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JULY 2020

G.S PAPER II

1. POLITY

1.1 Custodial Torture - Existing Provisions

What is the issue?

- The ‘Custodial death’ of a father and son in Sathankulam town in Tamil Nadu’s Thoothukudi district gave way to demands for separate law against torture.
- In this context, it is essential to look into how implementing the existing laws and recommendations of various commissions would help.

What are the provisions in place?

- **IPC** - Torture is not defined in the Indian Penal Code.
- However, the definitions of ‘hurt’ and ‘grievous hurt’ are clearly laid down.
- The definition of ‘hurt’ does not include mental torture.
- But, Indian courts have included among others, in the ambit of torture -
 - i. psychic torture
 - ii. environmental coercion
 - iii. tiring interrogative prolixity (excessive wordiness)
 - iv. overbearing and intimidatory methods
- Voluntarily causing hurt and grievous hurt to extort confession are also provided in the Code with enhanced punishment.
- **CrPC** - Under the Code of Criminal Procedure, a judicial magistrate inquires into every custodial death.
- **NHRC** - The National Human Rights Commission has laid down specific guidelines for conducting autopsy under the eyes of the camera.
- **SC Judgements** - The Supreme Court judgment in DK Basu v. State of West Bengal was a turning point in matters of custodial torture.
- The Court’s decision in Nilabati Behera v. State of Orissa is also notable.
- It ensured that the state could no longer escape liability in public law and had to be compelled to pay compensation.
- Therefore, there is neither a dearth of precedents nor any deficiency in the existing law.
- It is not the law per se but the improper implementation that fails to deter incidents of custodial torture.

What is the DK Basu judgements about?

- A letter was received in 1986 from an organization regarding the matter of lock up deaths in the state of West Bengal.
- This letter was treated as a writ petition and taken as a PIL.
- It spawned four crucial and comprehensive judgments - in 1996, twice in 2001 and in 2015 - laying down over 20 commandments.
- Additionally, it led to at least 5 other procedural, monitoring and coordinating judicial orders.
- These have created a valuable and seamless web of legal principles and techniques.
- All of them are aimed at reducing custodial death and torture and to have control on police and a set of guidelines for arresting a person.

What are the drawbacks in the Prevention of Torture Bill?

- A fresh draft of the Prevention of Torture Bill was released in 2017 for seeking suggestions from various stakeholders.
- The Bill was vague as well as very harsh for the police to discharge its responsibilities without fear of prosecution and persecution.
- It was inconsistent with the existing provisions of law.
- It included ‘severe or prolonged pain or suffering’ as a form of torture but that was left undefined.
- The proposed quantum of punishment was too harsh.
- The 262nd Law Commission Report recommended that the death penalty be abolished except in cases of ‘terrorism-related offences.’
- Despite this, the Bill provided for the death penalty for custodial deaths.
- Most countries have deleted or are deleting the death penalty from their statute books.
- But India is on path to enact fresh legislation with death penalty as the ultimate form of punishment.
- The Bill also makes the registration of every complaint of torture as an FIR.
- There is a blanket denial of anticipatory bail to an accused public servant.
- This seems less reasonable.
- The bail can be refused in appropriate cases.
- But, excluding an investigating officer from availing such an opportunity shall amount to putting him/her on the highest pedestal of mistrust.
- Overall, the proposed Bill was less reformative and more vague, harsh and retributive in nature.

What about the UN CAT?

- In 2017, the Central government admitted in the Supreme Court that it was seriously considering the 273rd Report of the Law Commission (LC).
- The LC recommended ratification of the UN Convention against Torture and other Cruel, Inhumane or Degrading Treatment (CAT).
- CAT was signed by India, but is yet to be ratified.
- However, except for minor discrepancies, the prevalent law in India is adequate and well in tune with the Thus, the need of the hour is to strike at the root cause of the problem and implement recommendations of various commissions to bring in necessary reforms.

1.2 Supreme Court on Criminalisation in Politics

Why in News?

A Supreme Court judgment on criminalisation in politics will be implemented in the Bihar elections in October 2020.

What is the Court decision?

- The Court has asked the political party and its leadership to publicly own up to criminalisation of politics.
- It has asked the political parties to state the reasons for such selection.
- It has also asked why other individuals without criminal antecedents could not be selected as candidates.
- If a political party fails to comply, it would be in contempt of the Supreme Court’s orders/directions.
- It is also not clear what penalty would be imposed if the recent orders are not followed.

What do some earlier orders state?

- Each candidate shall submit a sworn affidavit giving financial details and criminal cases.
- Each candidate shall inform the political party in writing of criminal cases against him or her.

- The party shall put up on its website and on social media as well as publish in newspapers the names and details of such candidates.

Why did the Court pass such an order?

- The judgment notes that in 2004, 24% of the Members of Parliament had criminal cases pending against them.
- In 2019, 43% of MPs had criminal cases pending against them.
- India is the only democratic country with a free press where we find a problem of this dimension.

What is the current situation?

- Surveys show that people around the country are unhappy with the quality of governance.
- However, no matter how many parties are changed, governance does not really improve, a few exceptions apart.
- Several laws and court judgments have not helped much as they lack of enforcement.
- Politics dominates the bureaucracy, and reins in business, civil society and the media.
- Therefore, we need governance that is free of criminals.

1.3 Padmanabhaswamy Temple Case

Why in news?

The Supreme Court upheld the right of the Travancore royal family to manage the property of deity at Padmanabha Swamy Temple.

What is the case about?

- The central legal question was whether Marthanda Varma could claim to be the “Ruler of Travancore”.
- [Marthanda Varma is the younger brother of Balarama Varma, the last Ruler of Travancore who died in 1991.]
- The court examined this claim within the meaning of that term as per the Travancore-Cochin Hindu Religious Institutions Act, 1950.
- This claim also includes the ownership, control and management of the temple, Thiruvananthapuram.
- The court said that the **shebait rights survive with the family members** even after the death of the last ruler.
- [Shebait rights - Right to manage the financial affairs of the deity.]
- This SC decision has reversed the 2011 Kerala High Court decision.

Who had these claims of the temple before 1991?

- Before 1947, the Travancore Devaswom Board controlled the temple that was under the control of the former Princely State of Travancore.
- The Instrument of Accession was signed between the princely state of Travancore and the Government of India in 1949.
- Since then, the administration of the Padmanabhaswamy Temple was “vested in trust” in the Ruler of Travancore.
- In 1971, privy purses to the former royals were abolished through a constitutional amendment stripping their entitlements and privileges.
- The move was upheld in the court in 1993.
- The last ruler of Travancore who died during the pendency of this case continued to manage the affairs of the temple till then.

When did the legal issue begin?

- In 1991, when the last ruler’s brother took over the temple management, it created a furore among the devotees.

- They moved to the courts leading to a long-drawn legal battle.
- The government joined in; supporting the claims of the petitioner that Marthanda Varma had no legal right to claim the control of the temple.

Is the temple the property of the royal family?

- The character of the temple was always recognised as a **public institution** governed by a statute.
- The argument of the royal family is that, as per custom, the temple management would vest with them for perpetuity.
- The last ruler had not included the Sree Padmanabhaswamy Temple as his personal property or dealt with it in his will.

What about the temple's property, including the riches in the vaults?

- A consequence of who has administrative rights over the temple is whether the vaults of the temple will be opened.
- In 2007, Marthanda Varma claimed that the treasures of the temple were the family property of the royals.
- Several suits were filed objecting to this claim.
- A lower court in Kerala passed an injunction against the vaults' opening.
- In 2011, the Kerala High Court ordered that a board be constituted to manage the affairs of the temple, ruling against the royal family.
- The royal family filed the appeal in the SC against this verdict immediately.

What did the SC rule?

- The SC had stayed the HC verdict.
- It also appointed two amicus curiae to prepare an inventory of items in the six vaults.
- While five vaults were opened, vault B was not.
- Since 2011, the process of opening the vaults has led to the discovery of treasures within the Padmanabhaswamy temple.
- This prompted a debate on who owns temple property and how it should be regulated.

How temples are controlled?

- India is a secular country that separates religion from the state affairs.
- However, Hindu temples and its assets are governed through statutory laws and boards heavily controlled by state governments.
- This system came into being through the development of a legal framework to outlaw untouchability by treating temples as public land.
- It has resulted in many legal battles.

2. GOVERNMENT ACTS & POLICIES

2.1 New Education Policy 2020

Why in news?

The Union Cabinet cleared a new National Education Policy (NEP) 2020.

What purpose does an NEP serve?

- **Purpose** - An NEP is a comprehensive framework to guide the development of education in the country.
- In 1964, Kothari Commission was constituted to draft a national and coordinated policy on education.
- Based on the suggestions of this Commission, Parliament passed the first NEP in 1968.

- **NEPs till now** - In 1968, the first NEP came under the Prime Ministership of Indira Gandhi.
- In 1986, the second NEP came under Rajiv Gandhi (Revised in 1992).
- The third one is the NEP 2020 under Narendra Modi.

What are the key takeaways of NEP 2020?

- **Schooleducation** - The new NEP focuses on overhauling the curriculum and easier Board exams.
- It also focused on a reduction in the syllabus to retain core essentials and thrust on experiential learning and critical thinking.
- It pitches for a “5+3+3+4” design of school education in the place of a “10+2” structure.
- This design will be corresponding to age groups 3-8 years (foundational stage), 8-11 (preparatory), 11-14 (middle), and 14-18 (secondary).
- This brings early childhood education (pre-school education for children of ages 3 to 5) under the ambit of formal schooling.
- The mid-day meal programme will be extended to pre-school children.
- The NEP says students until Class 5 should be taught in their mother tongue or regional language.
- **Higher education** - The NEP proposes to open up Indian higher education to foreign universities.
- It proposes to dismantle the UGC and the All India Council for Technical Education (AICTE).
- It proposes to introduce a 4-year multidisciplinary UG programme with multiple exit options, and discontinuation of the M Phil programme.
- It also proposes phasing out of all institutions offering single streams.
- It says that all universities and colleges must aim to become multidisciplinary by 2040.

How will these reforms be implemented?

- The NEP only provides a broad direction and is not mandatory to follow.
- Since education is a concurrent subject, the reforms proposed can only be implemented collaboratively by the Centre and the states.
- The government has set a target of 2040 to implement the entire policy.
- The government plans to set up subject-wise committees with members from relevant ministries at both the central and state levels.
- These committees will help in developing implementation plans for each aspect of the NEP.
- Planning will be followed by a yearly joint review of progress against targets set.

What does the emphasis on mother tongue/regional language mean?

- Such an emphasis is not new: Most government schools in the country are doing this already.
- As for private schools, it is unlikely that they will be asked to change their medium of instruction.
- The provision on mother tongue as medium of instruction was not compulsory for states.
- As education is concurrent subject, the policy clearly states that kids will be taught in their mother tongue/regional language wherever possible.

What about the children of multilingual parents?

- The NEP said that the teachers will be encouraged to use a bilingual approach.
- This approach will help those students whose home language may be different from the medium of instruction.

How will the higher education be opened to foreign players?

- The document states universities from among the top 100 in the world will be able to set up campuses in India.

- But the document doesn't elaborate the parameters to define the top 100.
- The government may use the 'QS World University Rankings'.
- However, the HRD Ministry needs to bring in a new law that includes details of how foreign universities will operate in India.
- It is not clear if a new law would entice the best universities abroad to set up campuses in India.

How will the 4-year multidisciplinary bachelor's programme work?

- Under this proposed 4-year programme, students can exit,
 1. After one year with a certificate,
 2. After two years with a diploma, and
 3. After three years with a bachelor's degree.
- Four-year bachelor's programmes generally include a certain amount of research work.
- Therefore, the student will get deeper knowledge in the subject s/he decides to major in.
- After four years, a UG student could enter a research degree programme directly depending on how well s/he has performed.
- However, master's degree programmes will continue to function as they do, following which student may do a PhD.

What impact will doing away with the M Phil programme have?

- This would not affect the higher education trajectory at all.
- In normal course, after a master's degree a student can register for a PhD programme.
- This is the current practice almost all over the world.
- In most universities, M Phil was a middle research degree between a master's and a PhD.
- MPhil degrees have slowly been phased out in favour of a direct PhD programme.

2.2 Need for 'One Nation One Voter ID' - Re-enfranchising Migrant Voters

What is the issue?

- Migrant workers have, for long, been forgotten voters, given their conditions of work.
- Given this, there must be the political will to usher in a 'One Nation One Voter ID' to ensure ballot portability.

What are the recent changes made by the ECI?

- In response to the pandemic, the Election Commission of India (ECI) has made it possible for senior citizens above the age of 65 to vote by postal ballot.
- This is given the fact that they are at greater risk from exposure to the novel coronavirus.
- [Until now, this option was available only to disabled citizens and those above 80 years.]
- The same empowering approach could be extended to the migrants who evidently face difficulties in exercising their franchise.

How significant are the migrant workers?

- Internal migrant workers constitute about 13.9 crore as in the Economic Survey of 2017.
- This is nearly a third of India's labour force.
- They travel across India in search of an economic livelihood.
- They engage in the construction sector, as domestic work, in brick kilns, mines, transportation, security, agriculture, etc.

What is the present scenario?

- With COVID-19 pandemic and the lockdown, the country witnessed the magnitude of internal migration.

- The hardships that migrant workers endured in their quest for livelihoods were also apparent.
- The humiliation they faced showed how politically powerless they were perceived to be.

Why are they called the forgotten voters?

- Most of the migrant workers never intend to settle down in their locations of work.
- They only wish to return to their native villages and towns once their work is completed or the working season ends.
- Often they toil in exploitative low-wage jobs, lacking identity and proper living conditions.
- So, they often go without access to welfare.
- Internal migrant workers do not enrol as voters in their place of employment.
- This is because they find it hard to provide proof of residence.
- They also cannot afford to return home on election day to vote.
- Thus, migrant workers become quasi-disenfranchised, and forgotten voters.
- It is perhaps this group does not constitute a vote bank worthy of attention.
- Also, since they do not have a vote where they work, their concerns are easy to ignore in their host State.
- Sometimes, they are targeted for allegedly taking jobs away from the local population.

What do the voters turn out show?

- It is indeed a matter of pride that India currently has over 91.05 crore registered voters.
- In the 2019 general election, a record 67.4% cast their vote.
- The ECI would do well to focus attention on the one-third, a substantial 29.68 crore, who did not cast their vote.
- National Election Study surveys have shown that about 10% of registered voters refrain from voting due to a lack of interest in politics.
- That leaves approximately 20 crore voters who want to vote but are unable to do so.
- Of these there are about 3 crore Non Resident Indians (NRIs).
- Only about 1 lakh NRIs have registered to vote, presumably because voting requires their physical presence in India.
- Of them, about 25,000 voted in the 2019 elections.
- To enable NRIs to exercise their franchise, the government brought in legislation in the previous Lok Sabha to enable voting through authorised proxies.
- The legislation lapsed.
- However, it is interesting to contrast the concern for NRIs with the lack thereof for poor migrant workers.

What are the models in place for voter portability?

- Service voters (government employees) posted away from home can vote through the Electronically Transmitted Postal Ballot System (ETPBS).
- Classified service voters (e.g., military personnel) can do so through their proxies.
- The ECI has said that it is testing an Aadhaar-linked voter-ID based solution.
- This is to enable electors to cast their votes digitally from anywhere in the country.
- It will be some time in the future before this becomes a functional reality.

3. SOCIAL JUSTICE

3.1 SC/ST Quota Benefits to the Disabled

Why in news?

- The Supreme Court has confirmed that persons suffering from disabilities are also socially backward.
- With this, they become entitled to the same benefits of relaxation as Scheduled Caste/Scheduled Tribe candidates in public employment and education.

What is the case about?

- The present decision came on a petition filed by Aryan Raj, a special needs person, against the Government College of Arts, Chandigarh.
- [It is an appeal against a Punjab and Haryana High Court order.]
- The college denied Mr. Raj relaxation in minimum qualifying marks in the Painting and Applied Art course.
- The college insisted that disabled persons too need to meet the general qualifying standard of 40% in the aptitude test.
- Notably, the SC/ST candidates were given a relaxation to 35%.
- Setting aside the college decision, the Supreme Court said that the same 35% shall apply so far as the disabled are concerned in future.
- The apex court allowed Mr. Raj to apply afresh for the current year.
- The Court said that it is 'following' the principle laid down in an earlier Delhi High Court judgment.

What was the 2012 HC Judgement?

