emergency Response Programme to support increased flow of finance into the hands of micro, small, and medium enterprises (MSMEs), severely impacted by the COVID-19 crisis.

Highlights:

- COVID-19 pandemic has severely impacted the MSME sector leading to loss of livelihoods and jobs.
- The Government of India is focused on ensuring that the abundant financial sector liquidity available flow to NBFCs, and that banks which have turned extremely risk averse, continue taking exposures in the economy by lending to NBFCs.
- This project will support the Government in providing targeted guarantees to incentivize NBFCs and banks to continue lending to viable MSMEs to help sustain them through the crisis.
- The World Bank has to date committed \$2.75 billion to support India's emergency COVID-19 response, including the new MSME project. The first \$1 billion emergency support was announced in April this year for immediate support to India's health sector. Another \$1 billion project was approved in May to increase cash transfers and food benefits to the poor and vulnerable, including a more consolidated delivery platform – accessible to both rural and urban populations across state boundaries.
- The \$750 million loan from the International Bank for Reconstruction and Development (IBRD), has a maturity of 19 years including a 5-year grace period.

World Banks MSME Emergency Response Programme:

- The World Bank's MSME Emergency Response Programme will address the immediate liquidity and credit needs of some 1.5 million viable MSMEs to help them withstand the impact of the current shock and protect millions of jobs. This is the first step among a broader set of reforms that are needed to propel the MSME sector over time.
- The World Bank Group, including its private sector arm – the International Finance Corporation (IFC), will support the government's initiatives to protect the MSME sector by:
- Unlocking liquidity : India's financial system benefited from early and decisive measures taken by the RBI and the Government of India (GOI) to infuse liquidity into the market. Give current uncertainties, lenders remain concerned about borrowers' ability to repay – resulting in limited flow of credit even to the viable enterprises in the sector.
- This program will support government's efforts to channel that liquidity to the MSME sector by de-risking lending from banks and Non-Banking Financial Companies (NBFCs) to MSMEs through a range of instruments, including credit guarantees.

- Strengthening NBFCs and SFBs : Improving the funding capacity of key market-oriented channels of credit, such as the NBFCs and Small Finance Bank (SFBs), will help them respond to the urgent and varied needs of the MSMEs. This will include supporting government's refinance facility for NBFCs. In parallel, the IFC is also providing direct support to SFBs through loans and equity.
- Enabling financial innovations : Today, only about 8 percent of MSMEs are served by formal credit channels. The program will incentivize and mainstream the use of fintech and digital financial services in MSME lending and payments. Digital platforms will play an important role by enabling lenders, suppliers, and buyers to reach firms faster and at a lower cost, especially small enterprises who currently may not have access to the formal channels.

Importance:

- MSME sector is central to India's growth and job creation and will be key to the pace of India's economic recovery, post COVID-19.
- The immediate need is to ensure that the liquidity infused into the system by the government is accessed by MSMEs.
- Equally important is to strengthen the overall financing ecosystem for MSMEs.
- This operation seeks to achieve both these objectives by furthering the role of NBFCs and SCBs as effective financial intermediaries and leveraging fintech to broaden the reach of finance into the MSME sector.

4. Agriculture Infrastructure Fund

Why in News?

- Cabinet approves Central Sector Scheme of financing facility under the 'Agriculture Infrastructure Fund'.

Agriculture Infrastructure Fund:

- The scheme shall provide a medium – long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and financial support.
- Under the scheme, Rs. One Lakh Crore will be provided by banks and financial institutions as loans to:
 1. Primary Agricultural Credit Societies (PACS)

2. Marketing Cooperative Societies
 3. Farmer Producers Organizations (FPOs)
 4. Self Help Group (SHG)
 5. Farmers
 6. Joint Liability Groups (JLG)
 7. Multipurpose Cooperative Societies
 8. Agri-entrepreneurs
 9. Startups
 10. Aggregation Infrastructure Providers
- Central/State agency or Local Body sponsored Public Private Partnership Project
 - Loans will be disbursed in four years starting with the sanction of Rs. 10,000 crore in the current year and Rs. 30,000 crore each in the next three financial years.
 - All loans under this financing facility will have an interest subvention of 3% per annum up to a limit of Rs. 2 crore.
 - This subvention will be available for a maximum period of seven years.
 - Further, credit guarantee coverage will be available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crore.
 - The Project by way of facilitating formal credit to farm and farm processing-based activities is expected to create numerous job opportunities in rural areas.
 - The Fund will be managed and monitored through an online Management Information System (MIS) platform.
 - It will enable all the qualified entities to apply for a loan under the Fund.
 - The online platform will also provide benefits such as transparency of interest rates offered by multiple banks, scheme details including interest subvention and credit guarantee offered, minimum documentation, faster approval process as also integration with other scheme benefits.
 - The duration of the Scheme shall be from FY2020 to FY2029 (10 years).

5. Guntur Chilli

Why in News?

- For the first time, the Indian Railways loads Special Parcel Train to Bangladesh carrying Dry Chillies from Reddipalem in Guntur District of Andhra Pradesh state.

Guntur Chillies:

- Guntur and its surrounding areas in the state of Andhra Pradesh are well known for chillies cultivation.
- The quality of this farm produce is internationally renowned for its uniqueness in taste and brand.
- Guntur chillies are exported to Canada, Asia and Europe.
- Guntur district is the main producer and exporter of most varieties of chillies and chilli powder from India to countries like Sri Lanka, Bangladesh, Middle East, South Korea, U.K. and USA & Latin America.
- Chillies have various colours and flavours because of the level of Capsaicin in them.
- Guntur chillies form an important part of curries and various popular dishes of Andhra Pradesh.
- The main trading place for Guntur chilli is called Guntur Mirchi Yard which is also Asia's largest dried red chilli market.
- There are various types of Guntur chilli.
- The Guntur Sannam Chilli is a variety which has the Geographical Indication (GI) Tag.
- Guntur Sannam chilli requires a warm and humid climate for its growth and dry weather during the period of maturation.
- Sannam chilli belongs to the variety of Capsicum annum.
- This chilli has a thick skin and it is generally long (5 – 15 cm in length).
- Globally, India stands first in the production of chilli and in India, Andhra Pradesh leads in its production. Andhra Pradesh alone commands 46% of the chilli production in India.

6. National Fish Farmers Day

Why in News?

- National Fish Farmers Day 2020 was celebrated by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying.

Highlights:

- National Fish Farmers Day is celebrated on 10th July every year in remembrance of scientists Dr K. H. Alikunhi and Dr H.L. Chaudhury who successfully demonstrated the technology of induced breeding (Hypophysation) in Indian Major Carps on 10th July 1957 at the erstwhile 'Pond Culture Division' of CIFRI at Cuttack, Odisha (presently Central Institute of Freshwater Aquaculture, CIFA, Bhubaneswar).

Fish Cryobanks:

- Fish Cryobanks is a storage facility facilitating all-time availability of fish sperms of desired species to fish farmers.
- It will enhance fish production and productivity.
- The Cryomilt technology developed by the National Bureau of Fish Genetic Resources in support with the National Fisheries Development Board would be helpful in the establishment of Fish Cryobanks.

Pradhan Mantri Matsya Sampada Yojana (PMMSY):

- It will be implemented as an umbrella scheme and was launched with the investment of Rs. 20,050 crores during the next five years.
- The scheme will address the critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernisation and strengthening of the value chain, traceability, establishing a robust fisheries management framework and fishermen's welfare.
- It has two separate Components namely (a) Central Sector Scheme (CS) and (b) Centrally Sponsored Scheme (CSS).

7. Unified Gas Price System

Why in News?

- The Government is planning to rationalise tariffs for the transportation of natural gas. There would be one price for those transporting gas nearby within 300 km and one price for those transporting gas beyond 300km.

Highlights:

- Currently, tariffs for transportation of gas are set by the Petroleum and Natural Gas Regulatory Board(PNGRB) separately for each pipeline based on the assumptions of the volume of gas transported on the pipeline and its operating life aimed at providing the operator with a pre-tax return of 18%.
- The tariffs for pipeline usage are divided into zones of 300km, with the tariff increasing for zones further away from the point where gas is injected. Since all of India's imported natural gas arrives at terminals on the west coast, this leads to increased cost for buyers located in the east.
- Additionally, if a buyer needs multiple pipelines even from the same operator, that transport tariff would increase.

Possible Implications:

- Benefit consumers in parts of the country far from the western coast.
- It could boost the share of natural gas in India's energy basket from around 6 per cent currently to 25 per cent by 2030.
- The cost of Gas Transportation Closer to the Points of Gas Injection might go up.

8. India Energy Modelling Forum

Why in News?

- The joint working group meeting of the Sustainable Growth Pillar, an India Energy Modelling Forum was launched.
- It was co-chaired by NITI Aayog and USAID.

Highlights:

- The India Energy Modelling Forum aims to:
 - ✓ Provide a platform to examine important energy and environmental related issues.
 - ✓ Inform decision-making process to the Indian government.
 - ✓ Improve cooperation between modelling teams, government, and knowledge partners, funders.
 - ✓ Facilitate the exchange of ideas, ensure the production of high-quality studies.
 - ✓ Identify knowledge gaps at different levels and across different areas.
 - ✓ Build the capacity of Indian institutions.
- The SG pillar entails energy data management, energy modelling and collaboration on low carbon technologies as three key activities.
- NITI Aayog will initially coordinate the activities of the forum and finalizing its governing structure. The forum would include knowledge partners, data agencies and concerned Government Ministries.

9. Jaigaon-Ahllay trade route

Why in News?

- Recently, India and Bhutan launched a new route that operates between Jaigaon in West Bengal and Ahllay in Bhutan.

Expected Benefits:

- Boost bilateral trade and commerce.

- Beneficial for the movement of heavy vehicles like trucks and industrial raw materials from India to Bhutan.
- Decongest vehicular traffic along the Jaigaon-Phuentsholing route.

India-Bhutan Trade:

- India is Bhutan's largest trading partner. The bilateral trade stood at Rs 9,227 crore in 2018.
- Bhutan imports mineral products, machinery and mechanical appliances, electrical equipment, base metals, vehicles, vegetable products, plastics and articles from India.
- Bhutan exports electricity, portland cement, dolomite, timber and wood products, potatoes, cardamom and fruit products to India.

Kholongchhu (joint venture) Hydroelectric Project:

- Hydropower sector is the flagship area of India-Bhutan bilateral cooperation.
- The run-of-the-river project is located on the lower course of the Kholongchhu river in Trashiyangtse district of eastern Bhutan.
- The project envisages an underground powerhouse of four 150 MW turbines, with water impounded by a concrete gravity dam of 95 metres height.
- It will be implemented by Kholongchhu Hydro Energy Limited, a joint venture company formed between Druk Green Power Corporation of Bhutan and Satluj Jal Vidyut Nigam of India.

10. Form 26AS

Why in News?

- New Form 26AS is the Faceless hand-holding of the Taxpayers

Form 26AS:

- Form 26AS is a consolidated annual tax statement that includes information on tax deducted/collected at source, advance tax, self-assessment that is available on the Income Tax website against a taxpayer's Permanent Account Number (PAN).
- The Budget for 2020-21 had announced the revised Form 26AS giving a more comprehensive profile of the taxpayer going beyond the details of tax collected and deducted at source.

What are the details in Form 26AS?

- The Central Board of Direct Taxes (CBDT) in a statement said the Income Tax Department used to receive information like cash deposit/withdrawal from saving bank accounts,

sale/purchase of immovable property, time deposits, credit card payments, purchase of shares, debentures, foreign currency, mutual funds, buyback of shares, cash payment for goods and services, etc. under Section 285BA of Income-tax Act, 1961 from “specified persons” like banks, mutual funds, institutions issuing bonds and registrars or sub-registrars etc., with regard to individuals having high-value financial transactions since the financial year 2016.

- Now, all such information under different SFTs will be shown in the new Form 26AS
- As per Section 285BA of the Income-tax Act, filers are required to furnish a Statement of Financial Transaction for specified transactions during the financial year to the income-tax authority or such other prescribed authority.
- Banks and other prescribed reporting financial institutions in their SFTs record details of transactions involving cash deposits aggregating to Rs 10 lakh or more in a financial year, in one or more accounts (other than a current account and time deposit), cash payments made by any person totalling over Rs 1 lakh, payments of bills for one or more credit card of Rs 10 lakh or more by a person in a financial year.
- Also, investment in bond/debentures, shares, mutual funds, buyback of shares exceeding Rs 10 lakh in a financial year along with purchase or sale of immovable property for Rs 30 lakh and above by a person will be recorded in the SFTs.

Benefits:

- This would help the honest taxpayers with updated financial transactions while filing their returns, whereas it will desist those taxpayers who inadvertently conceal financial transactions in their returns.
- The new Form 26AS would also have information of transactions which used to be received up to Financial Year 2015-16 in the Annual Information Returns (AIR).

11. Delayed GST compensation

Why in News?

- Lower GST revenues have translated into delayed and pending compensation payments to states, an issue which will be central to the discussions of the GST Council meeting slated to be held later this month.

GST:

- The Centre will levy and collect the Central GST.
- States will levy and collect the State GST on the supply of goods and services within a state.

- The Centre will levy the Integrated GST (IGST) on the interstate supply of goods and services, and apportion the state's share of tax to the state where the good or service is consumed.
- The states have been guaranteed 14 per cent annual growth in GST revenue over the base year of 2015-16.
- Any shortfall has to be compensated from the receipts of Compensation Cess imposed on selected commodities that attract a GST of 28 per cent .
- At present, the cess levied on sin and luxury goods such as tobacco and automobiles flows into the compensation fund.

GST Compensation Issue:

- The pandemic effect: The Goods and Services Tax (GST) collections recorded a 41 per cent decline in the April-June quarter.
- Compensation pending: The increase in revenue in 2019-20 has been a meagre 3.8 per cent compared to the previous year.
- The result is that even after paying Rs 1.2 lakh crore as compensation, the due payments are more than Rs 1 lakh crore already.
- This raises a fundamental question: How can the gap between fund availability and fund requirement be bridged?
- Market borrowing has been discussed as one of the possible solutions for meeting the compensation gap in the GST Council though the legality of the Council to borrow will need to be explored.

Issues:

- **High 14% Rate:** The required amount to pay states started rising with a compounded 14 per cent rate which is inordinately high as compensation collections remained around the same level for two consecutive years.
- It gives states no incentive to make tax efforts of their own. Nor does it make an allowance for an economic downturn, such as the one caused by covid.
- **Adamant states:** All states are unanimous on sticking to the 14 per cent assured rate for compensation.
- **Compensation fund limited to cess only:** In the Budget for 2020-21, the Finance Minister had said that thereafter, transfers to the fund would be "limited only to collection by way of GST compensation cess".

- This declaration is against the federal consensus between the Centre and states, and the constitutional guarantee enshrined after an elaborate process.
- Section 10(1) of the Act allows for “other amounts” also to be credited to the Compensation fund with the approval of the GST Council.
- Restructuring possible after pandemic only: Tinkering of rates of rate structure under GST cannot be done till the effects of pandemic-induced slowdown continue.
- Hiking the cess rate or lowering of the guaranteed compensation rate have featured in the discussions of the GST Council meetings, but states are not in favour of either of the options.
- The bureaucratic tinkering with rates: The most recent example is that of packaged parotta being levied 18% GST, whereas its north Indian cousin, the parantha, is taxed at 5%. Such arbitrariness has resulted in confusion, uncertainty and litigation.
- Uninformed decisions: The pre-election sharp reductions in tax rates without serious examination of the revenue implications have also contributed to the fall in revenue. The current rates are not revenue neutral.
- Alcohol and petroleum: The states remain addicted to special levies on these to fill their coffers. It creates hindrances in achieving single GST slab.

Way Forward:

- **Borrowing from the market** by the GST Council and crediting it to the compensation fund:
 - ✓ The GST Council or the Compensation Fund must be empowered to borrow funds from the market and compensate the states.
 - ✓ The advantage: Since the loans are not taken by the Centre, it has no fiscal deficit implications. And the liabilities would be liquidated automatically from the collection of the Cess during the extended period.
- **Options for meeting Compensation Gap:** A paper by Vijay Kelkar (Chairman, 13th Finance Commission) has listed out following options –
 - ✓ Lowering the guaranteed rate of compensation,
 - ✓ Increasing the compensation cess,
 - ✓ Increasing the state’s share (SGST),
- **GST Reforms:**
 - ✓ A restructuring of the GST model should be considered if the losses for states continue.
 - ✓ Review of complex structure of Integrated GST

- ✓ Inclusion of petroleum products under GST
- ✓ Simplification of GST rates and minimising exemptions,
- **Independent GST Council Secretariat:**
 - ✓ GST Council's decisions should be based on
 - ✓ An estimate of the tax base,
 - ✓ The Tax Elasticity of the commercially important goods,
- The Loss anticipated by such reduction and the anticipated increase in buoyancy through reform measures.
- This can only occur through the creation of an independent GST Council Secretariat which would provide neutral, unbiased, and pertinent advice on all the Matters.

12. Increasing Gold Prices

Why in News?

- After over nine years, gold prices hit Rs 50,000 per 10 grams in India, the world's second-largest gold consumer after China.
- The host of factors like global uncertainties triggered by COVID pandemic, weak dollar, low-interest rates, and stimulus programmes have increased the Appetite for Gold.

Highlights:

- Though equity markets around the world rebounded sharply from their March lows, the high level of uncertainty surrounding the Covid-19 pandemic and the ultra-low interest rate environment supported strong flight-to-quality flows.
- Like money market and high-quality bond funds, gold benefited from investors' need to reduce risk, with the recognition of gold as a hedge fund that led to its increased demand.
- Gold is an integral part of wedding ceremonies in India and is traditionally used as a hedge against inflation and considered as a safe haven for investors during periods of uncertainties.
- Whenever stock markets, real estate, and bonds fall across the world, investors turn to gold to park their funds. The fall in the value of other asset classes and global uncertainties in the wake of Covid-19 helped gold climb to a record high.
- A key factor behind this robust performance is that the supply growth of gold has changed little over time, increasing by approximately 1.6 percent per year over the past 20 years.
- Gold, established as an investment, a reserve asset, and an adornment, is highly liquid, no one's liability, carries no credit risk, and is scarce, historically preserving its value over time.

- With prices on the rise, investors have embraced gold in 2020 as a key portfolio hedging strategy. Regardless of the recovery type, the pandemic will likely have a lasting effect on asset allocation.

13. Honey Testing Lab

Why in News?

- Union Minister of Agriculture and Farmers' Welfare inaugurated the World Class State of Art Honey Testing Laboratory in Anand, Gujarat with support of National Bee Board.

Highlights:

- The Lab was established by National Dairy Development Board (NDDB) in Anand with support of National Bee Board.
- It has all the facilities based on the parameters notified by FSSAI and the test methods/protocols developed, have been accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL).
- Honey is being adulterated with high fructose corn syrup or rice, tapioca, sugarcane and beet syrup that are cheaper and resemble honey in physico-chemical properties.
- Honey Testing Laboratory will help in quality production of honey and its export to other countries.

National Bee Board:

- The National Bee Board is registered as a society under the Societies Registration Act, 1860 in 2000 by Small Farmers' Agri-Business Consortium (SFAC).
- The overall development of Beekeeping by promoting Scientific Beekeeping in India to increase the productivity of crops through pollination.
- Increase the Honey production for increasing the income of the Beekeepers/ Farmers.

National Bee Keeping and Honey Mission:

- National Beekeeping and Honey Mission is a Central Sector Scheme (100% funded by Central Govt.).
- It is aimed at overall promotion & development of scientific beekeeping and production of quality honey & other beehive products.
- National Bee Board under the Department of Agriculture, Cooperation & Farmers Welfare, will be a National Level Nodal Agency for implementation of activities.

14. Currency swap facility with Sri Lanka

Why in News?

- The Reserve Bank of India has agreed to a \$400 million currency swap facility for Sri Lanka till November 2022.

Highlights:

- Sri Lanka owes \$960 million to India.
- Currency swaps are used to obtain foreign currency loans at a better interest rate than could be got by borrowing directly in a foreign market.
- The RBI's action follows a recent bilateral technical discussion on rescheduling Colombo's outstanding debt repayment to India.

What is a Currency Swap?

- It is a transaction in which two parties exchange an equivalent amount of money with each other but in different currencies.
- Currency swaps are often offsetting loans, and the two sides often pay each other interest on amounts exchanged.
- The purpose is to avoid exposure to exchange-rate risk, to speculate on currency moves, or to reduce the cost of borrowing in a Foreign Currency.

15. Radio-frequency Identification for Wagons

Why in News?