- It relates to the Anamol Bhandari (Minor) through his father/Natural Guardian v. Delhi Technological University 2012 case.
- The Delhi Technological University prospectus provided 10% of concession of marks in the minimum eligibility requirements for SC/ST candidates.
- But relaxation of only 5% was permissible for People with Disabilities.
- On a petition against this, the Delhi HC ruled against this differential treatment, terming it discriminatory.
- It held that people suffering from disabilities are also socially backward.
- It observed that reservation for the disabled is called horizontal reservation.
- So this cuts across all vertical categories such as SC, ST, OBC & General.
- Therefore, at the very least, it said, they are entitled to the same benefits as given to the SC/ST candidates.
- A three-judge Bench of the Supreme Court has now upheld this 2012 judgment.
- The public sector employers and colleges / universities will now have to allow the same relaxations to the disabled as to SC / ST candidates.

What is the clarity offered?

- The Supreme Court also cited the following from the High Court judgment.
- Intellectually/mentally challenged persons have certain limitations, which are not there in physically challenged persons.
- The subject experts would thus be well advised to examine the feasibility of creating a course, which caters to the specific needs of such persons.
- They may also examine increasing the number of seats in the discipline of Painting and Applied Art with a view to accommodating such students.

Why is this a welcome move?

- The judgement recognises the difficulties faced by the disabled in accessing education or employment, regardless of their social status.
- Even though drawn from all sections of society, the disabled have always been an under-privileged and under-represented section.
- The larger principle is that without imparting proper education to the disabled, there cannot be any meaningful enforcement of their rights.

Can physical/mental and social disabilities be equated?

- A question arises if 'physical or mental disability' could really be equated with the 'social disability' and experience of untouchability suffered by marginalised sections for centuries.
- For instance, the social background of disabled persons from a traditionally privileged community may give them an advantage.
- This stands in contrast with a similar kind of a person suffering from historical social disability as well.
- However, as per the court's view this may not always be the case.
- Evidently, the Delhi High Court had cited the abysmally low literacy and employment rates among persons with disabilities.
- **Indicators** - The 2001 Census put the illiteracy rate among the disabled at 51%.
- This is much higher than the general population figure.
- The share of disabled children out of school was quite higher than other major social categories.
- There was similar evidence of their inadequate representation in employment too.

3.2 CBSE Syllabus Cuts - COVID-19 Impact

What is the issue?

- The Central Board of Secondary Education (CBSE) has announced a reduction in the curriculum for the year 2020-2021 for Classes IX to XII.
- The reductions and deletions suggested by the CBSE violates the cohesiveness and holistic nature of the planned curriculum.

What is the decision taken?

- The CBSE syllabus for classes 9 to 12 has been reduced by 30%.
- However, core concepts is said to be retained.
- The CBSE circular says that the move has been finalised by the respective Course Committees.
- The Curriculum Committee and Governing Body of the Board have approved the same.
- The CBSE circular instructs the Heads of Schools and Teachers to ensure that the topics that have been reduced are also explained.
- But this is only to the extent required to connect different topics that are retained.
- However, the reduced syllabus will not be part of the topics for internal assessment and year-end board exams.
- The move comes in view of the reduced number of class hours available in 2020-2021 due to the COVID-19 pandemic.

What are the key deleted portions?

- For Class 11 students of political science, 'federalism in the Constitution' is removed.
- Political theory sections on citizenship, secularism and nationalism have also been removed.
- The core English course will not include exercises to write a letter to the editor, or apply for a job with a resume.

- In Class 12, the topic of India's relations with its neighbours has been deleted.
- Also, sections on social movements, regional aspirations, the changing nature of India's economic development, and the Planning Commission have been removed.
- Business Studies students will not study the concepts of demonetization, and GST.
- The impact of government policy changes on business with special reference to liberalization, privatization and globalization in India has also been removed.
- In History classes, students will not study chapters on understanding partition, or on peasants, zamindars and the State.
- For Class 10 students, the social science chapter on forests and wildlife in contemporary India has been deleted.
- Also, chapters on democracy and diversity; gender, religion and caste; popular struggles and movements; and, challenges to democracy are deleted.
- In science, the chapter on the functioning of the human eye has been removed, along with a section on the basic concepts of evolution.
- A number of practical experiments have been removed.
- These will be harder to conduct when students are able to spend limited time in the laboratory.

What are the contentious aspects?

- **Basic Science** - In basic science topics, it is much better to retain the fundamentals.
- If need be, the advanced topics or the higher application levels could be removed.
- But the steps taken by the CBSE are in the opposite direction.
- For instance, in physics, many basic topics such as Newton's laws, motion along a straight line and basic concepts of heat are removed.
- But more advanced topics corresponding to these have been retained, such as -
 - i. the topics on work, power and energy, which uses the concepts of Newton's laws
 - ii. motion in a plane, which expands on linear motion
 - iii. kinetic theory of gases, which builds on heat
- So, teachers will have to teach the deleted portions anyway, in order to build the next level of concepts.
- So, the deletions remain only nominal, and thus add an invisible burden on teachers.
- **Ecology and evolution** - In biology syllabus, higher-level topics such as ecology, environmental science and evolution have been arbitrarily removed.
- Topics like these, notably, connect the student to real-life situations.
- Importantly, it is ironic that such topics are removed at the time of the pandemic.
- The pandemic has highlighted the consequences of the neglect of evolution and ecology in school and higher education in India.
- Understanding practically every aspect of a zoonotic pandemic requires a thorough grounding in diverse areas of ecology and evolution.
- These include ideas like species interactions, population dynamics, co-evolutionary dynamics, evolution of host range expansions, and the transmission dynamics of pathogens.
- A direct consequence of neglect of ecology and evolution is the relative scarcity of epidemiologists in India.

3.3 Committee for the Reform of Criminal Laws

Why in news?

The Ministry of Home Affairs (MHA) has constituted a national level 'Committee for the Reform of Criminal Laws'.

What is the committee for?

- The criminal law in India comprises -
 1. the Indian Penal Code of 1860
 2. the Code of Criminal Procedure that was rewritten in 1973
 3. the Indian Evidence Act that dates back to 1872
- The idea that the current laws governing crime, investigation and trial require meaningful reform has long been in place.
- There have been several attempts in recent decades to overhaul the body of criminal law.
- Given this, the committee's mandate now is to recommend reforms in the criminal laws in a principled, effective, and efficient manner.
- The reforms should ensure the safety and security of the individual, the community and the nation.
- It should prioritise the constitutional values of justice, dignity and the inherent worth of the individual.

How does it work?

- The committee has several leading legal academicians on board.
- It would be gathering opinions online, consulting with experts and collating material for their report to the government.
- Questionnaires have been posted online on the possible reforms.
- The committee has invited experts in the field of criminal law to participate in the exercise through an online consultation mechanism.
- The consultation exercise would go on for 3 months (starting on 4 July 2020).

What are the concerns?

- **Timeframe** - Comprehensive legal reform requires careful consideration and a good deal of deliberation.
- An apparently short timeframe and limited scope for public consultation has thus been raised as concerns.
- This has caused considerable disquiet among jurists, lawyers and those concerned with the state of criminal justice in the country.
- **Timing** - The Committee has begun its work in the midst of a pandemic.
- This may not be the ideal time for wide consultations.
- Activists and lawyers functioning in the hinterland may be at a particular disadvantage in formulating their opinions.
- **Mandate** - The panel's mandate is also vague and open to multiple interpretations.
- It is also not clear why the Law Commission has not been vested with this task.
- **Members** - The committee being an all-male, Delhi-based one has led to concerns of lack of diversity.

3.4 Permanent Commission to Women Officers in Army

Why in news?

The Ministry of Defence (MoD) has issued the formal Government Sanction Letter for grant of Permanent Commission (PC) to women officers in the Army.

What is a Permanent Commission?

- A Permanent Commission (PC) means a career in the army until one retires.
- If one gets selected through PC, one has the option to serve the country up to the full age of retirement.

What is the government's order?

- The government's order specifies the grant of PC to Short Service Commissioned (SSC) women officers in all the 10 streams of the Army in which they presently serve.

- The same procedure for male SSC officers will be followed for women to give PC.
- The order follows a Supreme Court verdict in February 2020.

What was the Supreme Court verdict?

- About 322 women officers had approached the apex court on the issue of PC.
- The court directed the government to ensure that women officers, irrespective of their years of service, are granted PC in the army.
- The issue of command postings came up in the discussion on subsequent avenues after the grant of PC.
- In its appeal, the government cited “physical” and “physiological limitations” in granting command positions to women officers.
- To this, the Supreme Court said there was need for administrative will and “change of mindset” in this regard.
- The court thus added that the woman officers would be eligible for command posting.
- The SC bench observed that there could not be absolute exclusion of women officers for command assignments, and that they should be considered on a case-by-case basis.

Why is this significant?

- The Army is often seen as the preserve of men.
- But enough women have fought heroic battles to bust that myth.
- From Rani of Jhansi in the past to Squadron Leader Minty Agarwal of the Indian Air Force, there are many to cite.
- [Minty Agarwal, in 2019, was part of the team that guided Wing Commander Abhinandan Varthaman during the Balakot airstrike carried out by the IAF.]
- But the battle to break a gender stereotype and provide equal opportunities for women in the Army had to be fought right up to the Supreme Court.
- The government initially did not take seriously a Delhi High Court ruling in the litigants’ favour 10 years ago.
- Then in the Supreme Court, the litigants’ concerns were evident with the views expressed by the government.
- The government pointed at “physiological limitations” of women officers.
- These were cited as great challenges for women officers to meet the exigencies of service.
- But this misogyny was called out by the Supreme Court, which directed for equal treatment.
- Given this past, the present decision will go a long way in ending a prejudice associated with the Army.

4. GOVERNANCE

4.1 Match-fixing

What is the issue?

- Match-fixing is not an independent offence in India.
- There is a need for a separate law that would punish the match-fixers.

What is the CBI’s definition of match-fixing?

- The Central Bureau of Investigation (CBI) has defined the following as the instances, which are to be treated as match-fixing.
- Instances where an individual player or group of players received money to underperform;
- Instances where a player placed bets in matches in which he played that would naturally undermine his performance;
- Instances where players passed on information to a betting syndicate;

- Instances where grounds men were given money to prepare a pitch in a way that suited the betting syndicates; and
- Instances of current and ex-players being used by bookies to gain access to players to influence their performances for a monetary consideration.

Is there a law against match-fixing in India?

- Match-fixing is not an independent offence in India and there are no laws covering it.
- Investigating authorities mostly try to book the accused for cheating under Section 420 of the IPC.
- Other laws like the Prevention of Corruption Act, 1988 have been used.
- After every match-fixing scandal, investigators, legislators and lawyers have called for reforms.
- They argue that the absence of laws makes it difficult for them to incriminate someone for match-fixing.

How have alleged match-fixers been punished in the past?

- Punishments were handed out by the cricket board under its anti-corruption rules.
- These punishments, too, were later reduced or overturned by courts.
- In fact, lawyers use these cases to illustrate the need to have separate, foolproof laws for match-fixing.

What powers do the investigators have?

- They have all the powers to collect evidence if it is available.
- However, there has to be an offence to investigate.
- Since match-fixing is not defined as an offence, it is difficult to bring it under the domain of Section 420 of the IPC.

Have there been attempts to make laws against match-fixing?

- In 2013, the Ministry of Sports drafted the Prevention of Sporting Fraud Bill that suggested a jail term for offenders.
- Two Private Member's Bills too were introduced in the Lok Sabha,
 - In 2016, Anurag Thakur introduced National Sports Ethics Commission Bill and
 - In 2018, Shashi Tharoor introduced the Sports (Online Gaming and Prevention of Fraud) Bill.
- Neither has been debated yet.

5. INDIA & ITS NEIGHBORHOOD

5.1 De-escalation in Ladakh

Why in news?

The process of de-escalation has been underway on the Line of Actual Control (LAC) in Ladakh.

What is de-escalation?

- De-escalation is a complex and time consuming exercise.
- It entails navigating an uncharted course in a graduated manner.
- The reasons for the Sino-Indian conflict are the unsettled border issue, divergent geopolitical interests and ideological dimensions.

What is the genesis of the boundary dispute?

- In Ladakh, India considered the border to be along the Johnson Line of 1865, which included Aksai Chin.
- The Chinese initially agreed to the Macartney-MacDonald (M-M) line of 1899, which was west of the Johnson Line.
- In 1960, the Chinese came out with a map laying claim to almost the whole of Aksai Chin.

- The main reason why China went for war in 1962 was to capture the claimed territories in eastern Ladakh, as also to teach India a lesson.
- By the time the Chinese declared a unilateral ceasefire, the PLA had almost secured the areas up to the 1960 claim line.
- At the end of the war, the two sides withdrew 20 km from the positions last held by the opposing forces.
- Subsequently, the LAC came to denote the line up to which the troops on the two sides actually exercised control.
- However, the LAC was neither delineated on the map nor demarcated on the ground.
- Hence, both India and China have different perceptions on the alignment of LAC.

How do both the sides assert claims?

- Over a period of time, **Patrolling Points** (PPs) were identified on the ground, setting the limits up to which the two sides could patrol.
- These PPs became reference points, although these are not bang on the LAC but at some distance on the home side.
- Hence, it is through patrolling boundaries that the Indian and Chinese troops assert their territorial claims.
- There were 23 areas which were contested by both sides.

What are the agreements signed?

- Given the potential for clashes, five major agreements were signed between India and China to ensure peace on the border. They are,
- ‘Maintenance of Peace and Tranquillity along the LAC’ was signed in 1993, which formed the basis for the subsequent agreements.
- Agreement on ‘Confidence Building Measures’ was signed in 1996 along the LAC, denouncing use of force or engaging in hostile activities.
- In the 2005 Agreement, ‘standard operating procedures’ were laid down to obviate patrol clashes.
- The Agreement of 2012 set out a process for consultation and cooperation.
- The ‘Border Defence Cooperation Agreement’ was signed in 2013.
- Its emphasis was on enhancing border cooperation and exercising maximum restraint in case of ‘face-to-face’ situations.

What is China’s aim?

- In the Chinese strategic culture, the **use of force** is considered perfectly legitimate.
- Given the scope and scale, the PLA aggression was well planned.
- In the process, the Chinese violated all of the above agreements, and once again betrayed India’s trust.
- Beijing’s strategic aim was to convey a strong message to New Delhi to submit to its interests.
- It also aimed to send a message to desist India from building border infrastructure.
- The PLA’s objectives in Ladakh would have been to pose a threat to Siachen and ensure the security of the Western Highway.
- Given India’s strong resolve both at the political and military levels alongside favourable world opinion, the Chinese decided to de-escalate.
- But it has achieved their initial aim and to obviate further upsurge.

What is the general process of de-escalation?

- Every conflict has a cycle – it begins with escalation.
- It is followed by contact, stalemate, de-escalation, resolution, peace-building and reconciliation.
- The de-escalation process entails talks at multiple levels, and ground action in various stages.
- On the ground, the first step in the de-escalation process is of **disengagement**.

- This means breaking the ‘eyeball-to-eyeball’ contact between the opposing troops on the forward line by pulling back to create a buffer zone.
- The next step is the **pulling back** of the troops in the immediate depth, followed by **reserve formations** in the rear

What is the de-escalation process in this case?

- In this case, there have been **three rounds of talks**.
- They happened at the Corps Commander level, simultaneous talks between Joint Secretaries, and at the level of Special Representatives.
- **Disengagement**- This is currently in progress.
- The forward troops on both sides are reported to have pulled back by about 1.5 km in most areas.
- **Pulling back** - The PLA created many intermediate positions, besides staging forward 4 Motorised and 6 Mechanized Divisions.
- Even fighter aircraft have been positioned at the forward air bases.
- India too, has undertaken the requisite build-up.
- Withdrawal of all these elements will require many more rounds of talks at various levels.
- Each move of the opposite party will need to be confirmed and verified on the ground, and complemented by other surveillance means.
- The PLA is in a better position to build up, given the terrain advantage and better infrastructure.
- So, the distance of pulling back cannot be sacrosanct.

What is the conclusion?

- India’s bottom line at the negotiation table is to restore the April 20 status quo ante.
- Maj Gen Liu, who represents the PLA in the Corps Commander-level talks, can be expected to indulge in hard bargaining.
- Therefore, the de-escalation process is set to be in for a long haul, marked by the ‘going back and forth’ phenomenon.

5.2 India Bans Chinese Apps

What is the issue?

- The Centre has officially banned 59 Chinese apps.
- This ban has brought to the fore the ‘national security versus digital rights’ question.

Why did India ban these apps?

- This ban came after clashes erupted between the Chinese and Indian troops in Galwan valley in Ladakh.
- The Ministry of Electronics and Information Technology (MeitY) said that it has received complaints that these apps misuse user data.
- There are reports that these apps transmit users’ data in an unauthorised manner to servers that have locations outside India.
- The MeitY said that many citizens have shared their concerns regarding the data security and risk to privacy relating to operation of certain apps.

How did India block these apps?