- Indian Railways is on a mission to RFID Tag (Radio-frequency identification) all wagons by December 2022.

Highlights:

- The Railways will complete this process of fitting radio-frequency identification tags (RFID) in all the wagons by December 2022.
- These tags will be used for tracking all wagons. Using RFID devices will be easier for the railways to know the exact position of all the wagons, locomotives and coaches.
- With the introduction of RFID, the issue of shortage of wagons, locomotives and coaches is expected to be addressed more transparently and expeditiously.
- Mechanism:
- The RFID tag will be fitted in the rolling stock, and trackside readers will be installed at stations.

- Key points will be installed along the tracks to read the tag from a distance of about two meters and transmit the wagon identity over a network to a central computer.
- In this way, each moving wagon can be identified and its movement tracked.

Radio-frequency Identification:

- RFID is a form of wireless communication that incorporates the use of electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum to uniquely identify an object, animal or person.
- Simply, it is the use of radio waves to read and capture information stored on a tag attached to an object.
- A tag can be read from up to several feet away and does not need to be within direct line-of-sight of the reader to be tracked.

16. Increasing NPAs

Why in News?

- The gross non-performing asset (NPA) ratio of all commercial banks is likely to increase from 8.5 percent in March 2020 to 12.5 percent by March 2021 under the baseline scenario in the wake of the disruption caused by the Covid-19 pandemic, according to the Reserve Bank of India (RBI).

Highlights:

- According to the RBI, nearly 50 percent of the customers, accounting for around half of outstanding bank loans, opted to avail the benefit of the relief measures, loan moratorium, to tackle the lockdown impact. Among the bank groups, the GNPA ratio of public sector banks may increase from 11.3 percent in March 2020 to 15.2 percent by March 2021 under the baseline scenario. Sectorally, the quality of bank loans to the services sector worsened in March 2020. The GNPA ratio of the retail loan sector also edged up.
- Among major sub-sectors within the industry, NPA ratios in respect of construction and gems and jewellery sectors swelled up in March 2020.
- On the other hand, the infrastructure sector (with a share of 36.2 percent in bank credit to the industrial sector), basic metals (11.3 percent), and electricity (17.5 percent) have shown a perceptible decline in NPA ratios.
- The central government finances are likely to suffer some deterioration in 2020-21, with fiscal revenues badly hit by COVID-19-related disruptions even as expenditures come under strain on account of the fiscal stimulus.

- For State finances, the additional burden of lower federal transfers may accentuate downside risks to the outlook.
- Bank credit, which had considerably weakened during the first half of 2019-20, slid down further in the subsequent period with the moderation becoming broad-based across bank groups.
- The capital to risk-weighted assets ratio of commercial banks edged down to 14.8 per cent in March 2020 from 15 percent in September 2019, while their GNPA ratio declined to 8.5 percent from 9.3 percent and the provision coverage ratio PCR improved to 65.4 per cent from 61.6 percent over this period.

17. Green-Ag Project

Why in News?

- The Union Government launched the Green-Ag Project in Mizoram, to reduce emissions from agriculture and ensure sustainable agricultural practices.
- Other states include Rajasthan, Madhya Pradesh, Odisha and Uttarakhand.
- Madhya Pradesh (Chambal Landscape), Mizoram (Dampa Landscape), Odisha (Similipal Landscape), Rajasthan (Desert National Park Landscape) and Uttarakhand (Corbett-Rajaji Landscape) are the landscapes where the project will be implemented.

Green-Ag Project:

- The Green-Ag Project is funded by the Global Environment Facility.
- The Department of Agriculture, Cooperation, and Farmers' Welfare (DAC&FW) is the national executing agency. Other key players involved in its implementation are the Food and Agriculture Organization (FAO) and the Union Ministry of Environment, Forest and Climate Change (MoEF&CC).
- The project seeks to mainstream biodiversity, climate change, sustainable land management objectives and practices into the agriculture sector.
- The project is designed to achieve multiple global environmental benefits in at least 1.8 million hectares (ha) of land in five landscapes, with mixed land-use systems.
- It aims to bring at least 104,070 ha of farms under sustainable land and water management.
- The pilot project is supposed to end on March 31, 2026, in all states.

Expected Outcomes:

- Ensure 49 million Carbon dioxide equivalent (CO₂eq) sequestered or reduced through sustainable land use and agricultural practices.
- Help local people take advantage of the rich agro-biodiversity.
- Promotion of Secondary Agriculture
- Establishment of Green Value Chains

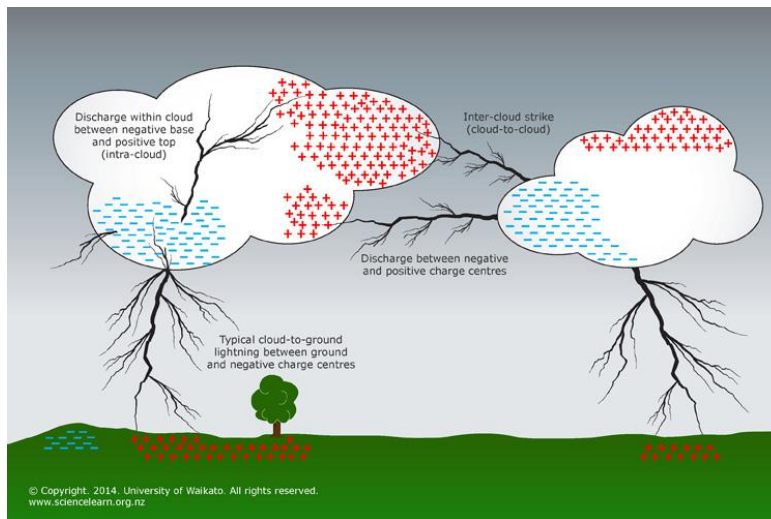


5. GEOGRAPHY & ENVIRONMENT

1. Lightning Strikes

Why in News?

- The World Meteorological Organization declared recently that Brazil recorded a lightning strike that travelled a distance of 709 kilometres, while Argentina recorded a strike that lasted for 16.73 seconds.



Highlights:

- Brazil has the highest incidence of lightning in the world — an average of 77.8 million strikes per year.
- These lightning flashes are known as Megaflashes in scientific parlance and defined as horizontal mesoscale lightning discharges that reach hundreds of kilometres in length.
- Uttar Pradesh, India witnesses the maximum number of deaths due to lightning, with Bihar at second place. According to WMO: If the time between a lightning flash and thunder is less than 30 seconds, people should stay indoors and wait 30 minutes after the last observed flash to resume outdoor activities.

Lightning:

- Lightning is a very rapid and massive discharge of electricity in the atmosphere, some of which is directed towards the Earth's surface.
- These discharges are generated in giant moisture-bearing clouds that are 10-12 km tall.

How dangerous is lightning?

- Lightning is the biggest contributor to accidental deaths due to natural causes, but the least Studied atmospheric phenomena in the country.

- Several thousand thunderstorms occur over India every year and each can involve several — sometimes more than a hundred — lightning strikes.
- Indian Institute of Tropical Management (IITM) Pune, works full-time on thunderstorms and lightning.

How does a Lightning strike?

- The moisture-bearing clouds where lightning generates are 10-12 km tall. The base of these clouds lies within 1-2 km of the Earth's surface while their top is 12-13 km away.
- Temperatures towards the top of these clouds are in the range of minus 35 to minus 45 degrees Celsius.
- As water vapour moves upward in the cloud, the falling temperature causes it to condense and heat is generated in the process, which pushes the molecules of water further up.
- As the water vapour moves to temperatures below zero degrees Celsius, the water droplets change into small ice crystals.
- The water vapours continue to move up, gathering mass — until they are so heavy that they start to fall to Earth.
- This leads to a system in which, simultaneously, smaller ice crystals are moving up and bigger crystals are coming down.
- Thus as a result of collisions, the electrons are released, the moving free electrons cause more collisions and more electrons, and a chain reaction starts.

Formation of an Electrical Potential Difference:

- As a result of the process, the top layer of the cloud gets positively charged, while the middle layer is negatively charged.
- The electrical potential difference between the two layers is huge — of the order of a billion to 10 billion volts.
- In very little time, a massive current, of the order of 100,000 to a million amperes, starts to flow between the layers.
- An enormous amount of heat is produced, and this leads to the heating of the air column between the two layers of the cloud.
- As the heated air column expands, it produces shock waves that result in thunder.

How does this current reach the Earth from the cloud?

- The Earth is a good conductor of electricity but is electrically neutral.
- However, in comparison to the middle layer of the cloud, it becomes positively charged.
- As a result, about 15%-20% of the current gets directed towards the Earth as well.

- It is this flow of current that results in damage to life and property on Earth.

Why there is a Probability of Lightning striking tall objects?

- Tall objects such as trees, towers or buildings face a greater threat of being strike by lightning. Once it is about 80-100 m from the surface, lightning tends to change course towards these taller objects.
- This happens because air is a poor conductor of electricity, and electrons that are travelling through air seek both a better conductor and the shortest route to the Earth's surface.
- Tall objects provide the shortest route to the relatively positively charged Earth's surface.

2. Wolf spiders & Globe Andersoni

Why in News?

- According to a new study, wolf spiders in the Arctic tundra are beginning to reproduce more as a result of the Warming Climate.

Highlights:

- A team of researchers from a University in Denmark analysed data of wolf spiders captured for 20 years at the Zackenberg Research Station in north-eastern Greenland.
- They found that the wolf spiders produced two egg sacs in which they carry their eggs. This behaviour although observed in warmer latitudes had not been observed this far in the Arctic.
- It raises the concerns regarding the increase in offspring of spiders and their impact on food chains in the region in the Future.

Globe Andersoni:

- The Globe andersoni is commonly known as Dancing Ladies or Swan Flower.
- The researchers from Pune and Kozhikode discovered the plant in the Sevoke Hill Forest in July 2011. The area is located in northern West Bengal.
- The plant was last seen 136 years ago and usually grows on rocky slopes of evergreen forests.
- It was revealed in their paper that was recently published.

3. Central Zoo Authority

Why in News?

- The Environment Ministry has reconstituted the Central Zoo Authority (CZA) to include an expert from the School of Planning and Architecture, Delhi, and a molecular biologist.

Central Zoo Authority:

- The CZA is a statutory body chaired by the Environment Minister and tasked with regulating zoos across the country.
- The authority lays down guidelines and prescribes rules under which animals may be transferred among zoos nationally and internationally.
- Apart from the chairman, it consists of 10 members and a member-secretary.
- Almost all of them are officials in the Environment Ministry and non-government experts are those who are wildlife conservationists or retired forest officers.

Zoo:

- As per Section 2 (39) of the Wildlife (Protection) Act, 1972, Zoo means an establishment, whether stationary or mobile, where captive animals are kept for exhibition to the public and include a circus and rescue centres but do not include an establishment of a licensed dealer in captive animals.
- Purpose for the creation of the Central Zoo Authority:
- The Zoos in India are managed as per the provisions of the Wild Life (Protection) Act, 1972 and guided by the National Zoo Policy, 1998.
- The Government of India established the Central Zoo authority in the year 1992 to oversee the functioning of Zoos in the country and to control mushrooming of ill-planned and ill-conceived Zoos.
- Only such zoos are to be allowed to operate that are recognised and maintain animals following the norms and standards prescribed by the Zoo Authority keeping into Consideration the Welfare of the Animals.

4. Urban Forests

Why in News?

- The office of the Comptroller and Auditor General of India located at Bahadur Shah Zafar Marg has taken steps to establish an Urban Forest in the Office Park.

Highlights:

- This would be a dense urban forest with multiple tree layers including 12000 saplings of 59 indigenous species in another year or so.
- The Miyawaki method of forest creation is employed which could help in reducing the temperature by as much as 14 degrees & increase the moisture by more than 40%.

- With minimal maintenance, including watering and de-weeding, the urban forest will be self-sustainable by October 2021.
- A dense forest ecosystem will be created in an area that is little over 1 acre in size.
- The multi-layered forest will have shrubs, small to medium-size trees and tall trees carefully arranged as peripheral and core plant communities.

Urban Forests:

- Urban Forestry concentrates on all tree-dominated as well as other green resources in and around urban areas, such as woodlands, public and private urban parks and gardens, street tree and square plantations, botanical gardens and cemeteries.
- The forest is made up of trees which are native to the area and are three dimensional, multi-layered communities having 30 times the surface area of the greenery of single-layered lawns, and have more than 30 times the ability to protect against natural disasters and to conserve the environment.
- The Urban forests are the lungs of the cities and act as an oxygen bank and Carbon Sink and send out an action-oriented message of bringing back lost environmental protection forests. They have an ecosystem which can restore habitat for birds, bees, Butterflies and microfauna.
- These are essential for pollination of crops and fruits and to help Maintain a Balanced Ecosystem

Nagar Van Scheme:

- The Ministry of Environment and Forests has launched the Nagar Van Scheme on the occasion of World Environment Day on 5 June.
- The scheme aims to develop 200 Urban Forests across India in the next five years.
- The forests will be developed with the help of people's participation and collaboration between the Forest Department, Municipal bodies, NGOs, Corporates and local citizens.

5. Tillari Conservation Reserve

Why in News?

- The Maharashtra state forest department recently declared 29.53 sq. km area of Dodamarg forest range in Sindhudurg district as Tillari Conservation Reserve.

Highlights:

- The area is known to serve as a corridor and even as a habitat for the population of tigers and elephants moving between the three states of Goa, Karnataka and Maharashtra.

- The 38-km-long Dodamarg wildlife corridor that connects Radhanagari Wildlife Sanctuary in Maharashtra to Bhimgad Wildlife Sanctuary in Karnataka frequently witnesses elephant and tiger movement.
- Tillari will be the seventh corridor in the state to be declared as a conservation reserve.

Conservation Reserves:

- Conservation reserves denote protected areas of India which typically act as buffer zones to or connectors and migration corridors between established national parks, wildlife sanctuaries and reserved and protected forests of India.
- Such areas are designated as conservation areas if they are uninhabited and completely owned by the Government of India but used for subsistence by communities and community areas if part of the lands are privately owned.
- These protected area categories were first introduced in the Wildlife (Protection) Amendment Act of 2002 – the amendment to the Wildlife Protection Act of 1972.
- These categories were added because of reduced protection in and around existing or proposed protected areas due to private ownership of land, and land use.

6. Plastic waste management in pandemic

Why in News?

- The threat posed by plastic waste to the environment is well established. The corona pandemic has led to an increase in Plastic Waste.

Highlights:

- In 2018, a report by McKinsey estimated that, globally, we generate 350 million tonnes of plastic waste.
- Only 16 per cent of it is recycled.
- Today, due to pandemic the amount of plastic waste we are generating is much higher than that estimated in the McKinsey report.
- The Guardian recently reported that there are possibly more masks than jellyfish in the oceans today.
- Management of plastic in India
- We have the Plastic Waste Management Rules of 2016, which were updated and amended in 2018.
- In fact, India saw incredible momentum in its fight for effective management of plastic waste in the last year.

- The Prime Minister made clarion calls for a jan andolan (people's movement) to curb the use of single-use plastic(SUP).
- Jan andolan was also to ensure proper disposal of all plastic waste.
- Also, the entire country rallied together under the banner of the Swachhata Hi Seva campaign.

Why Single-use Plastic is Different:

- Plastic is not the problem, our handling of it is.
- We need plastic, but not SUP, which is difficult to dispose of effectively, and that is where the problem lies.
- It is important to understand this distinction.
- By understanding this distinction we may change our behaviour and our lifestyles, to balance our need for plastic with effectively managing its waste.

Way Forward:

- One way to approach the issue is to treat it not just as an environmental problem but as an economic opportunity.
- We require new business models which are designed for sustainability.
- In Uganda, they are melting plastic waste to make face shields which are being sold for just a dollar each.
- But, most of all, we need a tectonic shift in the behaviour of consumers.
- We need consumers to care about their role in the plastic waste value chain.
- Under phase 2 of the Swachh Bharat Mission (Grameen) village communities are now starting to plan for setting up waste collection and segregation systems, with material recovery facilities at the block- level.
- Change is possible when we take necessary steps to Refuse, Reduce, Reuse, Recycle and, when all else fails, Remove, or dispose of plastic waste safely and effectively.

7. E-waste to increase by 38% by 2030

Why in News?

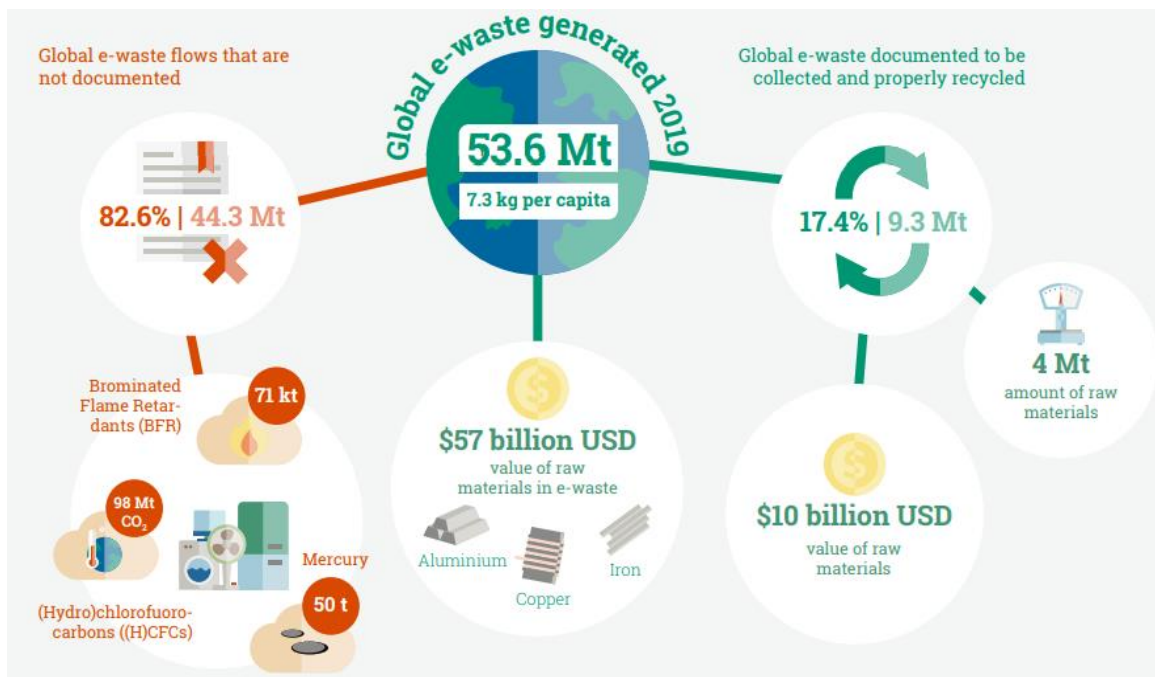
- As per a new United Nations University report, Global e-waste — discarded electrical and electronic equipment — will increase by 38 % between 2020 and 2030.

Highlights:

- There was 53.6 million tonnes (MT) e-waste in 2019.

- Asia generated the greatest volume of e-waste in 2019 (24.9 MT), followed by the Americas and Europe.
- Most E-waste in 2019 consisted of small equipment, large equipment and temperature exchange equipment.
- Less than 18 % of the e-waste generated in 2019 was collected and recycled.
- E-waste consisting of gold, silver, copper, platinum and other high-value, recoverable materials worth at least \$57 billion was mostly dumped or burned rather than being collected for treatment and reuse.
- The number of countries that have adopted a national e-waste policy, legislation or regulation has increased from 61 to 78 and includes India.

E-waste:



- E-waste is a health and environmental hazard, containing toxic additives or hazardous substances such as mercury, which damages the human brain and/or coordination system.
- Structured management of electronic waste (e-waste) in India is nascent and is mandated under the E-Waste (Management) Rules, 2016.
- Some of the salient features of the rules include e-waste classification, extended producer responsibility (EPR), collection targets (EPR) and restrictions on import of e-waste containing hazardous materials.
- E-waste is categorised into 21 types under two broad categories: Information technology and communication equipment and consumer electrical and electronics. These include their components, consumables, parts and spares.

E-waste recycling in India:



- There are 312 authorised recyclers of e-waste in India, with the capacity for treating approximately 800 kilotonnes annually.
- Formal recycling capacity remains under-utilised, as the large majority of the waste is still handled by the informal sector.
- About 90 % of the country's e-waste is recycled in the informal sector.
- India needs an effective implementation of regulations for managing the e-waste.
- It can be done through identifying and promoting cooperatives and expanding the scope of the 2016 E-Waste (Management) Rules to these cooperatives or the informal sector workers.