- The MeitY invoked its power under the **Section 69A** of the Information Technology (I-T) Act.
- The MeitY said that, using this Act, it blocked these apps to safeguard the sovereignty and integrity of India.

Why the usage of Section 69A of the I-T Act criticized?

- It is criticised that the Act isn’t designed for data protection compliance.

- It is also argued that Section 69A is set for violations that are more specific rather than broad general violations.
- The ‘security of the state’ ground is what the Union as well as many State governments have unfortunately taken very wide views of.
- However, data protection is not one of the grounds.
- More importantly, Section 69A is a censorship power, which is not well designed to protect people’s rights.

What are the other criticisms?

- The concerns around national security or other geopolitical concerns have intervened to result in this censorship administrative action.
- Banning of the apps is seen as a proxy for a larger geopolitical battle.
- The test of proportionate restriction may have not been met.
- The government didn’t follow the three-part test while taking such steps that may intrude upon people’s fundamental rights and freedoms.
- [Three-part test - That requires action that is very clear; that could not have been done by a less intrusive means; and that follows standards of necessity and proportionality.]

What was the problem with the process followed by India?

- India should have first investigated the entities.
- It should have then seen whether other mechanisms like orders, fines, etc., could be followed.
- Instead, the Centre has done an emergency blocking order.
- Then, it has said that these platforms should perhaps come to them and make a case as to why they should be unblocked.
- The Centre has said that, only after such a case, these interim orders could be overridden.

How India sees digital rights?

- India is a signatory to the International Covenant on Civil and Political Rights, and the Universal Declaration of Human Rights.
- So, it has a basic understanding that regulating the Internet by governments has to respect basic human rights standards.
- In India, it is very clear that our fundamental right to free speech and expression applies to online content too.

How the trade-off could be resolved?

- Section 69A of the I-T Act is not a new power that the government is commandeering during a time of national security emergency.
- But, the necessity of blocking the app must be very clearly made out by the government.
- In this way, we can resolve the question of where we can draw the line between this trade-off between national security and rights.

What could be done to make the system fairer?

- Currently, when the Government issues blocking orders under Section 69A of the I-T Act, it asserts secrecy and confidentiality in those orders.
- The government should immediately stop asserting that privilege, so that the public knows what is being blocked and for what reason.
- It can also undertake broader reforms.
- It can review the Section 69A of the I-T Act itself.
- National security agencies must be brought under a legal framework where people can understand what everybody’s powers are.

- If these agencies have overstepped their bounds, there must be consequences as there are consequences for everyone else.

5.3 India's Military Ties with Nepal - Gurkha Regiment

What is the issue?

- Relations between India and Nepal are currently strained with Nepal's Parliament approving a [new map](#) with Indian territories included.
- In this context, here is a look at the special ties between the Indian and Nepalese armed forces.

How did India's military ties with Nepal evolve?

- Soldiers from Nepal form a significant part of Indian Army's legendary Gurkha regiment.
- India's military connection with Nepal goes back to the reign of [Maharaja Ranjit Singh](#).
- His 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 on April 24, 1815.
- By the time the First World War started, there were 10 Gurkha regiments in the British Indian Army.
- When India got [freedom](#), these regiments were divided between the British and Indian armies.
- This was done as per the Britain–India–Nepal Tripartite Agreement signed in November 1947.
- Six Gurkha regiments with a lakh-odd soldiers came to India.
- This went on to raise another regiment called '11 Gurkha Rifles'.
- This was to accommodate soldiers of 7th Gurkha Rifles and the 10th Gurkha Rifles, who chose not to transfer to the British Army.

What are the current practices?

- Any Nepali can join the Indian Army, both as a jawan and as an officer.
- A citizen of Nepal can take the National Defence Academy or Combined Defence Services exams and join the Indian Army as an officer.
- The Nepalese army also sends its officers for training to India's military academies and combat colleges.
- The Gurkha regiments, which have 35 battalions, recruit a large number of troops from Nepal.
- There is a strong inter-personal ties between the soldiers and officers of the two countries due to the Gurkha regiments.
- Every year, battalions commission a tour of Nepal.
- Young officers from India trek to traditional recruiting areas in the rugged Himalayas.
- They meet the locals, and often live in villages with ex-servicemen.
- Both the officers and the troops are fiercely proud of their war cry 'Jai Maha Kali, Ayo Gorkhali', the khukri, and their command over Gurkhali language.
- [Khukri is a type of large, recurved traditional knife that originated in Nepal.]
- In the initial years after Independence, any officer who could not master Gurkhali in 3 months was shifted to another regiment.
- The Indian Chief of Army Staff can be the honorary chief of the Nepalese army.
- This convention dates back to 1972.
- Back then, the Field Marshal Sam Manekshaw, a Gurkha regiment officer, was made the honorary chief of the Nepalese army.
- Ever since, the Army chief of India is the honorary chief of the Nepalese army and vice-versa.

How about the rights of the soldiers from Nepal?

- Soldiers from Nepal enjoy the same benefits as the India troops both during service and after retirement.
- They get the same medical facilities as the Indian soldiers.
- They can avail of healthcare facilities in India as well.
- Also, often, medical teams from the Indian Army tour Nepal.
- The British started giving the Nepalese soldiers pension only a few years ago.
- Unlike this, the Indian Army has never discriminated against the Nepalese soldiers.
- The Indian Army also runs welfare projects in Nepal villages, including small water and power projects.

5.4 India-China-Bhutan - China's Territorial Claims

Why in news?

For the third time since early June 2020, China repeated its claim that Bhutan's eastern boundary was a "disputed" area.

What was the recent claim?

- Its first claim was at a UNDP-led Global Environment Facility (GEF) conference on 2-3 June 2020.
- Back then, Chinese representative tried to stop funding for the Sakteng forest reserve in Bhutan's eastern district of Trashigang.
- The forest, notably, has a common boundary with Arunachal Pradesh's Tawang district.



Why are the claims unreasonable?

- China has not objected earlier to funding provided to the sanctuary at the GEF.
- The Trashigang area does not share a boundary with China.
- Whatever the origins of the claim, Chinese officials have not raised the eastern boundary in 24 rounds of talks with Bhutan, that began in 1984.
- Thus far, talks have been only about the Pasamlung and Jakarlung valleys in Bhutan's north.
- The Doklam and other pasturelands to the west are also part of the talks; the areas that come up to the tri-junction point with India.



What are China's suggestions and Bhutan's response?

- China referred to a "package solution" for the dispute.
- It seems to refer to an offer made in the 1990s to swap the northern and western areas.
- But this is something that Bhutan rejected, given India's concerns.
- Bhutan's response at the start was to reject China's claim at the GEF, and it was able to secure the funding.
- Subsequently the Bhutanese Embassy in Delhi served a démarche to the Chinese Embassy.

- [Bhutan does not have diplomatic relations with China.]
- But the Chinese MFA (Ministry of Foreign Affairs) kept repeating the claim.
- Bhutan has now appeared to take a firm view of China's claims.
- It has said that all disputes would be taken up in the next round of China-Bhutan talks.
- [The last round of talks was in 2016.]
- Talks have been put off due to the Doklam stand-off in 2017, elections in 2018, and the recent pandemic.]

What possibly are China's motives?

- In Bhutan's case, the Chinese claim is seen much as a pressure tactic.
- It is an attempt to hurry the scheduling of the next meeting (China-Bhutan).
- It could also be an attempt to gain leverage in the boundary talks.
- India, on the other hand, is already dealing with Chinese aggression across the Line of Actual Control.
- So, the Sakteng claim could be a diversionary tactic.
- It could also be a move aimed at creating a divide between India and Bhutan.
- More significantly, by claiming Bhutan's eastern boundary, China is attempting to strengthen its claims over Arunachal Pradesh.

6. BILATERAL ISSUES

6.1 Italian Marines' Case

Why in news?

The Permanent Court of Arbitration has given its judgment in the Italian Marines' Case.

What is the case?

- In 2012, two Kerala fishermen were shot dead by Italian marines from the Enrica Lexie.
- Enrica Lexie is about 20.5 nautical miles off India's coast.

What is the judgment?

- The Permanent Court of Arbitration (PCA) admitted that both India and Italy had concurrent jurisdiction in the matter.
- However, it ruled that India does not have jurisdiction to try the marines as they were acting on behalf of a state.

What are the points favouring India?

- The PCA found that the Italian vessel had violated the rights and freedom of navigation of the Indian fishing vessel under UNCLOS.
- [UNCLOS - United Nations Convention on the Law of the Sea]
- The PCA has also found that the action, which caused loss of lives, property and harm, merited compensation.

Permanent Court of Arbitration (PCA)

- It is an intergovernmental organization located at The Hague, the Netherlands.
- It provides a forum for the **resolution of international disputes** through arbitration and other peaceful means.
- It provides services of arbitral tribunal to resolve disputes between member states, international organizations, or private parties arising out of international agreements.
- In PCA, parties can themselves select the arbitrators.
- The organization is **not a United Nations agency** but has observer status in the UN General Assembly.
- The rulings of PCA are **binding** but the tribunal has no powers for enforcement.

UN Convention on the Law of Sea (UNCLOS)

- It is the international agreement that resulted from the 3rd UN Conference on the Law of the Sea.
- It provides a regulatory framework for the use of the world's seas and oceans.
- UN has no direct operational role in the implementation of the Convention

- It asked the parties to consult each other on the compensation due to India as a result.

What is the argument that the PCA reject?

- The PCA rejected a key argument by Italy that India led the Italian vessel into its territory and arrested the marines.
- Another rejected argument is that India violated its obligation under Article 100 of UNCLOS.
- [Article 100 of UNCLOS is regarding measures to suppress piracy.]
- This may mean that the PCA did not view the incident as one related to piracy at all.

Is the incident really an international issue?

- The circumstances indicate that there was **no attempt at piracy** by the fishing vessel.
- The fishing vessel was **within India's Contiguous Zone**.
- It was quite clear that the offence warranted arrest and prosecution by the Central government under domestic law.
- As legal tangles were being sorted out, and India was dealing with the diplomatic fallout, the marines managed to obtain orders to leave India.
- The National Investigation Agency's invocation of a domestic act caused a **diplomatic furore** as it provides for the death penalty.
- Ultimately, it took time for these charges to be dropped.

What is the conclusion?

- The PCA's award is final and has been accepted by India.
- This is a huge setback for the expectation that the two marines would face a criminal trial in India.
- The takeaway for India should be the lessons, in the legal and diplomatic domains, which can be drawn from the experience.

7. INTERNATIONAL ISSUES

7.1 Hagia Sophia Controversy

Why in news?

Turkey's highest court convened to decide on turning Istanbul's Hagia Sophia museum into a mosque

What is the Hagia Sophia?

- Hagia Sophia is listed as a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site.
- It is a 1,500-year-old iconic structure built in 532 AD.
- It was originally a Greek Orthodox Christian patriarchal cathedral.
- In 1453, it was turned into an Ottoman imperial mosque.
- In 1934, Mustafa Kemal Ataturk, the founder of the Republic of Turkey, turned it into a museum, to make the country more secular.
- There have been calls for long from Islamist groups and nationalists in the country to convert the Hagia Sophia back into a mosque.
- In 2019, Turkey's President Recep Tayyip Erdogan had said he would turn the structure back into a mosque again.

What is the controversy about?

- When Erdogan entered politics three decades ago in Turkey, he objected to the calls to convert Hagia Sophia into a mosque.

- But his rhetoric changed in 2019 during municipal elections in Istanbul that he ended up losing.
- Erdogan's plans for the conversion of the Hagia Sophia are closely connected with his attempts to score political points.

Why is Greece objecting to this conversion?

- The controversy about the Hagia Sophia comes at a time when there are diplomatic tensions between Turkey and Greece over other issues.
- In May 2020, Greece objected to the reading of passages from the Quran inside the Hagia Sophia.
- Greece's Foreign Ministry had issued a statement saying this move was a violation of UNESCO's 'Convention Concerning the Protection of the World Cultural and Natural Heritage'.
- Greece had said the Hagia Sophia had been designated a museum of world cultural heritage.

What is Turkey's response?

- Turkey responded by saying that Greece's objections to the reading of passages from the Quran were indicative of its intolerant psychology.
- Some within Turkey's political circles view the issue of Hagia Sophia as a domestic matter.
- So, they do not seem to welcome the interference of international players.

What is next?

- Erdogan does not need the courts to decide on the fate of the Hagia.
- The courts believe that legal rulings will add legitimacy to his proposals.
- There has been opposition to these plans within Turkey, as the religious minorities do not wish to be involved in such a polarising subject.
- Greece had appealed to UNESCO, objecting to Turkey's moves on grounds that the conversion would violate international conventions.
- The UNESCO too has denounced Turkey's plans.

7.2 UK's Citizenship Test

Why in news?

Historians have called on the United Kingdom's Home Office to review its citizenship test.

What is the citizenship test?

- The UK's citizenship test is called the 'Life in the UK Test'.
- It is a requirement for applicants who wish to acquire UK citizenship.
- This test is based upon an official handbook published by the UK's Home Office.

What is the issue with this handbook?

- In this official handbook, the Britain's history was retold in such a manner that it sanitises the nation's violent and brutal past.
- The handbook contains misleading and false representation of history during Britain's colonisation.
- This representation may be difficult for citizenship applicants from nations that were former British colonies.

What are the objections to this test?

- In an open letter, 181 signatories have called for a review of this test.
- They want a review because the handbook, on which this test is based upon, is fundamentally misleading and demonstrably false.
- The test appears to glorify Britain's colonial past, say the historians.
- There are many examples that the historians have highlighted in their letter.

What are the highlighted examples?

- The handbook states that while slavery was illegal within Britain itself, by the 18th century, it was a fully established overseas industry.
- The historians say that whether slavery was legal or illegal within Britain in the 18th century was a matter of debate.
- The handbook does not mention about the three million people who were transported as slaves and that people died during these journeys.
- It states that in the 20th century, there was an orderly transition from Empire to Commonwealth, with countries given their independence.
- The historians say that decolonisation was not an ‘orderly’ but an often-violent process.
- The handbook promotes the misleading view that the Empire ended simply because the British decided it was the right thing to do.
- Similarly, the abolition of slavery is treated as a British achievement, in which enslaved people themselves played no part.
- The historians state that people of colour and people in colonies also have not been adequately represented in this retelling of history.
- Their contributions to the development and growth of Britain have been entirely omitted in the handbook.

Was the Home Office’s citizenship test handbook ever revised?

- Given the handbook’s latest edition was published in 2013, the presence of these inaccuracies are even more troubling.
- The handbook is not just a relic that has been continuously used without consciousness about these factual errors and misstatements.
- Conversations regarding historical inaccuracy and the whitewashing of Britain’s colonial past were very much occurring in 2012-2013.
- This was the time when the process for republishing the handbook in an updated edition had started.
- Despite this, the Home Office had made no attempts to consider its own role in regurgitating convenient, white-washed retellings of history.
- Historical knowledge is and should be an essential part of citizenship.
- However, historical falsehood and misrepresentation should not.

Why is the handbook problematic?

- For applicants from former colonies with knowledge of imperial violence, this account is offensive.
- For those from outside the former Empire without prior education in history, the official handbook creates a distorted view of the British past.
- For British citizens in general, the official history perpetuates a misleading view of how we came to be who we are.

What has been the Home Office’s response?

- It appears that the Home Office has taken note of the letter.
- A Home Office spokesperson said that the Office would keep its contents under review and consider any feedback that they receive.
- But, it was not clear if the concerns highlighted in this specific letter were going to be considered by the Home Office.
- This comes at a time when the Black Lives Matter movement has led to widespread protests across the UK and Europe.

7.3 US Immigration Visa Guidelines

Why in news?

The United States Immigration and Customs Enforcement (US ICE) has given new regulations for international students' visa.

What are the new US regulations?

- International students might have to leave the US if their universities moved classes entirely online in the upcoming semester.
- The agency also said that if students would not move back, they would face the risk of deportation.
- Students attending schools offering normal in-person classes can stay.
- However, they cannot take more than one class or three credit hours online.

What do these regulations mean for Indian students?

- Indian students currently enrolled in schools or programmes that are entirely online for the fall semester will have to come back home.
- They can stay back only if they take alternative steps like moving to a school that offer in-person instruction or choose a medical leave.
- As the pandemic forced American campuses to shut down, Indian students had to come back to India.
- These students would not be permitted to enter the US if their classes are entirely online.
- The same applies to prospective students who were going to join in the fall semester.

What would happen to those enrolled in universities with a blend of classes?

- Indian students enrolled in universities that have announced a hybrid blend of in-person and online classes for the fall semester can
 1. Remain in the US, and
 2. Those who returned to India will be allowed to re-enter the US.
- They will be allowed to take more than one class or three credit hours online.
- The university will have to certify to the US government that the student is not taking an entirely online course load for the fall 2020 semester.
- This exemption does not apply to F-1 visa students in English language training programmes.
- Also, this exemption does not apply to M-1 visa students, who are not permitted to enrol in any online courses.