Awareness Programme on Environmental Hazards of Electronic waste:

- The Ministry of Electronics and Information Technology has initiated the project Awareness Programme on Environmental Hazards of Electronic waste on March 31, 2015.
- This project is under the Digital India initiative of the Government of India and focuses on reuse and recycling of e-waste, which has the potential to conserve natural resources.
- The project has three components viz., Content Development, Inventory Assessment and Awareness Generation amongst different stakeholders.
- The project will help in effective implementation of E-waste Management, 2016.
- MietY has played a key role in the dissemination of knowledge on e-waste rules in the past and wishes to engage all key stakeholders during this exercise.

8. Severe impact of COVID-19 on SDGs

Why in News?

- COVID-19 will have severe negative impacts on most of the United Nations-mandated Sustainable Development Goals (SDGs), according to a report that has tracked the progress of 166 countries since 2015.

Highlights:

- The SDGs are a collection of 17 global goals designed to be a blueprint to achieve a better and more sustainable future for all. The subsequent socio-economic crisis after COVID-19 has affected all countries, including high-income ones in Europe and North America.
- As a result of lockdown, many economic activities were shut down, leading to massive losses to the economy and loss of jobs, with maximum impact on vulnerable groups.

Negative Impact:

- **The report said COVID-19 had negatively affected several goals including:**
 - ✓ SDG 1 (no poverty)
 - ✓ SDG 2 (zero hunger)
 - ✓ SDG 3 (good health and wellbeing)
 - ✓ SDG 8 (decent work and economic growth)
 - ✓ SDG 10 (reduced inequalities)

Immediate Relief:

- **At the same time, the pandemic had brought “immediate relief” in areas related to:**
 - ✓ SDG 12 (responsible consumption and production)
 - ✓ SDG 13 (climate action)
 - ✓ SDG 14 (life below water)
 - ✓ SDG 15 (life on land)
- However, these gains will be short-term.

India and SDG:

- India ranked at 117/166 countries, with a score of 61.9 out of 100.
- It ranked below two South Asian nations — Pakistan and Afghanistan.
- India faces major challenges in 10 of the 17 SDGs which include — zero hunger, good health, gender inequality among others.
- There are significant challenges in another three SDGs — no poverty (SDG 1), Life below water (SDG 14) and Life on land (SDG 15).

9. Saiga antelope, Sasa kurilensis & Fungi Species

Why in News?

- The saiga antelope population in Kazakhstan got a big boost with recent mass calving.

Saiga antelope:

- The Saiga antelope of Asia's steppes is the smallest and most threatened population of saiga in Kazakhstan.
- The subspecies is only found in one region in Russia and three areas in Kazakhstan.
- The species has experienced its largest mass calving in recent years.
- IUCN status: Critically Endangered.

Sasa kurilensis:

- Alpine plants growing in the mountainous regions of Japan have come under threat due to the sudden growth of dwarf bamboo, that has been aided by global warming.
- Due to global warming, snow is melting faster and the soil is drying up in these regions.
- The dwarf bamboo species, Sasa kurilensis blocks the sun's rays and prevents other plants from performing photosynthesis.
- It also absorbs a large amount of water, drying up the soil and preventing alpine plants from growing in wetland areas.
- Moreover, rising temperatures are causing alpine plants to flower earlier, disturbing their balance with the insects that pollinate them.

Four New Fungi Species:

- A group of researchers in China has led to the discovery of four novel fungal species on bat carcasses.
- The expedition was undertaken in an underground limestone karst system.
- The four new species are Mortierella rhinolophicola; M multispora; M yunnanensis; and Neocosmospora pallidimors.

10. India's Efforts with respect to tackling Climate Change

Why in News?

- The fourth edition of the Ministerial on Climate Action with representatives of about 30 countries was held virtually recently.
- The Union Minister for Environment, Forests and Climate Change highlighted India's

Efforts:

- India has achieved a reduction of 21% in the emission intensity of its GDP between 2005 and 2014, thereby achieving its pre-2020 voluntary target.
- India's renewable energy installed capacity has increased by 226% in the last 5 years and stands more than 87 Gigawatt. The share of non-fossil sources in installed capacity of electricity generation increased from 30.5% in March 2015 to 37.7% in May 2020. India has plans to increase its renewable energy capacity to 450 GW.
- 80 million LPG connections in rural areas
- India's total forest and tree cover is 8,07,276 sq. km. which is 24.56% of the total geographical area of the country
- More than 360 million LED bulbs have been distributed under UJALA scheme, which has led to an energy saving of about 47 billion units of electricity per year and reduction of 38 million tonnes of CO₂ per year.
- India has also leapfrogged from Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI) emission norms by April 1, 2020, which was earlier to be adopted by 2024.
- Under Smart Cities Mission, Climate-Smart Cities Assessment Framework 2019 has been launched which intends to provide a clear roadmap for cities and urban India towards combating climate change through the adoption of both mitigation and adaptation measures.

Challenges:

- The developed countries need to mobilize their promised USD 1 trillion by 2020 are yet to implement the financial and technological commitments under UNFCCC and Paris Agreement.

11. Evidence of Ocean Mixing

Why in News?

- A new research has provided the first direct evidence for the Gulf Stream blender effect, identifying a new mechanism of mixing water across the swift-moving current.
- The results have important implications for weather, climate, and fisheries because ocean mixing plays a critical role in these processes.

Highlights:

- The churning along the edges of the Gulf Stream across areas as small as a kilometer could be a leading source of ocean mixing between the waters on either side of the current.

- As the Gulf Stream courses its way up the east coast of the U.S. and Canada, it brings warm salty water from the tropics into the North Atlantic.
- But the current also creates an invisible wall of water that divides two distinct ocean regions: the colder, fresher waters along the northern edge of the Gulf Stream, and the warmer, saltier waters on the southern edge of the current.
- By showing that small-scale mixing across the Gulf Stream may have a significant impact, the new study reveals an important, under-recognized contributor to ocean circulation, biology, and potentially climate.
- The Gulf Stream plays an important role in what's known as the ocean biological pump—a system that traps excess carbon dioxide, buffering the planet from global warming.
- In the surface waters of the Gulf Stream region, ocean mixing influences the growth of phytoplankton—the base of the ocean food web. This phytoplankton absorbs carbon dioxide near the surface and later sink to the bottom, taking carbon with them and trapping it in the deep ocean.

Gulf Stream:

- The Gulf Stream is one of the largest drivers of climate and biological productivity from Florida to Newfoundland and along the western coast of Europe.
- It is part of the North Atlantic Gyre and formed due to ocean circulation. Its presence has led to the development of strong cyclones of all types, both within the atmosphere and within the ocean.

12. India's Tiger Census

Why in News?

- India's Tiger Census sets a New Guinness Record for being the world's largest camera trap wildlife survey.

Highlights:

- The fourth cycle of the All India Tiger Estimation 2018, results of which were declared on Global Tiger Day last year has entered the Guinness World Record for being the world's largest camera trap wildlife survey.
- The fourth iteration of the survey – conducted in 2018-19 – was the most comprehensive to date, in terms of both resource and data amassed.

- Camera traps (outdoor photographic devices fitted with motion sensors that start recording when an animal passes by) were placed in 26,838 locations across 141 different sites and surveyed an effective area of 121,337 square kilometres (46,848 square miles).
- In total, the camera traps captured 34,858,623 photographs of wildlife (76,651 of which were tigers and 51,777 were leopards; the remainder were other native fauna).
- From these photographs, 2,461 individual tigers (excluding cubs) were identified using stripe-pattern-recognition software.

All India Tiger Estimation:

- The All India Tiger Estimation done quadrennially is steered by the National Tiger Conservation Authority with technical backstopping from the Wildlife Institute of India and implemented by State Forest Departments and partners.
- The latest results of 2018 has shown that India now has an estimated 2967 tigers out of which 2461 individual tigers have been photo captured, a whopping 83 % of the tiger population.

13. United Nations High-level Political Forum (HLPF) on Sustainable Development, 2020

Why in News?

- NITI Aayog presents India's second Voluntary National Review at UN's High-Level Political Forum.

Highlights:

- The NITI Aayog presented India's second Voluntary National Review (VNR) at the United Nations High-level Political Forum (HLPF) on Sustainable Development, 2020.
- The India VNR 2020 report is titled "Decade of Action: Taking SDGs from Global to Local".

India VNR 2020 Report:

- The report is titled "Decade of Action: Taking SDGs from Global to Local".
- The report is a comprehensive account of the adoption and implementation of the 2030 Agenda in India.
- Apart from presenting a review of progress on the 17 SDGs, the report discusses at length the policy and enabling environment, India's approach to localising SDGs, and strengthening means of implementation.

United Nations HLPF:

- The HLPF meets annually in July for eight days under the auspices of the Economic and Social Council (ECOSOC) of the United Nations.
- The VNRs presented by Member States at the HLPF are a critical component of the review of progress and implementation of the 2030 Agenda and the SDGs.
- The establishment of the United Nations High-level Political Forum on Sustainable Development (HLPF) was mandated in 2012 by the outcome document of the United Nations Conference on Sustainable Development (Rio+20), “The Future We Want”.
- The first meeting of the HLPF was in 2013. It replaced the Commission on Sustainable Development, which had met annually since 1993.
- The HLPF is the main United Nations platform on sustainable development and it has a central role in the follow-up and review of the 2030 Agenda for Sustainable Development the Sustainable Development Goals (SDGs) at the global level.
- The theme of the HLPF 2020 is “Accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development”.
- 47 countries carried out VNRs in the 2020 Meeting.

14. Mizoram Quake Zone

Why in News?

- Recently, Mizoram experienced at least eight moderate earthquakes ranging from 4.2 to 5.5 on the Richter scale.

Highlights:

- Mizoram is located between two geological faults namely Churachandpur Mao Fault and the Mat Fault. The Churachandpur Mao Fault is named after two places in Manipur and runs north-south into Myanmar along the border of Champhai.
- The Mat Fault runs northwest-southeast across Mizoram, beneath river Mat near Serchhip. Additionally, there are several shallower transverse or minor faults in between these two major faults that are deeper.