Why has the US government announced these changes?

- International students in the US are required to do most of their learning through contact classes.
- The campus shutdowns forced the government to provide temporary exemptions for international students to take more online classes.
- However, these exemptions were made only for the spring and summer semesters.
- The Student and Exchange Visitor Program (SEVP), under the US ICE, did not say much on the reasons behind revisiting the above exemptions.
- Some are seeing this as a pressure tactic to get universities to reopen for the fall semester.

How will this affect international enrolment in US universities?

- The US universities have already made admission offers to international students.
- The SEVP announcement could encourage prospective students to defer their joining to the next semester.
- As for the active or enrolled students, they may even drop a semester.
- **QS Survey of international students** - Over half the respondents of the survey intended to defer their entry into foreign universities due to the Covid-related uncertainties.
- The revised US guidelines are only going to cement such intent further.

- This means revenues of US universities, especially those that have announced an online fall semester, are bound to get hit.

How have the US universities reacted to the new guidelines?

- Some universities have been quick on the uptake.
- They have changed their fall semester plans in less than a day of the government announcement.

7.4 US-Huawei-ZTE tussle

Why in news?

The US Federal Communications Commission (US FCC) designated Chinese telecom vendors Huawei and ZTE as national security threats.

Why has the US banned Huawei and ZTE?

- The first official action on these Chinese telecom equipment makers was taken based on House Intelligence Committee's report (2012).
- The report said that both the companies posed a risk to national security.
- It also said that the US businesses should avoid buying equipment from them.
- On most occasions, the US had accused Huawei and ZTE of working in ways that were contrary to national security or foreign policy interests.

Why is this ban important?

- Huawei is the world's largest maker of telecom equipment and the second largest maker of mobile phone parts.
- It has been at the forefront of innovation that allowed many companies to build large telecom infrastructure at very low costs.
- ZTE has tied up with several big corporations to manufacture their patented equipment in China at very low costs.
- A ban on both Huawei and ZTE could mean an **increase of up to 30% in cost** of telecom equipment across the board.
- Apart from hardware, Huawei has also been trying to make inroads into the software and operating systems (OS) industry.

Will the Huawei ban impact India?

- This decision could put pressure on India to take similar action.
- **Equipment market** - The low cost equipment from Huawei or ZTE could provide some relief to domestic telcos.
- Huawei was a major equipment supplier to companies like Vodafone Idea and Airtel during the initial rollout of the 4G services in India.
- Over the years, Huawei has made inroads into nearly 25% of the total telecom equipment market in India.
- **4G expansion** - Now, Department of Telecommunications said that it would rework the 4G network expansion tenders of BSNL and MTNL.
- This would bar global vendors like Huawei and ZTE from participating.
- **5G trials** - In 2019, the telecom minister said that all players, including Huawei, were permitted to participate in 5G trials in India.
- To allay security fears, Huawei had said it was ready to sign a no backdoor agreement with the government.
- Under the agreement, Huawei would vouch that it did not gain access to any Indian customer's equipment under any circumstance.
- Barring Huawei and ZTE from even bidding in the 5G auctions could mean equipment as much as 30% costlier.

G.S PAPER III

8. ECONOMY

8.1 Recovering Auto Sector

Why in news?

Coming out of lockdown, the Indian automobile sector is seeing a recovery trend.

What is leading to the recovery in India?

- **Demand for compact small cars** mostly by first-time buyers is driving the car sales in India.
- The new realities of social distancing and scare of contracting the virus is driving more and more individuals to buy a car.
- While urban areas have been more impacted by Covid-19 and the lockdown, rural India is witnessing a faster recovery.
- Manufacturers are expecting the recovery trend to remain strong as the inquiries and booking are rising fast.

Which segment is seeing the demand?

- Mini and compact car segments together have seen the best recovery.
- The companies who do not have small cars in their portfolio have lagged in recovery in June 2020.

Is the recovery momentum expected to continue?

- The enquiries and bookings are on a steady rise in the auto sector.
- As demand is on the rise, the elimination of production and supply bottlenecks will only improve the sales efficiency going forward.
- The demand from the consumer side has achieved a 80-85% normalcy.
- But, the industry is still at around 50% normalcy when it comes to wholesale sales.
- However, that is improving with every passing week.

Why is auto sector important?

- Indian automotive industry accounts for over 7 % of the country's GDP.
- It accounts for 22% of the manufacturing GDP.
- The industry supports more than 3.7 crore employment.
- With GST collections of around Rs 1,50,000 crore, it accounts for nearly 15% of total GST collection of the country in a year.
- The sector is one of the biggest recipients of foreign direct investment.

What could hinder the revival momentum?

- A spike in Covid-19 cases in India both in rural and urban India may just derail the recovery momentum.
- This spike may force the centre and states to go slow on reopening the economy or to even close certain activities that have been permitted.
- It may also limit the movement of workers, derailing the production revamp process for the industry.
- As India reopens, it needs to closely monitor the case numbers and containment zones in order to avoid the community spread.

8.2 Banking Regulation (Amendment) Ordinance, 2020 - Co-operative Banks

Why in news?

- The Centre recently passed the Banking Regulation (Amendment) Ordinance, 2020.

- It gives the RBI more regulatory powers over urban co-operative banks (UCBs) and multi-State co-operative societies.

What does the amendment mean in practice?

- The Ordinance amends the Banking Regulation Act, 1949 as applicable to cooperative banks.
- With respect to UCBs and multi-State co-operative societies, the RBI will now have powers to -
 - supersede boards
 - restructure managements
 - formulate resolution plans
- The change will subject 1,544 co-operative banks to greater RBI supervision.
- It will also partly address the problem of dual regulation by registrars of co-operative societies.
- Notably, the dual regulation is often cited as the reason for the string of co-operative bank failures.
- The Centre has expressed hope that this decision would reassure the 8.6 crore depositors in these banks about the safety of their money.

What are the concerns though?

- **RBI** - The RBI already has enough responsibilities in monitoring regulatory compliance by the following under its watch:
 - 86 scheduled commercial banks
 - 10 small finance banks
 - 53 regional rural banks
 - thousands of NBFCs
 - housing finance companies (recently been added)
- So, the addition of over 1,500 new constituents is unlikely to make its task easier.
- **Role of UCBs** - The UCBs were originally conceptualised to further financial inclusion.
- But it is questionable if the UCBs are faithfully fulfilling this mandate.
- A 2014 study in this regard shed some light.
- It finds that smaller, unscheduled UCBs were indeed focussed on sub-Rs.10-lakh loans
- The larger scheduled UCBs actually make up for the bulk of the deposit and asset base of the co-operative banking sector.
- But these have stayed quite far from their original mandates.
- These were actively vying with commercial banks in extending non-priority sector loans to commercial borrowers.
- In the process, they have availed themselves of numerous regulatory concessions.
- UCBs do cater to smaller depositors ignored by commercial banks.
- But the failure of players such as PMC Bank shows that their lax lending practices can put depositors' money at risk.
- **Approach** - Banking correspondents, Mudra loans and Jan Dhan accounts, apart from microfinance NBFCs and small finance banks are active in the banking landscape.
- Given this, the UCBs seem less relevant.
- There are better alternatives to balance macro financial inclusion objectives with depositor interests.
- It is perhaps for this reason that the RBI has refrained from granting new UCB licences in recent years.

How has RBI dealt with it?

- RBI has tried to implement the recommendations that UCBs be actively encouraged to convert into small finance banks.
- By doing so, the regulatory arbitrage can be bridged.
- Since the PMC Bank failure, the RBI has ushered in several new rules to tighten governance structures at UCBs.
- It has sought more disclosures of loan books and constituted new boards of management.
- However, given the deep-rooted issues at many UCBs, it is doubtful if they will be able to manage the transition.

8.3 Taxing E-Businesses - ESS EQL

What is the issue?

- With models of e-businesses evolving at a rapid pace, taxation around the same has become a huge debate between countries.
- In this context, here is an overview on the models of taxations globally and in India, and the concerns for Financial Services (FS) industry in this regard.

What is the G20 response?

- The G20 recognised this as a major issue requiring guidance around how countries should tax such e-businesses.
- The OECD, nominated by the G20, has put in a lot of efforts to develop a globally-acceptable tax model.
- The same is being debated across member nations.

What is the EQL that India introduced?

- In 2016, India introduced equalisation levy (EQL).
- This was to tax India-sourced income earned by a non-resident (NR) from online advertisements through digital means.
- This covers entities earning advertisement revenue from India through digital means, but not being subject to tax in India.
- Since its introduction, the government of India has seen EQL's contribution to the Indian exchequer increasing.

What is the recent change?

- In the course of the enactment of the India Budget 2020, the government expanded the scope of EQL with effect from April 1, 2020.
- It now covers within its ambit the e-commerce supply or services (ESS) provided by an e-commerce operator (EOP).
- It was a unilateral move by the government; while the OECD is yet to conclude its discussions.

What does this mean in practice?

- E-commerce operator (EOP) is defined as any NR who owns, operates or manages digital or e-commerce facility/platform for the online sale of goods or online provision of services.
- [NR - as per Indian tax laws (ITL)]
- The ESS EQL shall apply to ESS made or provided or facilitated by EOP to a person, among other things -
 - i. resident in India (or)
 - ii. using internet protocol address located in India
- Also, it applies where the sales, turnover or gross receipts in a year exceeds Rs 2 crore.
- The consideration received shall be taxable at 2%.

What is the case with financial services industry?

- The ESS EQL shall apply to instances of e-commerce platforms situated outside India or online sale of software and the like.
- Notably, the financial services (FS) industry should be outside the purview of ESS EQL, as they are not EOP.
- However, given the language of the regulation and in the absence of any specific exclusion for the FS industry, it is not free from regulation.
- This can be illustrated below:
 - i. an Indian company (ICo) has sold goods to a customer in the US through an e-commerce platform in the US
 - ii. ICo has tied up with a money exchanger in the US to collect and remit the funds to ICo for a commission/fee
 - iii. ICo makes payment to the merchant through a payment gateway (a NR entity), which charges network fees for the payments transmitted
- Prior to April 1, 2020, the afore-mentioned commission/fee was not subject to tax in India.
- This was because the NR did not have any presence in India.
- However, with ESS EQL in place, the consideration received by NR may now be subject to tax at 2%.
- The NR is required to obtain a tax ID in India and adhere to compliances.
- The failure of this would result in levy of interest and penalty.

What are the challenges involved?

- EQL is not administered under ITL, but it is governed by a separate legislation.
- Accordingly, the availability of treaty protection and foreign tax credit in the home jurisdiction for NR is likely to be a challenge.
- The objective of the government in expanding the scope of EQL was to cover supply of goods or services provided by NR.
- However, the financial services industry, too, has been covered within the ambit of ESS EQL.
- Now, ESS EQL may require the financial services players to relook at their commercial arrangements.
- This may, among other things, involve passing on transaction costs to customers in India.
- Countries like the UK, France and Spain have amended their digital tax laws to exclude the financial services industry.
- A clarification on similar lines from the Indian government will be welcomed by the financial services industry in India.

8.4 India's Trade Surplus: A Warning

Why in news?

RBI has released India's balance of payments data for the January-March quarter of 2019-20.

What does the data reveal?

- During this quarter, India has managed a **current account surplus**, which is around 0.1% of the GDP.
- This surplus is largely **driven by a lower trade deficit**.
- Data from the Commerce Ministry show that for April and May 2020, India's trade balance has improved.
- This surplus is due to the invisibles, emanating mainly out of services exports and remittances.
- Due to this surplus, India's substantial trade deficit turns into a moderate current account deficit.

Why does India mostly have a trade deficit?

- Inability to export more and import less can be held responsible.

- Lack of export dynamism in comparison with its East Asian neighbours.
- Large imports of oil, gold, and electronics have chronically inflated our import bills.
- Thus, any news of a reduction in trade deficit is greeted with an expectation that it may represent dynamism of the Indian economy.

What are the current trends in international trade?

- The World Trade Organisation's (WTO) trade data show that the Covid crisis has had a severe impact on international trade.
- As the world went into a lockdown, it severely affected economic activities everywhere.
- Estimates by the WTO suggest that for the second quarter of 2020, the global trade is likely to suffer a year-on-year drop of around 18.5%.
- [Second quarter of 2020 - A period when the lockdown was in place]
- This is one of the steepest falls in international trade on record.
- Along with the lockdown, the WTO attributes this decline to the growing geopolitical and trade tensions.

What are the current trends in Indian trade?

- India's trade also suffered. India's merchandise trade has gone down in April 2020, before recovering in May.
- [Merchandise trade = Exports + Imports]
- Compared to May 2019, India's total merchandise trade declined around a 45% in May 2020.
- Merchandise exports declined by around 36.3%.
- Merchandise imports suffered a decline by more than 51%.
- An improvement in trade performance is seen in May 2020, compared to April 2020.
- However, it is possible that some of the increases in May are due to the release of held-up consignments at the ports.

What is the impact on trade in services?

- The impact on trade in services is much less severe.
- After all, services trade in India is dominated by IT/ITES exports, which are less susceptible to disruptions in logistics.
- When compared with January and February 2020, the average trade in services has declined in April and May.
- As the Covid-19 crisis has led to a complete shutdown of some major service sectors like airlines, this moderate decline in services trade is a relief.

What is the warning sign?

- Overall, India's trade balance in April and May 2020 has turned positive.
- However, this improvement in trade balance has been driven mainly by a sharper decline in imports.
- This is a warning sign for the economy, as the decline in imports points towards a contraction of demand in the real economy.
- A decline in imports (May 2020) was led by a sharp decline in imports of gold, petroleum goods, coal, electronics and machineries.
- Declining petroleum prices and rising gold prices have affected the import patterns.
- The sharp decline in imports of fuel and machinery indicate a severe demand slowdown in the economy.
- Covid-19 is going to have a heavy toll on the economy.

8.5 Social Stock Exchange

Why in news?

Social Stock Exchange (SSE) would be established by the SEBI as a structure within the existing stock market ecosystem.

What would be the purpose?

- SSE would enable the social enterprises and voluntary organisations to raise funds.
- India's rank is 129 among the 189 countries on the Human Development Index (HDI).
- [HDI tracks the progress made in education, health and income]
- So, there is indeed a pressing need to do more for the social sector.

What is the problem?

- Successive governments are under-investing in the social sectors.
- So, the onus has mostly fallen on private entities, that are constantly starved for funds.

How would SSE help to overcome this problem?

- Funds from individual philanthropists have been quite strong in India, amounting to ₹ 70,000 crore in 2018.
- There is an opportunity to help these entities tap other sources of funding such as international philanthropy, domestic CSR, and so on.
- The SSE can play a role here as a platform that brings these funds and causes together.

How do global social exchanges operate?

- The SEBI is complicating matters by allowing both the non-profit organisations and for-profit entities on the SSE.
- Many of the global social exchanges cater only to NPOs.
- They act as an intermediary that screens and certifies them and helps them find eligible donors.
- SEBI can follow this model for SSE, in order to keep things simple.
- According to government estimates, there were 31 lakh NPOs in India and these entities are in more urgent need for funds.

What is a provision that would be misused?

- A self-declaration by FPEs is needed about being a social enterprise.
- This is likely to be misused, in the absence of agencies that can do independent verification of the declarations made by these FPEs.
- The regulator should first establish the mechanism for verifying these claims.

What are the other provisions?

- **Eco-system** - A welcomed suggestion is to build an eco-system, which includes,
 1. Establishing a self-regulatory organisation,
 2. Bringing together the information repositories on NPOs,
 3. Standardising the reporting standards for social impact, governance, etc.,
- With regard to fund-raising, the SEBI recommends that NPOs can raise zero coupon zero capital bonds on the SSE that will be akin to donation.
- **Instruments** - The SEBI suggests listing of equity and debt of NPOs.
- It suggests raising social and development impact bonds.
- It also suggests using social venture funds and mutual funds to channel money into charitable causes.
- These instruments can help worthy causes.
- But liquidity in these instruments is likely to be scant, even if market makers are established in every counter.

- The investors participating on this platform have to be mature enough to understand that they are not playing for returns.

What could be done?

- It would be best to allow foreign philanthropic funds to put money in this platform.
- Indian companies should be allowed to invest their CSR money in entities listed on a social stock exchange.

8.6 Rising Forex Reserves - Cautious Approach

What is the issue?

- India's forex reserves crossed \$500 billion for the first time ever in the week ended June 5, 2020.
- However, the nature of factors contributing to it and the economic uncertainties posed by the pandemic call for a cautious approach.

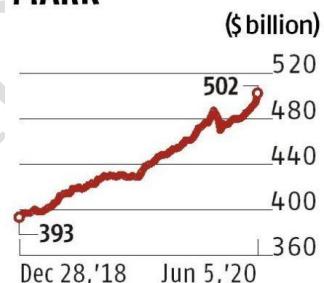
What are forex reserves?

- Forex reserves are external assets accumulated by India in the form of -
 - gold
 - SDRs (special drawing rights of the IMF)
 - foreign currency assets (capital inflows to the capital markets, FDI and external commercial borrowings)
- These are controlled by the Reserve Bank of India.

Why is the present reserves position encouraging?

- The RBI was able to increase its reserves by \$79 billion over the past year (FY19) and by \$29 billion since the beginning of the 2020-21 fiscal year.
- The \$500 billion mark comes as an encouraging development amidst the current gloomy economic scenario, given the COVID-19 pandemic.
- The reserves will be useful if global financial conditions deteriorate further, causing turbulence in currency markets.

HALF-A-TRILLION MARK



What were the contributing factors?

- The dollar-rupee swap auctions conducted in March and April 2020 have helped increase reserves to some extent.
- But besides this, there is also a couple of other unplanned and some fortuitous developments as well.
- Notable among them are the rising external commercial borrowings (ECB) and an unexpected trade surplus.
- Global central banks are pumping in enormous amount of money into the global economy and moving interest rates lower.
- With this, Indian companies have found it easier to raise funds overseas at cheaper cost.
- Resultantly, ECBs raised in FY20 were 127% higher compared to FY19.
- In the first two months of 2020-21 fiscal, corporates had already borrowed over \$2 billion.

What is the need for caution though?

- Increased overseas borrowing has downsides too.
- Corporates can struggle to roll over the loans if the rupee continues depreciating or if the interest rate cycle overseas turns adverse.
- It is also essential to be cautious about the favourable trade balance.
- This is because the current trade surplus is caused mainly by declining demand.
- Merchandise imports were sharply lower in April and May 2020, in line with contraction in global trade.

- Once domestic demand revives with the economy unlocking, demand for petroleum and other products is likely to revive.
- So, there might be pressure on the trade balance once again.
- On the other hand, foreign portfolio investments have not been too robust in 2020.
- FPIs (Foreign Portfolio Investors) have turned net buyers in equities in May and June 2020.
- However, they could turn net-sellers again if risk-aversion spikes.
- That might cause outflows from global emerging markets, if the pandemic does not settle down by the end of this year.
- Likewise, foreign direct inflows were strong until March 2020.
- Inflows in FY20 were 40% higher compared to the previous fiscal year.
- But, direct investments are likely to be much lower in FY21 as businesses struggle to stay afloat amidst the pandemic.
- Remittances from NRIs are also likely to be lower with many overseas Indians witnessing pay-cuts or job losses.

How does the future look?

- Given the above uncertainties, the RBI is being only prudent in its strategy to continue buying dollars.
- This adds to the buffer as well as helps to keep the rupee weak, making it competitive in the export market in relation to its peers.
- [Notably, the Indian currency is down 4.5% so far in 2020.]
- Other countries have also witnessed an increase in their forex reserves in the May and June 2020.
- This highlights the fact that India needs to be ready to face future turbulence.

8.7 Discom Loan Package

Why in news?

The Centre has announced Rs 90,000 crore loan package for discoms.

How this package is viewed?

- This package is being seen as a boon for the generation companies or gencos of the power sector.
- Improvement in their cash-flows will help their credit rating, and enable fresh funding.
- State government guarantees against the loans to the discoms will help PFC and REC to treat the loans as standard assets.
- However, that is no assurance against default in debt-servicing.

What had happened historically?

- Historically, in spite of delays, no lender has invoked a state government guarantee.
- Over the years, the Centre has formulated various schemes to help the ailing state power sector.
- In spite of these measures, there has been no real improvement in the functioning of the distribution companies, or discoms.

What is the pattern observed?

- Diversion of funds meant for capital expenditure to meet interest liability is rampant.
- This had resulted in further increase of liabilities with no creation of assets.
- Therefore, no significant investment has been seen in terms of strengthening sub-transmission and distribution, systems improvement, or separation of agriculture feeders.
- Virtually no power project in India has ever been completed without cost and time overruns.
- Many private players quoted unworkable tariffs in making successful bids for projects.

What can be observed from the 2015 UDAY scheme?

- This scheme aimed at financial turnaround, operational improvement, reduction in cost of generation, development of renewable energy, energy efficiency and conservation.
- State governments took over 75% of the debt of discoms and issued low-interest bonds.
- In return, discoms were given a deadline (2017-19) to meet efficiency parameters by 2019.
- The turnaround envisaged by UDAY hasn't materialised, with several targets missed.

What are the problems faced by players?

- Apart from the financials of the discoms, banks and financial institutions have contributed to the **stressed assets** of many power producers.
- Many naphtha/gas-based stations were built, but the absence of gas supply and import of costly naphtha added to their woes.
- Most of these plants are shut today.
- Many private power plants suffered as banks took time in approving revised project costs.
- With no cash flow, the natural fallout was defaults.
- As a result, many of the private projects face IBC proceedings or liquidation.
- The Appellate Tribunal for Electricity's (APTEL's) order mandated electricity regulatory commissions to initiate suo-motu proceedings for discoms tariff revision.
- But, no tangible action is visible.

What was the Finance Ministry's announcement?

- The Finance Ministry's announcement regarding privatisation of discoms in the Union Territories is a welcome step.
- This should be adopted by states which are reform oriented.
- Private players, with successful experiences in distribution, can be retained on an agency basis on a profit-sharing model.
- Demonstrated improvements in Delhi by Tata Power and BSES show how investment in system strengthening can make a difference.

8.8 Policy on Strategic Sectors - Privatisation

Why in news?

The central government has said that guidelines on the privatisation of the public sector companies would be out soon, along with the policy on strategic sectors.

What does strategic and non-strategic sectors mean?

- Currently, there is no clear definition of strategic sector.
- According to some regulatory purposes, only space and atomic energy are considered strategic.
- The Railways is categorised as a sector involving social good, and so eligible to be in the government sector only.
- Now, Banking, insurance, defence, and energy are likely to be part of the strategic sector list, which is expected to have as many as 16 sectors.
- Under the new definition, non-strategic sectors will include hotel & tourist services, transportation vehicle & equipment, industrial & consumer goods, trading & marketing, and transport & logistics.

What is the proposed plan?

- The government had announced the Atmanirbhar Bharat economic support package in May 2020.
- The Finance Minister had said that the proposed policy would notify the list of strategic sectors.
- These would require the presence of at least one state-owned company along with the private sector.

- In all other sectors, the government plans to privatise public sector enterprises, depending upon feasibility.
- The number of enterprises in strategic sectors will be only one to four, to minimise wasteful administrative costs.
- Others would be privatised/merged/brought under a holding company structure.
- The policy will put out a “general framework.”
- Specific decisions, on which company is to be privatised, merged, or put under a holding company structure, would be taken later on.
- This is expected to be a long-term process rather than a one-time move on the privatisation of companies.
- After inter-ministerial consultations to finalise strategic sectors, the policy will be put up before approval of the Union Cabinet.

What is the significance?

- This is the first time since 1956 that the government has said it will not have state-owned companies in the non-strategic sector.
- In other words, there will be complete privatisation of companies in the non-strategic sectors once the strategic sectors policy is in place.
- Also, the number in the strategic sectors is said to be reduced.

What is the possible sector-wise categorisation?

- Nuclear Power Corporation of India, Antrix Corporation and PowerGrid will be among a small handful of state-owned companies to continue to enjoy immunity from privatisation.
- Indian Railways, National Highways Authority of India and Food Corporation of India will obviously remain under full government control.
- These are monolithic entities supported by specific Central laws.
- They also have functions inseparable from well-entrenched, flagship government policies.

What are the ongoing processes?

- The government has already set in motion privatisation plans for large PSU companies.
- These include BPCL, Air India, Container Corporation of India, and Shipping Corporation of India.
- Budget 2020-21 had announced plans -
 - i. to sell part of the Centre's stake in Life Insurance Corporation (LIC) through an initial public offer (IPO)
 - ii. on the sale of equity in IDBI Bank to private, retail and institutional investors

What are the expected changes?

- The policy offers significant scope for large-scale privatisation and/or consolidation of central PSUs.
- The emphasis on privatisation could see companies in chemicals and infrastructure space being privatised.
- The move could also see the entry of private players into atomic energy and space sectors.
- However, the sole state-run entities in these sectors (Nuclear Power and Antrix) will retain their public sector character.
- The government has also stated its intent to reduce the number of state-owned banks, with government having just few very large banks under its fold.
- This could see some smaller banks being privatised in due course.
- A holding company structure could also be used to house equity of smaller banks in one entity.

8.9 NFRA's Action against Deloitte

Why in news?

The National Financial Reporting Authority (NFRA) has taken action against an auditor who led the audit of IFIN in 2017-18.

What is NFRA?

- The NFRA is a national regulator for auditors.
- It was set up in 2018 under the Companies Act, 2013.
- It was set up specifically to investigate the **role of auditors in frauds** in listed and large public interest entities.
- Previously, only the Institute of Chartered Accountants of India can bar chartered accountants from being appointed as auditors for a company.
- Also, the Securities and Exchange Board of India (SEBI) was permitted to bar CAs from auditing listed companies.

What is IFIN?

- IL&FS Financial Services (IFIN) is a subsidiary of IL&FS.
- It ran into deep financial trouble after running out of cash in 2018.

What action has been taken in this case?

- The NFRA has fined Udayan Sen, the former CEO of Deloitte Haskins and Sells, Rs 25 lakh for lapses in the audit.
- It also barred the auditor from auditing activities for seven years.
- The NFRA noted that Deloitte was providing such non permitted services to companies related to IFIN, including the IL&FS.
- This is the first order of its kind by NFRA.

What are the roles of auditors?

- The role of an auditor is to report on whether a company's financial statements have been reported in line with accounting standards.
- An auditor has to raise red flags in case the auditor notes any concerns regarding the statement of accounts or in any financial transactions entered into by the company.
- Auditors are also required to ensure that there is no conflict of interest in their own appointment.

On what grounds can auditors be barred?

- Auditors can be barred for **professional misconduct** including not exercising due diligence, or for **gross negligence** in their duties.
- The Companies Act prohibits audit firms from providing certain **non-audit services to clients** that they are auditing.

What kind of action has been taken against auditors earlier?

- In 2018, SEBI barred an audit firm from auditing listed companies for two years.
- It barred two auditors from auditing listed companies for three years.
- They were barred for professional misconduct in the Satyam Computers scam, which came to light in 2009.
- But, the Securities Appellate Tribunal (SAT) quashed the order in 2019.
- SEBI has appealed against the order by the SAT in the Supreme Court.

9. INFRASTRUCTURE

9.1 Coal Mine Auctions

Why in news?

The Central government has launched the auction of 41 coal blocks for commercial mining.

What is the decision?

- The decision was part of the announcements made by the Centre under the Atmanirbhar Bharat Abhiyan.
- The private players will be allowed to mine coal for commercial mining purposes, **without any end-use restrictions**.
- Successful bidders will obtain leasing rights from State governments to mine a coal block for a certain period.
- A **revenue-sharing basis** is opted for payment as against the current method of paying fixed rupee per tonne.
- In the revenue-sharing basis, a percentage of revenue share (final bid) has to be paid to the government on the sale of coal.
- The operational efficiency parameters have been liberalised.

Why mining was nationalised previously?

- India has a long history of commercial mining, starting from 1774.
- In second half of 20th century, the private players could not make adequate **capital investments** to meet the energy needs of India.
- Some private miners were found to be using **unscientific coal mining** practices and providing **poor working conditions** for labour.
- This led to the Central Government to nationalise private coalmines.
- The nationalisation was done in **two phases**, from 1971-1973.
- The Coal Mines (Nationalisation) Act, 1973 was enacted for this purpose.
- This Act restricted coal mining operations mainly to government entities.

Does India import coal?

- India imports around **240 million tonnes** (mt) of coal a year valued at about ₹ 1.7 lakh crore.
- The 41 mines opened for auction now can hit a peak production of 225 mt in 2025-26, saving foreign exchange.
- A High Powered Expert Committee (2017) recommended a shift from the allocation of coal blocks for own consumption to commercial mining.
- Commercial mining would help **tap the locally available reserves**.
- It would also increase the availability of coal in the Indian market at a cheaper price making India **less dependent** on imports.

What is the significance of the decision?

- The private sector involvement would help realise ₹ 33,000 crore of **capital investment** in the next five years.
- It can give a leg up to the economic activity within the country.
- It would play an important role in **job and income creation**.
- Higher production and surplus availability of coal may lead to fall in its prices.
- This, in turn, may **reduce the cost of electricity** consumed by the households and industries.
- Currently, coal-fired plants generate about 70% of India's electricity.

- However, there needs to be a fine balance between short-term cost savings and long-term environmental impact.

9.2 Chabahar Port Project

What is the issue?

- India should not lose the Chabahar port project in Iran, as it has a geostrategic importance.
- India's loss in failing to develop the project might be China's gain.

What is the concern?

- After many appeals to India, Iran decided to go on its own now.
- It began to lay tracks for the line connecting Chabahar to Afghanistan and Turkmenistan.
- Iran claims it will fund the railway using its own resources.
- But, it seems to have embarked on the Chabahar-Zahedan project with a confidence borne from an imminent deal with China.
- This deal with China is a 25-year, \$400 billion strategic partnership on infrastructure, connectivity and energy projects.

What is the project about?

- The Chabahar port project was signed in 2003.
- It has been a symbol of traditionally important India-Iran ties.
- Connected by sea-lanes to ports on India's west coast, Chabahar would form the fulcrum of India's outreach to Russia and Central Asia.
- This enhances the connectivity, energy supplies and trade.

Why did India sign the 2016 agreement?

- Pakistan had blocked Indian aid to Afghanistan and all trade over land.
- But, Chabahar provided India an alternative to bypass Pakistan.
- As a result, the government had fast-tracked plans for the project.
- In 2016, India signed a trilateral trade and transit agreement with Iran and Afghanistan.
- According to the agreement,
 1. India was granted a 10-year lease to develop and operate two terminals and five berths, access to the Chabahar free trade zone.
 2. India got the opportunity to build the 628 km rail line from Chabahar to Zahedan, just across the border from Afghanistan.

How did India implement this 2016 agreement?

- The government acted quickly to develop Chabahar port facilities.
- Through this port, India sent exports to Afghanistan in 2018.
- It has also moved over half-a-million tonnes of cargo for Afghanistan.
- However, the rail line has never taken off despite a commitment from state-owned IRCON, to undertake its construction at \$1.6 billion.

What were the hurdles?

- There were contract changes by the Iranian side.
- There were delayed responses from the Indian side.
- The main hurdle has been the fear of American penalties.
- However, India was able to negotiate a sanctions waiver for the Chabahar port and rail line from the U.S.

How Iran's recent decision should be viewed?

- Regardless of the reasons for India's inability to join the railway project, the decision can only be seen as an opportunity lost.
- The impression that India wavered due to U.S. pressure also questions New Delhi's commitment to strategic autonomy.

9.3 Unified Gas Price System

Why in news?

The government has proposed for a unified gas price system.

How are tariffs decided currently?

- Tariffs for transportation of gas are set separately for each pipeline.
- It is set by the Petroleum and Natural Gas Regulatory Board.
- It is set based on the volume of gas transported on the pipeline and its operating life aimed at providing the operator a pre-tax return of 18%.
- Tariffs for pipeline usage are divided into zones of 300 km.
- Tariff increases for zones further away from the point where gas is injected.
- Further, if a buyer needs multiple pipelines even from the same operator, that transport tariff would increase.
- All of India's imported natural gas arrives at terminals on the west coast.
- So, the further east the buyers are located, the costs increases.

What is the proposed move?

- The government is aiming to cut down the cost of transportation of natural gas by fixing a tariff for longer distances to boost consumption.
- It is proposing a unified price system with,
 1. One price for those transporting gas nearby within 300 km and
 2. One price for those transporting gas beyond 300km.
- This proposal is part of an effort to boost the share of natural gas in India's energy basket from 6% currently to 25% by 2030.
- The move would fix tariff prices within an integrated pipeline network such as that of GAIL (Gas Authority of India Ltd.)
- GAIL has India's largest gas transportation pipeline network that prevents the buyers to pay charges for the use of multiple pipelines.
- Such a move would help connect new markets.
- It would benefit consumers in parts of the country far from the western coast.

How would the costs be?