Faults:

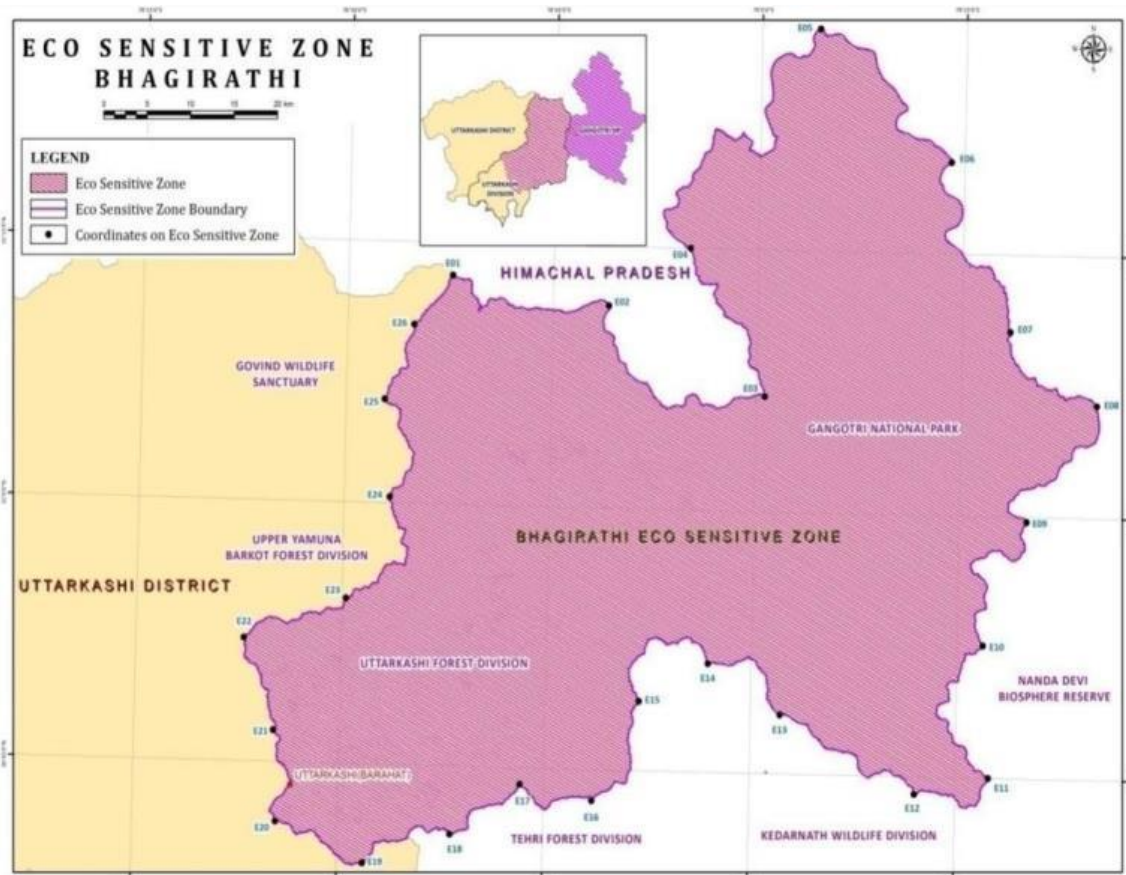
- Faults are discontinuities or cracks that are the result of differential motion within the earth’s crust. Vertical or lateral slippage of the crust along the faults causes an earthquake.
- A fault is a fracture or zone of fractures between two blocks of rock. Faults allow the blocks to move relative to each other. This movement may occur rapidly, in the form of an earthquake – or may occur slowly, in the form of creep.

- Faults may range in length from a few millimetres to thousands of kilometres.
- Most faults produce repeated displacements over geologic time.
- The fault surface can be horizontal or vertical or some arbitrary angle in between.
- During an earthquake, the rock on one side of the fault suddenly slips with respect to the other.

15. Approval accorded to ZMP of Bhagirathi Eco-Sensitive Zone

Why in News?

- The union environment ministry has approved the zonal master plan (ZMP) for the Bhagirathi eco-sensitive zone.



Eco-Sensitive Zones:

- Eco-Sensitive Zones are areas within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries.
- The purpose of declaring eco-sensitive zones around protected areas is for creating some kind of a 'Shock Absorber' for the protected area.
- These zones are the areas around protected areas to prevent ecological damage caused due to developmental activities around National Parks and Wildlife Sanctuaries.

- The Ministry of Environment and Forests designate any area as Eco-sensitive zone under Environment Protection Act 1986.
- Activities such as Commercial mining, major hydroelectric projects, commercial use of wood etc. are restricted while Felling of trees, establishment of hotels and commercial use of natural water are restricted activities. Ongoing agricultural practices, rainwater harvesting, organic farming, use of renewable energy sources are allowed in Eco-sensitive zone.

Background:

- In 2010, the government cancelled three hydropower projects (Loharinag Pala, Pala Maneri & Bhairon Ghati) on the upper stretch of the Bhagirathi – Ganga to protect the fragile ecology of the origin of Ganga.
- In 2012, it also issued a notification to declare 135 km stretch from Gaumukh to Uttarkashi as an eco-sensitive zone under the environmental protection act 1986.
- The notification sought to restrict hydropower projects of over 2 MW, riverbed mining and change of land use.
- The notification was however amended in 2018 following Uttarakhand government's objections that the notification was 'anti-development.'
- The amended notification allowed land use change to meet the local needs including civic amenities and other infrastructure development.
- It also allowed cutting of hills in eco-sensitive areas in exceptional cases for the benefit of the community.
- It mandated the State Government of Uttarakhand to prepare zonal master plan (ZMP) to be implemented under the supervision of the Monitoring Committee.

Significance of approval of ZMP of Bhagirathi eco-sensitive zone:

- The ZMP is based on watershed approach and includes forest and wildlife, watershed irrigation, energy, tourism etc.
- Watershed Management is a holistic approach to managing water resources for quantity and quality within a watershed. It is a participatory planning following a bottom-up approach for developing a plan for execution, strengthening of local level institution, and management of watershed's natural resources.
- The approval of ZMP will give a boost to conservation and ecology of the area and also to undertake developmental activities as permitted under ZMP.

- The approval will also pave way for faster execution of the Chardhaam Project (an under construction two-lane National Highway to connect Badrinath, Kedarnath, Gangotri and Yamunotri.)

Concerns:

- Approval of the ZMP could make the entire Bhagirathi region extremely vulnerable to natural disasters.
- The Himalayas are extremely fragile mountains. The rocks still haven't consolidated completely. Hill cutting might destabilise hills, if there is forest debris flow into the river, making the entire region extremely vulnerable to landslides.
- Beyond 1800 to 2000 metres, altitude is mostly moraines (unconsolidated glacial debris). If there is a cloudburst these will add to landslides.
- Himalayas are in seismic zone V a major earthquake can happen anytime

16. Heatwaves, floods, droughts: projections for India in coming decades

Why in News?

- The first 'Assessment of Climate Change over Indian Region' was recently released by the Ministry of Earth Sciences.
- The projections are for the decades leading to the end of the 21st century.

Temperature:

- Surface air temperature over India has risen by 0.6°C per year during 1901-2018.
- Regions of North India have undergone warming more than the South, where warming has been mainly during winters.
- Every decade between 1951-2015 had 7.4 warmer days and 3.1 warmer nights than the annual averages for daily maximum and nightly minimum respectively.
- The frequency of warm days is projected to increase by 55% and that of warm nights by 70%, relative to 1976- 2005.
- In coming decades, the average duration of heatwaves during April-June is projected to double, and their frequency to rise by 3 to 4 times compared to 1976-2005.
- Average temperature over India is projected to rise by 4.4°C, relative to the average temperature during 1976-2005.
- Sea surface temperatures on the tropical Indian Ocean have been rising by an average 1°C annually over 1951-2015.

Monsoon:

- During 1951-2015, annual rainfall over India declined between 1-5 mm over central India, Kerala and the far Northeast regions.
- Contrarily, precipitation increased over J&K and Northwest India.

Droughts and Floods:

- Since the 1950s, the frequency and intensity of both heavy rainfall events and dry days have gone up. These trends are prominent over Central India and South Peninsular regions during the southwest monsoon (June-September) and northeast monsoon (October-December) respectively.
- Since 1901, India has experienced 22 droughts during monsoon. Central India, Kerala, and some areas in South Peninsular and Eastern India experienced at least two droughts during 1901-2016.
- Projection: Eastern India could face two more droughts per decade compared to what was experienced during 1976-2005, while the Southern Peninsula is projected to experience one or two droughts fewer.
- Flood risks are higher over the east coast, West Bengal, eastern Uttar Pradesh, Gujarat, Konkan and cities like Mumbai, Chennai and Kolkata.
- The Himalayan flood basins are projected to greater floods, due to the faster glacial and snow melting.

Sea Level:

- During 1993-2015, the sea level over the North Indian Ocean (Arabian Sea and Bay of Bengal) rose by 3.3 mm per year, which is in tune with the Global Mean Sea Level (GMSL) rise.
- By 2030, some 340 million coastal residents of the North Indian Ocean and its islands would be exposed to coastal hazards.

Tropical Cyclones:

- Before the 1950s, 94 severe cyclonic storms formed in the Bay of Bengal, a number that jumped to 140 post the 1950s. For those formed in the Arabian Sea, the number has risen from 29 to 44 in the same period.
- Storms in the Arabian Sea are gaining more strength and the trend is projected to continue. The number of extremely severe cyclonic storms formed in the Arabian Sea has increased in the last 20 years.

Himalaya Snow Cover:

- During the last 7 decades, the Hindukush Himalayas have warmed at an average 0.2°C per decade. The Karakoram Himalayas have reported an increase in snowfall during winter.
- By the end of the century, the Hindukush Himalayas are projected to be warmer by 2.6-4.6°C.

Cause & Effect:

- The main contributor to climate change is anthropogenic activities pushing up concentrations of greenhouse gases. This has led to rise in temperature and atmospheric moisture content.
- A higher concentration of water vapour, in turn, leads to intense rainfall during monsoon.
- Heating leads to vaporisation, which is directly linked to decreasing soil moisture, resulting in droughts. This can lead to reduction in food production and in availability of potable water, the report says.
- Rising sea levels would make India's big cities vulnerable to erosion and damage to coastal projects.

17. Asian Elephants

Why in News?

- Researchers from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) an autonomous institute of the Department of Science & Technology, Government of India found that Asian Elephant calves develop handedness (right or left-side bias) in trunk usage quite early. Analogous to human infants showing right-handedness or left-handedness soon after birth.

Highlights:

- The study was published recently in the International Journal of Developmental Biology.
- The team of researchers observed 30 unique calves from 11 distinct clans (female social groups) in Kabini Elephant Project in Nagarahole and Bandipur National Parks from December 2015 to December 2017 to look at the development of trunk motor control, laterality in trunk usage, and various social and non-social behaviours.