- The cost of gas transportation for oil marketing companies and fertiliser plants that are closer to the points of gas injection may go up.
- This is because the government lowers rates for transportation of gas to areas farther away from points of supply.
- GAIL would hope that the average tariff per unit of gas transported will not be very different from current tariffs.
- GAIL would hope for increased utilisation as demand for gas increases.
- The government is also expecting that as India boosts gas imports, it will be able to negotiate better prices on gas imports.

10. AGRICULTURE

10.1 Monsoon: A Boon

Why in news?

India is having a good run with the monsoon, which is good news for farmers and the economy.

What would happen generally?

- June is the month during which the monsoon sets in.
- June is also when the monsoon begins its journey from two extremities of the country.
- One branch starts its journey northwards from Kerala and the other branch enters India from the southeast.
- Both branches eventually converge in the north.
- Usually, this merging of the monsoon currents over the mainland takes at least until July 15.

What happened this year?

- The India Meteorological Department (IMD) data reveals that rainfall during the season has been 14% more than what is usual for this period.
- The month of June only accounts for about 17% of the monsoon rainfall spanning June-September.

What are the two significant factors?

- The first factor was that the monsoon set in at a textbook date of June 1.
- Another factor was the record pace at which the monsoon covered the whole country.
- According to IMD, the monsoon would cover India's northern and western borders no later than July 8.
- This year, however, the monsoon broke even this speed limit and covered the country by June 25.

What is the net result of all this?

- The net result is that there were **more rainy days in June**.
- A **fairly even distribution** across the country was also observed.
- Rainfall in east, south and central India posted surpluses of 13%-20%
- Only in northwest India, the rainfall is staring at a 3% deficit.
- While good rains in June signal farmers to prepare the soil and sow kharif crop, the most important months are July and August.
- These two months account for two-thirds of the monsoon rain.
- This is also the time the monsoon goes into so-called 'break' conditions.
- Prolonged breaks, or an absence of rainfall, can even lead to drought.

What is needed?

- In spite of the technological advancements, meteorological agencies cannot reliably forecast the advent of a break or how long it can last.
- Therefore, short and medium range forecasts need to be strengthened and effectively communicated to the people.

10.2 Farm Trade Ordinance & Punjab's Opposition

Why in news?

Punjab is opposing the Centre's Farmers' Produce Trade and Commerce (Promotion and Facilitation) Ordinance.

Why Punjab is opposing the Ordinance?

- This Ordinance may end the state's Agriculture Produce Market Committee (APMC) Act, which was amended in 2017.

- This Ordinance is opposed on the pretext that it will privatise the entire sale/purchase system and will end the MSP regime.

What is the difference?

- As per the state's APMC Act, only a licence holder from the government after meeting the provisions laid under this Act can do trade.
- As per the Centre's ordinance, no licences are required and any PAN cardholder can do trade.

Where can trade be done?

- As per the state's APMC Act, trade will be allowed in both,
 1. State-owned mandis under Punjab Mandi Board (PMB) and
 2. Private mandis allowed under the amended Act.
- In private mandis, trade is allowed in the government-notified yards.
- The PMB charges a fee/cess that is used for the development of the mandis and the rural areas.
- As per the Centre's ordinance, trade can be done at any place.
- Also, farmers can sell their product anywhere in the country.

What type of private market committees can be set up under the state Act?

- Apart from the mandis under PMB across the state, there is a provision of setting up of private market yards demarcated by the government.
- These mandis can be owned by the private players.
- The owners of these private yards and their relatives cannot trade but only operate these mandis.
- The government will have full control over these mandi.
- Taxes and other duties decided by the government will be levied on the sale and purchase of farmers' produce.
- Centre' ordinance, however, has no such provision.

What if there is a high fluctuation of prices?

- As per state Act, there is a provision of setting up of 'Price Stabilisation Fund' by the government.
- This fund can be utilised to facilitate farmers in case of high fluctuation of the crop prices.
- There is no such provision under the Ordinance.

What about the market fee/cess charged by the PMB?

- The state APMC Act says that cess/fee would be levied on sale/purchase in the notified private market yards.
- There is no such provision in the Ordinance.

What are the provisions regarding payment to farmers?

- The State APMC makes the provision that farmers will be paid for selling their products **within 48 hours**.
- The sale/purchase is regulated by the government because only licence holders can do trade in such mandis.
- If the trader fails to pay the farmer on time, the matter can be resolved by presenting the case to PMB's Market Committee or to the Secretary, Agriculture.
- The concerned Deputy Commissioner (DC) also has the power to sell any property of the trader to pay the dues of farmers.
- Finally, the matter can also reach the court for settlement.
- As per the Centre's ordinance, the farmers will be paid either on the **same day or within 3 working days**.
- If a trader does not pay, the matter can be resolved by presenting their respective case to SDM or DC.
- There is no provision for taking the matter to court.

What is the status of e-trading?

- As per the state Act, only licence holding dealer can do e-trading.
- As per the ordinance, any PAN cardholder can do it without any fee.

How big companies can enter the trade of crops, food processing?

- The state government had introduced a Unified Licence System, so that big food processing companies to take steps in the interest of farmers.
- As per the ordinance, there is no need for a licence for big companies.
- Farmers are specifically against this provision.

What would happen to the MSP regime?

- After the APMC Act was amended, the MSP regime continued in the state as such.
- Even now, major agricultural products are brought only in the PMB owned markets where farmers sell on fixed MSP.
- It seems like the provisions of the ordinance may end the MSP regime.

10.3 GM Cotton Controversy

What is the issue?

- India's cotton growers are keen to buy illegal herbicide-tolerant Bt (HTBT) cottonseed varieties at black market rates.
- The organised seed industry and the anti-GM groups are dismayed by it.

What is the reality?

- The moratorium imposed in 2009 on approval of all GM crops remains.
- But, the ground realities with respect to cotton cultivation have undergone a significant change.

What is there a demand for HTBT seeds?

- The demand for the unapproved HTBT cottonseeds has arisen.
- This rise is because India's dominant BT strain (BG-II) is falling prey to pink bollworm pest attacks in recent years.
- [BG-II - Accounts for most of India's cotton acreage.]
- Cotton farmers have been faced with falling yields, while dealing with constant or rising costs.
- The HTBT cotton plant is resistant to the usage of glyphosate-based weedicides, a popular labour-saving product.
- This weedicide has been allowed for use in very restricted conditions in India for its alleged carcinogenic effects.

What is the fear?

- According to the organised seed industry, illegal trade in HTBT seeds is of ₹ 300 crore, with 50 lakh packets of 450g each in circulation.
- They fear it has been used over 15-20% of cotton area.
- This is a straightforward case of market forces rising to meet a genuine demand.

What are the implications?

- The implications of unregulated seed trade are indeed serious.
- This is because the **farmers** in search of high yields may suffer a dead loss if the expensive seeds (selling at over the maximum rates fixed by the Centre) are spurious.
- Bonafide **seed distributors** and **producers** suffer as well.

- The **farmers' groups** have stepped up protests seeking HTBT approval, allowing for reduced costs and quality control.

What are the actions of the Centre?

- The Centre has said that glyphosate-based weedicides must be applied in the presence of a pest control operator.
- This is an effort taken to curb the use of HTBT seeds.
- However, the sowing season is close to completion.
- Meanwhile, the use of glyphosate in India has increased since 2016-17.
- The Centre must take a clear position on the HTBT issue (GM-based seed technology).

What could be done?

- India should have a credible regulator to assess these issues on a case-by-case basis, involving all stakeholders.
- India's initiatives on this count should be driven by public-funded research.
- The development of indigenous varieties and strains must be given more emphasis, given our gene pool in seeds.
- A pragmatic response to GM is long overdue, with a distinction being made between food and non-food crops.

11. DISASTER MANAGEMENT

11.1 Central Bed Bureau - Emergency Health Response

What is the issue?

- The Government invoked the Disaster Management Act (2005) and the Epidemic Diseases Act (1897) to handle the COVID-19 pandemic.
- But the difficulties that patients are facing in hospitals in emergency situations demand more systematic response in place.

What was the Health Ministry's claim?

- In a briefing on 12 April 2020, the health ministry assured that India was over-prepared with regard to the pandemic.
- This was in terms of testing, training and hospitalisation.
- It was stated back then that if India needed 1,671 beds for COVID-19 patients, there were over 1 lakh 5 thousand beds available.

What is the ground reality?

- The ministry's figure looked impressive but on the ground, the beds were scattered.
- Beds were not located as per the hospitals' requirement at a given point in time.
- At some place, there was no coordination and collaboration among hospitals in a geographical region.
- So, the problem of shortage of beds got acutely exacerbated.
- It became unmanageable even with a slight increase in the number of patients.
- A hospital that is full may deny admission, whereas beds may be available in another hospital.
- But for a patient, it is too burdensome to locate hospitals with vacant beds.
- This has caused tremendous hardship to many patients, resulting in delayed treatment and even deaths.
- Notably, Neelam, who was 8-months pregnant, was refused admission by 8 hospitals in 12 hours, and died in an ambulance in Noida.

What were the courts' remarks?

- The high courts and the Supreme Court took note of the people's difficulties in accessing medical care.
- They have passed scornful remarks on the governments' handling of the situation.
- The Court reminded the custodians of public health services that they are duty-bound to provide care.

What was the government response?

- The government, aware of its inadequacies, tried to rope in private hospitals.
- It tried to cover as much ground as possible from testing to hospital beds for serious COVID patients.
- But these were delayed corrective measures, more than 4 months after the first COVID case.
- This reflects misjudgement of an evolving, calamitous pandemic.

What were the SC guidelines in an earlier case?

- In 1992, Hakim Seikh, a farm labourer, fell from a train at Mathurapur station in West Bengal, and sustained a head injury.
- After first-aid in a primary health centre, for further treatment, he was denied admission due to lack of bed in 4 government medical colleges, and 2 private hospitals.
- In this regard, in 1996, the Supreme Court ruled that denial of emergency treatment is a violation of the right to life guaranteed under Article 21 of the Constitution.
- Considering the range of implications, the SC observed that other states, though not parties, must take necessary steps in light of the directions passed.
- The order laid out comprehensive guidelines for proper documentation and protocols for referral/transfer of patients.
- If a patient is too sick to be transferred, he/she is to be kept on a trolley and even on the floor till she/he can be accommodated.
- To ease the pressure for emergency beds, the SC recommended that a Central Bed Bureau should be set up.

How does a Central Bed Bureau work?

- A particular hospital may not be able to admit an emergency patient due to physical limitations.
- In such cases, the hospital concerned should contact immediately the Central Bed Bureau.
- The Bureau will communicate with other hospitals.
- It will then decide in which hospital an emergency moribund/serious patient is to be admitted.
- In this way, it facilitates accommodating patients when there is shortage of space and other resources.
- The Central Bed Bureau should be equipped with wireless or other communication facilities.
- The SC recommendations were not taken seriously and followed anywhere in India in the last 27 years.

11.2 Neyveli Boiler Blast - Safety Protocols

What is the issue?

- Six workers were killed and 17 injured after a boiler exploded in Unit V of the thermal power station-II of the NLC India Ltd. (NLCIL) in Neyveli, Tamil Nadu.
- This is the second accident at the power station in less than 2 months; it calls for looking into the overall safety protocols.

What happened?

- The power station has seven units of 210 MW each, totalling 1,470 MW.
- On 7 May 2020, a boiler explosion occurred in Unit VI.
- This killed five persons, including two permanent staff members.
- In the recent incident (July 1, 2020), Unit V was shut down after it got tripped the previous night.

- The workers and engineering staff were attempting to revive it.
- It was then that a fire broke out in the boiler, resulting in the explosion.
- Six people were killed and a dozen workers suffered severe burns.
- Power generation in the unit was stalled after the accident.
- All other units in the station and other thermal power plants worked as usual.

What are the other such incidents elsewhere?

- A day before the boiler blast, 2 persons died and 4 were taken ill after a gas leak at Vizag pharma company.
- Those affected inhaled benzimidazole vapours.
- It happened at the Sainor Life Sciences Private Limited at JN Pharma City in Parawada, a suburb of Visakhapatnam.
- The gas leak at the LG Polymers factory in the Visakhapatnam area in May 2020 is well known.

Why is the Neyveli incident so worrying?

- The boiler blast is inexplicable, as the power producer had encountered a boiler explosion only on May 7, 2020.
- Following that, NLC had ordered a review of its infrastructure and processes.
- Without meticulous care, boilers are dangerous pieces of equipment.
- High-pressure and superheated steam make for a lethal combination at the event of an explosion.
- Keeping the release mechanism in good order is absolutely crucial.
- Also, occupational safety demands that boilers are operated by trained personnel.
- But some of those on the ground have been described as contract employees.

What is the larger concern?

- Given the safety threat, boilers are regulated strictly under the Indian Boilers Act, at least on paper.
- The terrible consequences of lax boiler safety were evident 3 years ago in Rae Bareli.
- Back then, a blast at an NTPC power plant killed a few dozen people.
- But States have clearly not internalised a culture of zero tolerance to boiler accidents.
- In the Neyveli incident, it is said that the boiler was not in operation as it had tripped.
- Notably, the major operations of this equipment involve a furnace and production of steam.
- So, what led to an unexpected blowout should be inquired into.
- The gas leak at Vizag pharma company raises questions on maintenance and operational procedures.
- How vapours of a stable but acutely toxic chemical escaped should be looked into.
- It should be ensured that there is an upgrade to safety protocols.

NLC India Limited (NLCIL)

- NLCIL was formerly the Neyveli Lignite Corporation Limited.
- It is a 'Navratna' company of the Government of India in the fossil fuel mining sector in India and thermal power generation.
- It annually produces about 30 million tonne lignite from opencast mines at Neyveli in the state of Tamil Nadu and at Barsingsar in Bikaner district of Rajasthan state.
- The lignite is used at pithead thermal power stations to produce electricity.
- Lately, it has diversified into renewable energy production.
- It has installed 1404 MW solar power plant to produce electricity from photovoltaic (PV) cells and 51 MW electricity from windmills.
- It was incorporated in 1956, and it is under the administrative control of Ministry of Coal.

12. SCIENCE & TECHNOLOGY

12.1 Covid-19 Vaccine

Why in news?

The Indian Council of Medical Research (ICMR) wants the Covid-19 vaccine to be ready for public use way sooner.

What is the vaccine?

- ‘Covaxin’ is the indigenous Covid-19 vaccine developed by Hyderabad-based Bharat Biotech.
- It was developed from a strain of SARS-CoV-2 isolated at the National Institute of Virology.

How this decision is viewed?

- The agency’s head wrote a letter to the doctors preparing to test the indigenous vaccine for human trials.
- This appeared to be pressurizing the doctors into getting a vaccine ready by August 15, 2020.
- After a **public uproar**, the agency clarified that, its intent was to infuse a sense of urgency given the pandemic.
- It also clarified that there were no plans to deviate from the rulebook on vaccine development.

What are the steps in vaccine approval?

- The basic philosophy of all vaccines involves **introducing the weakened form of the virus** into healthy volunteers.
- Therefore, the first checkpoint is that the vaccine candidate should not sicken a healthy person.
- Next hurdle is that a vaccine must **stimulate the immune system** just enough to get it to produce protective antibodies.
- Finally, only if all were to go well, it must be tested on many people in real world conditions.
- Over time, they must be shown over to be better protected than those who were unvaccinated.
- Each one of these steps cannot be rushed.
- Each step is necessary to ensure that the vaccine can be released for public use.

What is the conclusion?

- Bharat Biotech has experience and credibility in vaccine manufacture.
- However, Covaxin is one of hundreds of potential vaccines being tested.
- Experts’ consensus is that no vaccine could be readied for public use until next year.
- It is perplexing why the ICMR would want to cut corners with a basic premise of research that: Science does not progress in a hurry.
- The best strategy is to maintain **absolutet transparency**, and proceed surely, even if slowly.

12.2 Serological Survey in Delhi - Herd Immunity

What is the issue?

- A recent serological survey in Delhi found the presence of coronavirus-specific antibodies in about 23% of the samples tested.
- Here is a look on the purpose of the survey and the link with “herd immunity.”

What is a serological survey?

- The serological survey is meant to detect whether the person being tested had developed antibodies against a virus/bacterium.
- The antibodies are proteins produced by the immune system to fight external organisms like viruses that try to enter the body.

- These are produced only after the infection has happened.
- So, these are specific to the attacking virus or bacterium.
- The presence of antibodies, therefore, is an indication that an infection by that particular virus or bacterium has already occurred.
- Subsequent attempts to infect the body can be thwarted by these antibodies.
- **Vaccine principle** - Vaccines work in a similar manner.
- They inject harmless doses of a virus or a bacterium inside the human body.
- This triggers the production of antibodies by the immune system.
- These antibodies can then fight off an actual attack by those viruses or bacteria.

What is the purpose in Covid-19 case?