Asian Elephant:

- The Asian elephant is distributed throughout the Indian subcontinent and Southeast Asia, from India in the west, Nepal in the north, Sumatra in the south, and to Borneo in the east.

- In India, Elephants are found in the states of Karnataka, Assam, Kerala, Tamil Nadu, Odisha, Meghalaya, Uttarakhand, Arunachal Pradesh, Jharkhand, Chattisgarh, Uttar Pradesh, West Bengal.
- Their habitat ranges from wet tropical evergreen forests to semi-arid thorn and scrub forests.
- Elephants are mega-herbivores and require vast tracts of forests, rich in food and water to survive.
- Threats: loss of habitat, habitat degradation, fragmentation and poaching
- **IUCN Status: Endangered**

Conservation Measures by Government of India:

- The Government of India has declared Indian elephant as National Heritage Animal.
- It is provided with the highest degree of legal protection by listing it in Schedule I of the Wildlife (Protection) Act, 1972.
- **Project Elephant:**
 - ✓ Project Elephant was launched in 1992 to provide financial and technical support of wildlife management efforts by states for wild Asian Elephants.
 - ✓ It is a Centrally Sponsored Scheme of the Ministry of Environment and Forests.
 - ✓ Presently, the project is being implemented in 22 States/UTs.
- **Objectives:**
 - ✓ To protect elephants, their habitat & corridors
 - ✓ To address issues of man-animal conflict
 - ✓ The welfare of Captive Elephants

18. Global Forest Resources Assessment (FRA)

Why in News?

- According to the latest Global Forest Resources Assessment (FRA) released by the Food and Agriculture Organization (FAO) of the United Nations, India has ranked third among the top 10 countries that have gained in forest areas in the last decade.

Highlights:

- FAO has brought out this comprehensive assessment every five years since 1990.
- This report assesses the state of forests, their conditions and management for all Member Countries.

- The top 10 countries that have recorded the maximum average annual net gains in forest area during 2010-2020 are China, Australia, India, Chile, Vietnam, Turkey, the United States, France, Italy and Romania.
- India accounts for two percent of the total global forest area.
- The Asian continent reported the highest net gain in forest area in 2010-2020. It recorded 1.17 million hectares (ha) per year net increase in forests in the last decade.
- However, the South Asia sub-region reported net forest losses during 1990-2020. But, this decline would have been much higher without the net gain in India's forest during this period, according to FRA 2020.
- During the decade under assessment, India reported 0.38 per cent annual gain in forest, or 266,000 ha of forest increase every year at an average.
- The FRA 2020 has credited the government's Joint Forest Management programme for the significant increase in community-managed forest areas in the Asian continent.

19. Sustainable Ocean Economy for 2050 Report

Why in News?

- A report named Sustainable Ocean Economy for 2050: Approximating Its Benefits and Costs by the World Resources Institute.
- According to the report, Offshore wind energy generation can reduce greenhouse gas (GHG) emissions, as well as increase return on the investment made to scale up these technologies.

Ocean Economy:

- The ocean and its resources provide key ecosystem services and benefits (including food, energy, recreational/ cultural services and trading/transport routes) that are crucial for human wellbeing and the prosperity of the global economy.
- However, climate change, overfishing, pollution and a loss of biodiversity and coastal ecosystems are eroding the ability of the ocean to sustain livelihoods and prosperity.
- Focusing on four ocean-based policy interventions:
 - ✓ Conserving and restoring mangrove habitats
 - ✓ Scaling up offshore wind production.
 - ✓ Decarbonizing the international shipping sector
 - ✓ Increasing the production of sustainably sourced ocean-based proteins.

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- Sustainable ocean-based investments yield benefits at least five times greater than the costs.
 - Investing \$2.0–\$3.7 trillion globally across the four areas from 2020 to 2050 would generate \$8.2–\$22.8 trillion in net benefits (average \$15.5 trillion), implying a Rate of Return on Investment of 400–615 per cent.

ROI on Scaling up Offshore Wind Energy:

- An increase in offshore wind energy generation between 650 and 3,500 terawatt-hours (TWh) every year by 2050 was also estimated to take place.
- Most offshore installations are currently in Europe, but a significant increase was expected in Asia, especially in China.
- Reduction of 0.3-1.61 giga tonnes of carbon dioxide every year by 2050.
- The total discounted health benefits by transitioning to offshore renewable energy were pegged between \$0.15 trillion and \$4.4 trillion by 2020–50.
- The benefits of water savings can be between \$1.3 billion and \$1.4 trillion over 2020-50.



6. INTERNATIONAL RELATIONS

1. Open Skies Agreement

Why in News?

- The United Arab Emirates (UAE) is interested to have an open sky agreement with India.

India's Open Sky Policy:

- An Open Skies policy enables ease of access and use of one's national airports for foreign airlines. It helps in the development of an air hub and increases tourist flow.
- As per the National Civil Aviation Policy 2016, India has an open skies policy with SAARC countries and those beyond the 5,000-km radius.
- Implying nations within this distance need to enter into a bilateral agreement and mutually determine the number of flights that their airlines can operate between the two countries. India has bilateral agreements with more than 100 countries.
- India has open sky agreements with the US. Meaning there is no restriction on the number of flights, seats, or destinations to/from the United States. While with the United Kingdom and ASEAN countries, India has an open sky agreement with restrictions.

United Arab Emirates:

- The United Arab Emirates is located at the northeast end of the Arabian Peninsula on the Persian Gulf. It borders Oman to the east and Saudi Arabia to the south and west.
- It shares maritime borders with Qatar to the west and Iran to the north.
- UAE is sovereign constitutional monarchy and is a federation of seven emirates consisting of Abu Dhabi (which serves as the capital), Ajman, Dubai, Fujairah, Ras Al Khaimah, Sharjah and Umm Al Quwain.
- Each emirate is governed by a ruler.

2. Iran drops India from Chabahar rail project

Why in News?

- Four years after India and Iran signed an agreement to construct a rail line from Chabahar port to Zahedan, the Iranian government has decided to proceed with the construction on its own, citing delays from the Indian side in funding and starting the project.

Highlights:

- This development comes as China finalizes a massive 25-year, \$400 billion strategic partnership deal with Iran, which could cloud India's plans.

- Recently, Iran inaugurated the track-laying process for the 628 km Chabahar-Zahedan line, which will also be extended to Zaranj across the border in Afghanistan.
- The entire proposed project is expected to be completed by March 2022.
- For the funding part, it has been decided that Iranian Railways will proceed without India's assistance, instead, it will be using approximately \$400 million from the Iranian National Development Fund.

Trilateral Project:

- Earlier the railway project was being discussed between the Iranian Railways and the state-owned Indian Railways Construction Ltd (IRCON).
- The project was meant to be part of India's commitment to the trilateral agreement between India, Iran and Afghanistan to build an alternate trade route to Afghanistan and Central Asia.

Earlier MoU:

- It was to construct the Chabahar-Zahedan railway as "part of transit and transportation corridor in trilateral agreement between India, Iran and Afghanistan".
- Indian Railways Construction Ltd (IRCON) had promised to provide all services, superstructure work, and financing for the project (around \$1.6 billion).

Fear of US Sanctions and No Beginning of the Actual Work:

- Despite several site visits by IRCON engineers, and preparations by Iranian railways, India actually never began the work, apparently due to worries that these could attract U.S. sanctions.
- The U.S. government in fact had provided a sanctions waiver for the Chabahar port and the rail line to Zahedan.
- However, it has been difficult to find equipment suppliers and partners due to worries they could be targeted by the U.S.
- On the other hand, India has already "zeroed out" its oil imports from Iran due to U.S. sanctions.

Growing nexus between Iran and China:

- **Strategic Partnership:**
 - ✓ Iran and China are close to finalizing a 25-year Strategic Partnership which will include Chinese involvement in Chabahar's duty-free zone, an oil refinery nearby, and possibly a larger role in Chabahar port as well.

- **Extending the Cooperation:**

- ✓ It is being said that the cooperation will extend from investments in infrastructure, manufacturing, and upgrading energy and transport facilities, to refurbishing ports, refineries and other installations.
- ✓ It will also commit Iranian oil and gas supplies to China during that period.

- **Tie-up between the Pakistani port at Gwadar and Chabahar:**

- ✓ Iran had also proposed a tie-up between the Chinese-run Pakistani port at Gwadar and Chabahar last year.
- ✓ It has offered interests to China in the Bandar-e-Jask port 350km away from Chabahar, as well as in the Chabahar duty-free zone.

Implications on India:

- The Iran-China deal impinges on India's "strategic ties" with Iran and the use of Chabahar port. Bandar-e-Jask port lies to the west of Chabahar & right before Straits of Hormuz. China would thus extend its control along the Pakistan-Iran coast.

3. India's military ties with Nepal

Why in News?

- Recently, the killing of a soldier from Nepal serving in the Gurkha regiment in cross-border firing along the Line of Control is a reminder about the strong ties between the Indian and Nepalese armed forces amidst the recent chill in the ties.
- Soldiers from Nepal form a significant part of the Indian Army's legendary Gurkha regiment.

Origin of India's military ties with Nepal:

- **Pre-independent India:**

- ✓ The military ties between the two goes back to the reign of Maharaja Ranjit Singh whose army in Lahore enlisted Nepalese soldiers called Lahure or soldiers of fortune.
- ✓ British India raised the first battalion of the Gurkha Regiment as the Nasiri regiment in 1815.
- ✓ By the time the First World War started, there were 10 Gurkha regiments in the British Indian Army.

- **Post-Independence:**

- ✓ When India got freedom, these regiments were divided between the British and Indian armies as per the Britain-India-Nepal Tripartite Agreement signed in November 1947.

- ✓ Six Gurkha regiments with a lakh-odd soldier came to India, which went on to raise another regiment called 11 Gurkha Rifles to accommodate soldiers of 7th Gurkha Rifles and the 10th Gurkha Rifles, who chose not to transfer to the British Army.

4. U.S.-India Strategic Energy Partnership (SEP)

Why in News?

- The 2nd ministerial meeting of the U.S.-India Strategic Energy Partnership (SEP) held.