- Information about the extent of spread is very important for authorities to make decisions and plan containment measures.
- But in the context of the Covid-19 pandemic, it is not possible to test everyone.
- It is not clear how many people in the population are infected.
- This is especially because most of the patients do not show any symptoms of the disease.
- So, the serological survey was carried out to assess how widespread Covid-19 could have become.
- Detecting antibodies in random sets of people is an indirect way of estimating the extent of disease spread in a community.

What were the results?

- The survey found coronavirus-specific antibodies in about 23% of the roughly 21,000 people who were tested.
- This means that these many people had, at some point or the other, been infected.
- Since random people were tested, it indicated that the spread of the disease was much wider than what diagnostic tests suggest.
- [In Delhi, about 14% of those who have been tested for the virus have turned out positive.]
- The results are being interpreted to suggest that about 46 lakh people in Delhi could so far have been infected, and that “herd immunity” could be approaching.

What is the need for caution?

- Serological surveys are quite useful for the limited purpose of assessing the spread of infection.
- However, scientists caution against drawing such broad conclusions (as herd immunity).
- **Antibodies and Immunity** - The mere presence of antibodies does not mean that the person is protected against the disease.
- The amount of antibodies present, and whether it includes what are known as “neutralising antibodies” are also important.
- These are the ones that actually fight the disease.
- Serological surveys are not designed to assess either the quantity of antibodies or detect the presence of neutralising antibodies.
- Also, studies have indicated that the “neutralising antibodies” could lose their effect after 4 months.
- **Herd immunity** - Clearly, the presence of antibodies and protection against the disease are very different questions.
- So, any talk of “herd immunity” at this stage is not only premature but also misplaced.
- The coronavirus is still evolving and can undergo several mutations.
- Given this too, it is too early to talk about permanent protection.

What then is herd immunity?

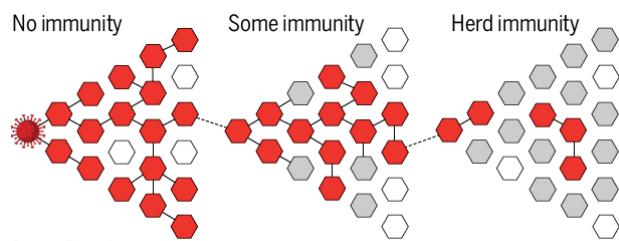
- Herd immunity is a stage of an epidemic in which some members of a population group remain protected from infection.
- This comes as a result of a majority of those around them having already developed immunity, either through vaccination or because they have been infected earlier.
- So, everyone in the population group does not need to get infected before the epidemic is over.
- Once a certain proportion of population gets infected, and thus builds immunity, the epidemic begins to slow down and eventually stop.

What is the challenge here though?

- **Proportion** - The problem is that no one clearly knows what percentage of the population needs to be infected before herd immunity kicks in.
- It is different for different diseases, and different population groups.
- In general, herd immunity is unlikely to happen before at least half the population is infected.
- E.g. in the case of measles, herd immunity is reached only when 85% to 90% of the population attains immunity.
- In some other diseases, the threshold could be lower.
- For Covid-19, different studies have suggested that between 55-70% of the population would need to be infected before herd immunity would develop.
- But it is extremely difficult to determine the level of disease spread necessary for herd immunity when the epidemic is still raging.
- **Understanding** - Herd immunity is mentioned in very loose terms these days.
- This concept can be applied in very specific situations only.
- For example, herd immunity would apply only in closed population groups, those that are cut off from neighbouring societies.
- Thus, talk of herd immunity in Delhi is pointless if there is a free movement of people in and out of the city.
- Every parameter in this calculation is dynamic and evolving; so only after the epidemic is over, it is possible to reliably estimate at what point herd immunity took over.

The journey to herd immunity

1. A novel pathogen is introduced to a community. Because it's new, no one has immunity and it begins to spread.
2. Those who recover and those who receive a vaccine (if there is one) develop immunity, at least for a period of time. With the coronavirus, it's not known how long. So far, there is no proven vaccine.
3. Herd immunity takes hold when the pathogen can't find new hosts and stops spreading. That happens once a sufficient portion of the community is immune. For this virus, estimates range from 55% to 82%.



12.3 Origin of Carbon

Why in news?

A study on 'white dwarfs' has provided new insights on the origins of the carbon in the Milky Way galaxy.

What are white dwarfs?

- White dwarfs are the dense remnants of a star after its death, whose nuclear energy supplies have been used up.
- They consist of degenerate matter with a very high density due to gravitational effects.

What is the importance of carbon?

- Carbon is essential for life.
- It is the simple building block of all the complex organic molecules that organisms need.
- It is known that all the carbon in the Milky Way came from dying stars that ejected the element into their surroundings.

- However, there is a debate on what kind of stars made the major contribution.

How does carbon come from stars?

- Most stars, except the most massive ones, turn into white dwarfs.
- When the massive ones die, they go with a spectacular bang known as the supernova.
- Both low mass and massive stars eject their ashes into the surroundings before they end their lives.
- These ashes contain different chemical elements, including carbon.

How carbon is released?

- In both the type of stars, carbon is synthesised in its deep and hot interiors through the triple-alpha reaction.
- [Triple-alpha reaction = Fusion of three helium nuclei]
- **In low-mass stars**, the newly synthesised carbon is transported to the surface from the interiors via gigantic bubbles of gas.
- From the surface, the carbon is injected into the cosmos through stellar winds.
- **Massive stars** enrich the interstellar medium with carbon before the supernova explosion, when they also experience powerful stellar winds.

What did the study find?

- In 2018, the researchers analysed a few white dwarfs belonging to open star clusters of the Milky Way.
- They measured the masses of the white dwarfs, derived their masses at birth, and from there calculated the “initial-final mass relation”.
- [Initial-final mass relation is a key astrophysical measure that integrates information of the entire life cycles of stars.]
- They found that the more **massive the star** at birth, the more **massive the white dwarf** left at its death.
- So far, stars born roughly 1.5 billion of years ago in our galaxy were thought to have produced white dwarfs about 60-65% the mass of Sun.
- Instead, they were found to have died leaving behind more massive compact remnants, about 70-75% solar masses.

What explains this?

- The stripping of carbon-rich outer mantle of these stars occurred slowly.
- This is slow enough to allow the central cores of these stars, the future white dwarfs, to grow considerably in mass.
- By analysing the initial-final mass relation, the size range for the stars that contributed carbon to the Milky Way was concluded.
- Stars more massive than 2 solar masses contributed to the galactic enrichment of carbon.
- Stars less massive than 1.65 solar masses did not spread its carbon-rich ashes upon death.
- Having fixed the minimum initial mass for the production of carbon in low-mass stars is great, since it helps putting the pieces together.

PRELIM BITS

13. HISTORY AND ART & CULTURE

Adichanallur Excavations

- Adichanallur is an archaeological site in Thoothukudi district in Tamil Nadu.
- It is known as the ‘Cradle of ancient Tamil civilization’.
- Korkai, the capital of the Early Pandyan Kingdom, is located about 15 km from Adichanallur.
- Carbon dating of samples excavated in 2004 from this site has revealed that they belonged to the period between 1000 BC and 600 BC.
- Recently a maiden excavation at important site was initiated after the last excavation done in 2015.
- Sivakalai near Eral, in Adichanallur is one of the important sites.
- Recent Developments - More than 35 burial urns have been retrieved from the site.
- Small pots had been placed around these urns, which could be a custom followed by the ancient Tamils.

Mongolian Kanjur

- The Ministry of Culture has taken up the project of reprinting 108 volumes of Mongolian Kanjur by March 2022 under the National Mission for Manuscripts (NMM).
- It is a Buddhist canonical text in 108 volumes and is considered to be the most important religious text in Mongolia.
- It is a source of providing a cultural identity to Mongolia.
- In the Mongolian language ‘Kanjur’ means ‘Concise Orders’- the words of Lord Buddha in particular.
- It has been translated from Tibetan and is written in classical Mongolian.
- The publication of Mongolian Kanjur by the Government of India for the Government of Mongolia will act as a symbol of cultural harmony.

National Mission for Manuscripts

- The National Mission for Manuscripts (NMM) was launched in 2003, under the Ministry of Culture.
- It aims to document, conserve and disseminate the knowledge preserved in the manuscripts.
- One of the objectives of the mission is to publish rare and unpublished manuscripts so that the knowledge enshrined in them is spread to researchers, scholars and the general public at large.
- A manuscript is a handwritten composition on paper, bark, cloth, metal, palm leaf or any other material dating back at least 75 years that has significant scientific, historical or aesthetic value.
- Manuscripts are distinct from historical records such as epigraphs on rocks, revenue records which provide direct information on events or processes in history.

Bon Bibi

- Bon Bibi is a deity of the Sunderban forest, West Bengal.
- The followers of Bon Bibi are fishermen, crab-collectors and honey-gatherers who live in the mangroves with wild animals such as tigers and crocodiles to earn a livelihood.
- They believe that only Bon Bibi protects them when they enter the forest and survive in tiger dominated areas.
- People express their belief in Bon Bibi through Bon Bibir Palagaan, it is a centuries-old folk theatre and dramatic storytelling form that is enacted throughout the island.
- Traditionally, the performances are held near Bon Bibi temples or villages bordering the forests.

Joykali Matar Temple

- India inaugurated the reconstructed Joykali Matar temple at Natore in Bangladesh.
- It was built approximately 300 years back in the early 18th century by Shri Dayaram Roy.
- He was an influential Dewan of Queen Bhahani of Natore and the founder of Dighapatia Royal Family.
- The MoU for the reconstruction of the temple at Lalbazar, Natore was signed between India and Bangladesh in 2016.
- The Government of India provided a grant assistance for the reconstruction of the historic temple under its High Impact Community Development Project (HICDP) scheme.

14. GEOGRAPHY

Study on Regional Climatic Features

- Indian Institute of Geomagnetism (IIG) has tracked climate change by following the Paleomonsoonal pattern of the subcontinent by harnessing magnetic mineralogy.
- The magnetic minerals are sensitive to the physical and chemical environment that they are embedded in.
- These external changes bring about modifications in the innate structure of these magnetic minerals, transitioning them from one magnetic phase to another.
- In this process, the magnetic mineralogy also changes. For example, from magnetite to hematite and vice versa.
- The mineral magnetic studies have unraveled 4 regional climatic features encompassing the entire Indian subcontinent and one localized climatic event, they are as follows
- Higher monsoon precipitation in the western part of India was shown to be analogous with glacial melt in the Himalayas.
- The weakening of monsoon was inferred in the Himalayas and the hinterland of Arabian Sea, analogically cold and dry conditions were prevalent at Dhakuri (Uttarakhand), which led to the formation of loess deposits.
- The monsoon intensification is deciphered in the western and eastern part of India with major implications in the hinterlands of the Arabian Sea and Bay of Bengal.
- Holocene aridity and weakened monsoon was inferred to be prevalent across the subcontinent (Holocene is the current geological epoch).
- The localized feature of Younger Dryas cooling seems to be confined to just the upper reaches of the Himalaya, Younger Dryas is a period of rapid cooling in the late Pleistocene.

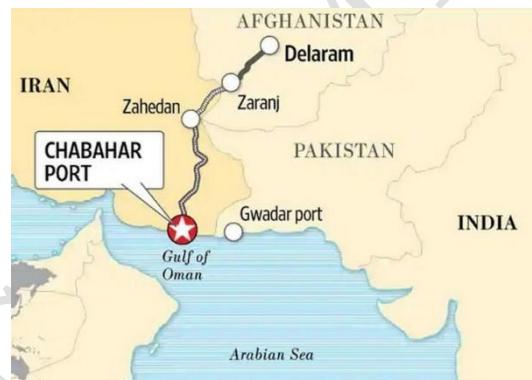
Tuting-Tidding Suture Zone

- In major part of the Eastern Himalaya, the Himalaya takes a sharp southward bend and connects with the Indo-Burma Range.
- Tuting-Tidding Suture Zone (TTSZ) of the Arunachal Himalaya has gained significant importance in recent times due to the growing need of constructing roads and hydropower projects, making the need for understanding the pattern of seismicity in this region critical.
- Recent study in the TTSZ, Arunachal Pradesh, has revealed that the area is generating moderate earthquakes at two different depths.
- The study aims to explore the elastic properties of rocks and seismicity in this easternmost part of India.
- The findings of the study are
- Low magnitude earthquakes are concentrated at 1-15 km depth, and slightly higher than 4.0 magnitude earthquakes are mostly generated from 25-35 km depth.
- The intermediate-depth is devoid of seismicity and coincides with the zone of fluid/partial melts.

- Exhumation and growth of Himalaya is a continuous process, which is because rocks on the lower surface of a fault plane move under relatively static rocks on the upper surface, a process called under thrusting of the Indian plate beneath its Eurasian counterpart.
- This process keeps modifying the drainage patterns and landforms and is the pivotal reason for causing an immense seismic hazard in the Himalayan mountain belt and adjoining regions.

Chabahar-Zahedan Railway Line

- In 2016 India and Iran signed an agreement to construct a 628 km rail line from Chabahar port to Zahedan, along the border (Zaranj) with Afghanistan.
- The railway project was being discussed between the Iranian Railways and the state-owned Indian Railways Construction Ltd (IRCON).
- It is a part trilateral agreement between India, Iran and Afghanistan to build an alternate trade route to Afghanistan and Central Asia.
- Recently, Iran has decided to proceed with the construction on its own, citing delays from the Indian side in funding and starting the project.
- The entire project would be completed by March 2022, and that Iranian Railways will proceed without India's assistance.
- Iran will be using approximately \$400 million from the Iranian National Development Fund.
- The development comes as China finalizes a massive 25-year, \$400 billion strategic partnership deal with Iran.



Container Ship to Agartala

- Union Ministry of Shipping inaugurated the first trial movement of a container ship carrying steel and pulses from Kolkata port to Bangladesh's Chattogram port.
- It will transport cargo to Assam and Tripura.
- It will provide a shorter route to connect India's north-east region through Bangladesh.
- This is the first time after 1965 that Bangladesh is allowing its ports to be used as a transit for cargo movement from any part of India to northeastern states.
- It is done under the Agreement on use of Chattogram and Mongla Ports for movement of India's transit cargo through Bangladesh.
- India and Bangladesh have enhanced cooperation in shipping and inland water trade, under the Protocol on Inland Water Transit and Trade, in addition to the six existing Ports of Call.

Kakrapar Atomic Power Plant

- Kakrapar Atomic Power Plant is the country's first 700 MWe (megawatt electric) unit, located in Gujarat.
- It is the biggest indigenously developed variant of the Pressurized Heavy Water Reactor (PHWR).
- The operationalization of India's first 700MWe reactor marks a significant scale-up in technology.
- It has recently achieved its criticality, which is a landmark event in India's domestic civilian nuclear programme.
- It is significant in terms of optimization of its PHWR design.
- It addresses the issue of excess thermal margins and an improvement in the economies of scale, without significant changes to the design of the 540 MWe reactor.
- 'Thermal margin' refers to the extent to which the operating temperature of the reactor is below its maximum operating temperature.

- The 700MWe capacity would constitute the biggest component of the expansion plan of India to ramp up its existing nuclear power capacity of 6,780 MWe to 22,480 MWe by 2031.
- **Criticality** - The normal operating condition of a reactor, in which nuclear fuel sustains a fission chain reaction.
- A reactor achieves criticality when each fission event releases a sufficient number of neutrons to sustain an ongoing series of reactions.

Kutch Mainland Fault

- The Kutch Mainland Fault (KMF) is the major east-west trending fault.
- The fault line extends for over 150 km from Lakhpat to Bhachau.
- It has been dormant for the last 1,000-odd years
- The fragile crust of Kutch holds four major active faults which frequently liberate energy in the form of earthquakes.
- The devastating January 26, 2001 earthquake had occurred from the South Wagad fault system.
- According to recent study Kutch Mainland Fault (KMF), has been accumulating stress within and could trigger an earthquake.
- The study also gives evidence that there were four major earthquakes on KMF between 5600 and 1000 Before Present.
- Before Present is a time scale used by geologists to define events that happened before the origin of radiocarbon dating technology in the 1950s.

India's Wind Power Project

- Sembcorp Energy India Limited (SEIL) is a wholly-owned subsidiary of Sembcorp Industries.
- Recently, it announced the completion of the latest 800MW wind power projects, bringing India its renewable energy capacity to 1730 MW.
- Power from these projects to light up more than 600,000 homes and reduce carbon dioxide emissions by over 2 million tonnes/annum
- Sembcorp becomes the first independent power producer to fully commission its projects awarded in the first three wind auctions held by the Solar Energy Corporation of India (SECI).
- This capacity is also the largest operational wind capacity with any developer to-date from SECI auction.