Highlights:

- The SEP was established in 2018 at the direction of President Trump and Prime Minister Modi, recognizing the strategic importance of energy to the U.S.-India bilateral relationship.
- The SEP builds upon our longstanding energy partnership and sets the stage for meaningful engagements through robust government-to-government cooperation and industry engagement.
- The SEP organizes inter-agency engagement on both sides across four primary pillars of cooperation:
 - ✓ Power and Energy Efficiency
 - ✓ Oil and Gas
 - ✓ Renewable Energy
 - ✓ Sustainable Growth.
- Through these pillars, the United States and India are working to strengthen and modernize the power grid and distribution utilities for clean, affordable, and reliable energy access; improve efficiency, flexibility, and environmental performance in the power sector; promote inclusive and sustainable economic growth through long-term energy development; enhance energy security through oil and gas trade, and infrastructure investment; advance the development, deployment, and integration of renewable energy and expand access to finance for renewable energy projects; and reduce market barriers to energy trade and investment.
- The two countries are also leading joint research and development (R&D) through the S.-India Partnership to Advance Clean Energy-Research (PACE-R) on smart grids and energy storage to increase resilience and reliability of the Electric Grid.

5. G20 Digital Ministers' Meet

Why in News?

- Union Minister for Electronics and Information Technology represented India during this Virtual Meeting.

G20 Digital Ministers' Meet:

- A virtual meeting of G20 Digital Economy Ministers hosted by Saudi Arabia took place.
- Saudi Arabia is holding the presidency of the G20.
- The Digital Economy Ministers Meeting took place as part of the Sherpa Track for the G20 Leaders' Summit 2020.
- Consultations for the annual G20 meeting are conducted through three tracks. Government discussions take place under the Finance and Sherpa Tracks. Civil society organizations participate through Engagement Groups.
- The Sherpa Track includes meetings of Ministers and relevant senior officials focused on socioeconomic issues such as agriculture, anti-corruption, climate, digital economy, education, employment, energy, environment, health, tourism, trade and investment.
- The Saudi Arabian Presidency has selected the theme, "Realizing Opportunities of the 21st Century For All".

6. India opens new routes to strengthen trade ties with Neighbours

Why in News?

- In a bid to boost its economic and connectivity linkages with its neighbours, two new routes for trade with Bangladesh and Bhutan have been opened up.

Engagement with Bhutan:

- A new trade route is opened under the Jaigaon Land Station on India - Bhutan Border through Ahllay near Pasakha in southeastern Bhutan.
- Trade between India and Bhutan through the Jaigaon-Phuentsholing border trade point amounts to approximately Rs. 6,000 crores annually.
- Bhutan's trade with countries other than India through this border trade point is an additional Rs. 1,400 crores annually. The India-Bhutan Agreement on Trade, Commerce and Transit which was last renewed in 2016 allows for free trade and commerce between India and Bhutan.
- The pact provides for about 21 entry or exit trade points between India and landlocked Bhutan.

- This includes 10 trade points with Land Customs Stations (LCS) at the Indo-Bhutan border.
- Bhutan uses some of these to trade with third countries.
- The route for movement of industrial raw materials and goods destined for Pasakha Industrial Estate will boost bilateral trade and commerce and lead to decongestion of vehicular traffic along the Jaigaon - Phuentsholing route.
- These efforts will further have a positive effect on the trade growth with North Eastern States of India.
- Besides the new trade point, India is also looking at fast tracking a railway link between Mujnai in West Bengal and Nyoenpaling in Bhutan.

Engagement with Bangladesh:

- India recently flagged off the first trial of container ship from Kolkata to Agartala through Chattogram port of Bangladesh.
- This is the outcome of a pact signed by the two countries on coastal shipping in 2015 and another in October 2018 on the use of Chittagong and Mongla Ports for trans-shipment of goods to and from India.
- Eight routes have been provided under the 2019 pact which will enable access to India's northeastern region via Bangladesh.
- The routes identified includes -
 - ✓ Chattogram or Mongla Port to Agartala in Tripura via Akhura,
 - ✓ Chattogram or Mongla Port to Dawki in Meghalaya via Tamabil,
 - ✓ Chattogram or Mongla Port to Sutarkandi in Assam via Sheola and
 - ✓ Chattogram or Mongla Port to Srimantpur in Tripura via Bibirbazar.
- For India, the use of the Bangladesh ports would cut the time required for transportation by allowing three landlocked northeastern Indian states access open sea trade routes from Chattogram and Mongla ports via Indian ports.
- For Bangladesh, the spinoffs come in the form of job creation, boosting prospects for investment in the logistics sector, supply chain integration and promotion of business services like Finance, Transportation and Insurance, says Industry Representatives.

7. India-Russia Joint Technology Assessment and Accelerated Commercialization Programme

Why in News?

- The Department of Science and Technology has launched the India-Russia Joint Technology Assessment and Accelerated Commercialization Programme in partnership with the Federation of Indian Chambers of Commerce and Industry (FICCI) and Foundation for Assistance to Small Innovative Enterprises (FASIE) of the Russian Federation.

Highlights:

- The programme will connect Indian, and Russian Science & Technology (S&T) led SMEs and Start-ups for joint R&D for technology development and for cross-country technology adaptation.
- Over a period of two years, the Department of Science and Technology will fund up to INR 15 Crores to ten Indian SMEs/Start-ups and FASIE will provide similar funding to the Russian projects.
- The programme will provide access to partial public funding for jointly selected projects with the participation of at least one start-up/SME from India and one SME from Russia.
- The selected projects will be required to bear partial funding as well, either through own funds or alternate sources of funding.
- In addition to the financial support, the teams will also be supported through Capacity Building, Mentorship and Business Development.

6. INTERNAL SECURITY & DISASTER MANAGEMENT

1. Ladakh and its Geo-strategic Importance

Why in News?

- With the long-standing border standoff with China, Ladakh, a rugged, high-altitude region that is generally far removed from the lives and imagination of most Indians, has become part of our daily conversations and worries.



Ladakh through the History:

- Lying between the Kunlun mountain range in the north and Himalayas to the south, Ladakh was originally inhabited by people of Indo-Aryan and Tibetan descent.
- Historically the region included the valleys of Baltistan, Indus, and Nubra, besides Zaskar, Lahaul and Spiti, Aksai Chin, Ngari and Rudok.
- Located at the crossroads of important trade routes since ancient times, Ladakh has always enjoyed great geostrategic importance.
- At the beginning of the first century AD, Ladakh was part of the Kushan Empire. Till the 15th century, it was part of Tibet and was ruled by dynasties of local Lamas.
- Later it changed hands multiple times, alternating between the kingdoms of Kashmir and Zhangzhung. In 1834, Gen Zorawar Singh, a general of Raja Gulab Singh who ruled Jammu as part of the Sikh empire, extended the boundaries of Maharaja Ranjit Singh's kingdom to Ladakh.

Partition, Pakistan and Chinese Occupations:

- Immediately after India's Partition, tribal raiders (the disguised Pakistani Army) attacked Ladakh. They captured Kargil and were heading for Leh when they were confronted by the Indian Army, who got back Kargil.

- Although India has always considered Aksai Chin to be part of Jammu and Kashmir, in the 1950s the Chinese built a highway, called western highway or NH219, connecting Tibet with Xinjiang through this region.
- It was always more easily accessible to the Chinese than to the Indians, who were across the Karakoram. India learnt of this road in 1957, and it was one of the causes of the 1962 India-China war, after which China strengthened its control over this region.
- China today claims Aksai Chin to be part of Hotan County of its Xinjiang province.
- Pakistan ceded the Shaksgam Valley, which was part of the Baltistan region north of the Karakoram, to China following a Sino-Pakistani agreement signed on March 2, 1963.

Ladakh through the Chinese Eyes:

- China's forays into the region began after the 1949 Communist Revolution, when Chairman Mao Zedong, a veteran of guerrilla warfare, began consolidating China's periphery as part of his expansionist designs.
- The PLA occupied Tibet in 1951 and then began to eye Ladakh.
- The reason was that the road connecting Kashgar in Xinjiang to Lhasa in Tibet had to pass through Aksai Chin, which was held by Indians but was seldom patrolled by them.

Galwan Valley in the Limelight:

- The Tibetan revolt of 1959 and the Dalai Lama's flight to India saw China further strengthening its military presence in Ladakh to ensure the security of NH 219.
- India reacted with its 'forward policy' as part of which it began setting up Army posts in the region to prevent Chinese expansion.
- This resulted in the initial clash between the Indian and Chinese forces in the Kongka Pass area in 1959.
- Later, Galwan Valley became the scene of action when the Indian Army established a post to cut off the Chinese post in the Samjunjling area, marking the beginning of the 1962 war.

Pangong Tso: The Contested Lake:

- In the latest face-off, Indian troops first spied the Chinese on the banks of Pangong Tso.
- This lake, which is one-third in India and two-thirds in China, is of great tactical significance to the Chinese who have built infrastructure along both its sides to ensure the speedy build-up of troops.
- Chinese incursions in this region aim at shifting the LAC westward so that they are able to occupy important heights both on the north and the south of the lake, which will enable them to dominate the Chushul Bowl.

- The narrow Chushul valley, which lies on the road to Leh with Pangong Tso to its north, was an important target for the Chinese even during the 1962 war. It was here that the Battle of Chushul was fought.

Strategic SSN: To the Far North:

- The area spanning Galwan, Depsang plateau, and Daulat Beg Oldie (DBO), is called Sub-Sector North (SSN).
- This enclave that lies to the east of the Siachen glacier is of immense significance given its proximity to the Karakoram Pass, close to China's western highway or NH 219 going to Aksai Chin.
- It's the SSN that provides land access to Central Asia through the Karakoram Pass.
- Domination of this area is also crucial for the protection of the Siachen glacier, lying between the Salto ridge on the Pakistani side and the Saser ridge close to the Chinese claim line.
- The Galwan heights overlook the all-weather Durbuk-Shyok-Daulat Beg Oldie (DSDBO) Road, which connects Leh to DBO at the base of the Karakoram Pass that separates China's Xinjiang Region from Ladakh.
- Domination over these heights allows China to easily interdict this road.

Why is China stubborn on Galwan?

- Occupation of Galwan will neutralize the tactical advantage India gained by building the all-weather Durbuk-DBO road over the last two decades.
- Last year, the Border Road Organisation (BRO) made this rugged terrain even more accessible by completing the 430-metre-long bridge across the Shyok River.
- With this, the Darbuk route to DBO became available round the year, and the travel time of troops to the SSN was halved.
- It was this bridge, coupled with the ongoing work on a link road to LAC in this area, prompted the PLA to enter Galwan.