Rewa Solar Project

- Recently, 750 MW (Mega Watt) solar project set up in Rewa, Madhya Pradesh has been inaugurated.
- It is Asia's largest solar power project, with total area 1500 hectare.
- It was developed by the Madhya Pradesh Urja Vikas Nigam Limited (MPUVN), and Solar Energy Corporation of India (SECI), a Central Public Sector Undertaking.
- It is the first solar project in the country to break the grid parity barrier.
- Grid parity occurs when an alternative energy source can generate power at a cost of electricity that is less than or equal to the price of power from the electricity grid.
- It is the first renewable energy project to supply an institutional customer outside the state, i.e. Delhi Metro.
- It is also India's first solar project to get funding from Clean Technology Fund (CTF), which is available at a rate of 0.25% for a 40-year period from the World Bank.
- It has also received the World Bank Group President's Award for innovation and excellence.

Finding on Fish landings

- According to Central Marine Fisheries Research Institute (CMFRI) India's marine fish production has registered a marginal increase of 2.1% in 2019 compared to the previous year.
- Tamil Nadu took the first position in landings of fishes with 7.75 lakh tones.
- It was followed by Gujarat (7.49 lakh tones) and Kerala (5.44 lakh tones).
- While States such as West Bengal (55%), Andhra Pradesh (34%), Odisha (14.5%), Karnataka (11%) and Tamil Nadu (10.4%) recorded increase in landings, the fish catch decreased in Maharashtra, Goa and Kerala compared to the previous year.

15. POLITY

Uniformity in Stamp Duties

- The amendments to the Stamp Act, 1899 was introduced in the Finance Bill, 2019.
- It has introduced the centralized system of stamp duty with a unified rate for all financial securities transactions with effective from July 1.
- Union government has created the legal and institutional mechanism to enable states to collect stamp duty on securities market instruments at one place by one agency, through the stock exchange or clearing corporation authorized by it or by the depository on one instrument.
- At present, market participants collect stamp duty at rates fixed by the state where the trade takes place and deposit it with the local government.
- This created a complex system with multiple tax rates and differing regulations in different states, posing a challenge to settle deals.
- The amendment was brought for ease of doing business and bringing in uniformity of the stamp duty on securities across states thereby building a pan-India securities market.

Aids to Navigation Bill

- A navigational aid is any kind of marker which aids the traveler in navigation, usually nautical or aviation travel.
- Common types of such aids include lighthouses, buoys, fog signals, and day beacons.
- Recently, the Ministry of Shipping has issued the draft of the Aids to Navigation Bill, 2020.
- It is proposed to replace the nine decades old colonial Lighthouse Act, 1927.
- It aims to regulate state-of-the-art technologies of marine navigation.
- It also provides for identification and development of heritage lighthouses.
- The draft also proposes cess for every ship arriving at or departing from any port in India, at rates notified by the Central government.

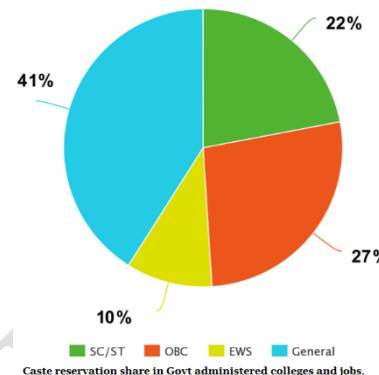
Kris Gopala Krishnan Committee

- A government committee headed by Infosys co-founder Kris Gopala Krishnan has suggested that non-personal data generated in the country be allowed to be harnessed by various domestic companies and entities
- Non-personal data is any set of data which does not contain personally identifiable information.
- This in essence means that no individual or living person can be identified by looking at such data.
- Unlike personal data, which contains explicit information about a person's name, age, gender, sexual orientation, biometrics and other genetic details, non-personal data is more likely to be in an anonymized form.

- The committee has also suggested setting up of a new authority which would be empowered to monitor the use and mining of such non-personal data.

Constitutional provisions on reservations

- Article 15 (4) empowers the State to make special provision for the advancement of the SCs and the STs.
- E.g. providing fee concession in admission to any educational institution, building hostels for SCs/STs.
- Article 15 (5) empowers the State to reserve seats for SCs and the STs in admission to educational institutions including private educational institutions, whether aided or unaided by the State.
- However, it excludes minority educational institutions referred to in Article 30 (1).
- Article 16 (4) empowers the State to make provisions for the reservation of appointments or posts in favor of SCs/STs.
- Article 46 - Empower the state to promote educational and economic interests of the weaker sections of the people, and, in particular SC & ST and shall protect them from social injustice and all forms of exploitation.



Anti Defection Law

- Through the 52nd Constitutional Amendment Act of 1985, the 10th Schedule of the Constitution, which contains the anti-defection law, was added to the Constitution.
- Under this "If any question arises as to whether a member of a House has become subject to disqualification under this Schedule, the question shall be referred for the decision of the Chairman or, as the case may be, the Speaker of such House and his decision shall be final."
- There are two grounds on which a member of a legislature can be disqualified.
- If the member voluntarily gives up the membership of the party: Voluntarily giving up the membership is not the same as resigning from a party.
- Even without resigning, a legislator can be disqualified if by his conduct the Speaker/Chairman of the concerned House draws a reasonable inference that the member has voluntarily given up the membership of his party.
- If a legislator votes in the House against the direction of his party and his action is not condoned by his party, he can be disqualified.

Kihoto Hollohan Judgment

- The petitioners in Hollohan Case, 1992) argued whether it was fair that the Speaker should have such broad powers provided by the 10th schedule and 52nd Amendment, given that there is always a reasonable likelihood of bias.
- The majority judgment said the Speakers/Chairmen hold a pivotal position in the scheme of Parliamentary democracy and are guardians of the rights and privileges of the House.
- They are expected to and do take far reaching decisions in Parliamentary democracy.
- Thus Constitutional courts cannot judicially review disqualification proceedings under the Tenth Schedule (anti-defection law) of the Constitution until the Speaker or Chairman makes a final decision on merits.

Postal Ballot System

- Under Postal Ballot system, ballot papers are distributed electronically to electors and are returned to the election officers via post.
- Recently, Union Law Ministry has reduced the age limit for senior citizens who opt for postal ballot in the Lok Sabha and Assembly elections.

- By this voters aged above 65 years or a Covid-19 suspect can opt for postal ballot.
- Recently, Election Commission said that option of postal ballots for electors above the age of 65 in the Bihar Assembly elections cannot be implemented due to logistic issues.
- Earlier, in 2019, the Law Ministry had amended the Conduct of Election Rules to allow persons with disabilities and those who are 80 years of age or above to opt for postal ballot during Lok Sabha and Assembly elections.
- Currently, only the following voters are allowed to cast their votes through postal ballot:
 1. Service voters (armed forces, the armed police force of a state and government servants posted abroad),
 2. Voters on election duty,
 3. Voters above 80 years of age or Persons with Disabilities (PwD),
 4. Voters under preventive detention.
- The exception to the above-mentioned category of voters is provided under Section 60 of the Representation of the People Act, 1951.

Transgender Persons (Protection of Rights) Act

- Union government has released draft rules framed under the Transgender Persons (Protection of Rights) Act, 2019.
- In the draft it has done away with the requirement of a medical examination for Trans persons applying for a certificate of identity.
- By which Magistrate would issue a transgender identity certificate and card based on an affidavit by the applicant, “but without any medical examination”.
- Trans- persons 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 change of gender, the application for new identification certificate would require a certificate from the medical superintendent or chief medical officer of the medical institution where the applicant underwent the intervention.

Discretionary powers of Governor

- A Constitution Bench judgment of the SC has held that a Governor is bound to convene a meeting of the Assembly for a floor test on the recommendation of the Cabinet.
- In Nabam Rebia Vs Deputy Speaker 2016 case, SC held that a Governor cannot employ his ‘discretion’, and should strictly abide by the “aid and advice” of the Cabinet to summon the House.
- **Highlights of the judgement**
 - a) The Governor can summon, prorogue and dissolve the House only on the aid and advice of the Council of Ministers with the Chief Minister as the head. And not at his own.
 - b) Governor’s discretionary powers are limited to specified areas like giving assent or withholding/referring a Bill to the President or appointment of a Chief Minister or dismissal of a government which has lost of confidence but refuses to quit, etc.
 - c) The area for the exercise of his discretion is limited, even in this limited area, Governor’s choice of action should not be arbitrary or fanciful.

Article 163

- The article explains about discretionary powers of governor, under which it states the following
- If any question arises the decision of the Governor in his discretion shall be final, and the validity of anything done by the Governor shall not be called in question on the ground that he ought or ought not to have acted in his discretion.
- The question whether any, and if so what, advice was tendered by Ministers to the Governor shall not be inquired into in any court.
- Thus Article 163 of the Constitution does not give the Governor a “general discretionary power to act against or without the advice of his Council of Ministers”.

- d) It must be a choice dictated by reason, actuated by good faith and tempered by caution.

Sample Registration System

- The SRS is a demographic survey for providing reliable annual estimates of infant mortality rate, birth rate, death rate and other fertility and mortality indicators at the national and sub-national levels.
- Initiated on a pilot basis by the Registrar General of India in a few states in 1964-65, it became fully operational during 1969-70.
- The field investigation consists of a continuous enumeration of births and deaths in selected sample units by Resident part-time enumerators, generally Anganwadi workers and teachers.
- An independent retrospective survey every six months by SRS supervisors.
- The data obtained by these two independent functionaries are matched.

16. GOVERNMENT INITIATIVES

Accelerate Vigyan

- Recently, the Science and Engineering Research Board (SERB), has launched a scheme called Accelerate Vigyan (AV) to strengthen scientific research mechanisms in the country.
- It aims to expand the research base, with three broad goals i.e.
- Consolidation/aggregation of all scientific programs,
- Initiating high-end orientation workshops,
- Creating opportunities for research internships.
- An Inter-Ministerial Overseeing Committee (IMOC) involving all the scientific ministries/departments has been constituted for the purpose of supporting SERB in implementing the AV scheme.
- **ABHYAAS Programme** - It is an attempt to boost research and development by enabling and grooming potential PG/PhD students by means of developing their research skills in selected areas across different disciplines or fields.
- It has two components - High-End Workshops i.e. **KARYASHALA** and Research Internships i.e. **VRITIKA**.
- **SAYONJIKA** is an open-ended program to catalogue the capacity building activities in science and technology supported by all government funding agencies in the country.
- **SANGOSHTI** is a pre-existing program of SERB for the organization of workshops.

NATGRID

- It is the integrated intelligence grid connecting databases of core security agencies of the Government of India.
- It functions under Ministry of Home Affairs.
- It was proposed as a counter-terrorism measure after the terrorist attacks on Mumbai in 2008.
- It is a medium for at least 10 Central agencies such as the Intelligence Bureau and the Research and Analysis Wing to access data on a secured platform.
- The data will be procured by NATGRID from 21 organizations such as the telecom, tax records, bank, immigration etc.
- Recently, NATGRID has signed a MoU with the National Crime Records Bureau (NCRB) to access the centralized online database on FIRs and stolen vehicles.
- The MoU will give NATGRID access to the Crime and Criminal Tracking Network and Systems (CCTNS) database, a platform that links around 14,000 police stations.
- All State police are mandated to file FIRs in the CCTNS.

MSME Emergency Response Programme

- World Bank and the Government of India signed an agreement for the MSME Emergency Response Programme.
- It involves \$750 million loan from the International Bank for Reconstruction and Development (IBRD).
- The loan has a maturity of 19 years including a 5-year grace period.
- The programme aims to support increased flow of finance into the hands of MSMEs severely impacted by the COVID-19 crisis.
- It 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.
- It will address the immediate liquidity and credit needs of some 1.5 million viable MSMEs to help them withstand the impact and protect millions of jobs.

PM-SVANidhi Portal

- Ministry of Housing & Urban Affairs has launched “PM SVANidhi” Portal.
- The portal will provide an integrated end to end IT interface to users for availing benefits under the scheme.
- It is being developed by SIDBI, which is the scheme implementation partner for PM SVANidhi.
- It will accept loan applications from Street Vendors, who can apply directly or with the help of Common Service Centers/ Urban Local Bodies/ Self Help Groups.
- The portal will enable the implementation of the scheme during next 21 months.

Fish Cryobanks

- Ministry of Fisheries, Animal Husbandry and Dairying in association with the National Fisheries Development Board (NFDB) has announced establishment of fish Cryobanks.
- The Cryomilt technology may be helpful in the establishment of fish cryobanks, which will provide good quality of fish sperm in hatcheries at any time.
- The proposed Fish Cryobanks will be established across the country at different phases.
- This would be the first time in the world when Fish Cryobanks will be established, enhancing fish production and increasing prosperity among the fish farmers.

MoES-Knowledge Resource Centre Network

- Ministry of Earth Sciences (MoES) aims to develop a World-Class Knowledge Resource Centre Network (KRCNet).
- Under it, the traditional libraries of the MoES system will be upgraded into a top-notch Knowledge Resource Centres (KRC).
- KRCs will be connected with each other and integrated into the KRCNet portal.

National Bio Pharma Mission

- It is an Industry-Academia Collaborative Mission of Department of Biotechnology (DBT).
- It aims for accelerating discovery research to early development for Biopharmaceuticals approved by the Cabinet for a total cost US\$ 250 million.
- It is 50% co-funded by the World Bank is being implemented at Biotechnology Research Assistance Council (BIRAC).
- This program is dedicated to deliver affordable products to the nation with an aim to improve the health standards of India's population.
- Vaccines, medical devices and diagnostics and bio therapeutics are few of its most important domains, besides, strengthening the clinical trial capacity and building technology transfer capabilities in the country.

Buddhist Tourism Initiatives

- Union Ministry of Tourism & Culture has inaugurated the Webinar on “Cross Border Tourism” organized by the Association of Buddhist Tour Operators.
- Various initiatives taken on Buddhist Tourism are as follows

 1. Signage in international languages - at important Buddhist sites in the country including signage in Chinese language that have been put up at Sarnath, Kushinagar and Sravasti.
 2. Similarly, since Sanchi receives a large number of tourists from Sri Lanka, signage in Sinhalese language have been put up at the Sanchi monuments.
 3. Kushinagar Airport - Government of India to declared the Kushinagar Airport in Uttar Pradesh as an International Airport which will offer better connectivity to the air-travelers.

- The Association of Buddhist Tour Operators is the association of dedicated inbound tour-operators engaged in promoting Buddhist tourism, with over 1500 members in India & Overseas

Manodarpan Initiative

- Union Human Resource and Development Ministry virtually launched the Manodarpan initiative under Atma Nirbhar Bharat Abhiyan.
- This initiative will provide psycho-social support to students, teachers and parents.
- It aims to address the issues related to mental health and emotional wellbeing.
- The components of the initiative are
 1. Web page on the MHRD website for advisory on psychosocial support.
 2. Voluntary Tele-Counselling service on the National Helpline by utilizing National level database and directory of counsellors.
 3. Handbook on Psychosocial Support - Enriching Life skills & Wellbeing of Students to be published online.
 4. Interactive Online Chat Platform for contact, counselling and guidance by psychologists and other mental health professionals

RAISE Initiative

- Retrofit of Air-conditioning to improve Indoor Air Quality for Safety and Efficiency (RAISE) is a national programme to improve indoor air quality.
- It is launched by Energy Efficiency Services Limited (EESL), under the administration of Ministry of Power.
- It is developed for healthy and energy efficient buildings, in partnership with US Agency for International Development’s (USAID) MAITREE programme.
- The pilot focuses on improving indoor air quality (IAQ), thermal comfort, and energy efficiency (EE) in EESL office’s air conditioning system.
- It can potentially alleviate the issue of bad air quality in workspaces across the nation.

Vriksharopan Abhiyan

- “Vriksharopan Abhiyan” is a campaign orgainsed by the Ministry of Coal.
- It is a part of going green Initiative of Ministry of Coal.
- Under this initiative, large scale plantation will be carried out in colonies, offices, and mines and in other suitable areas of coal and Ignite PSUs.
- Seedlings will also be distributed under the campaign in the nearby areas for promoting plantation by society.
- It invloves all coal and lignite PSUs.
- Under this initiative six eco-parks were inaugurated by Home Ministry, it will provide avenues for the adventure, water sport, recreation, bird watching, etc.

- Going Green initiative involves maximization of green cover through ecological reclamation of the mined-out areas and overburden dumps, avenue plantation at suitable places, and plantation in and around the mines.

INDSAT Exam

- Union Ministry of HRD conducted the first ever Indian Scholastic Assessment (Ind-SAT) Test 2020 under its 'Study in India' programme.
- It was announced in 2020-21 budget.
- Ind-SAT is an exam for grant of scholarships and admissions to foreign students for studying in select Indian universities.
- The scores will serve as a criterion to shortlist the meritorious students for undergraduate and post-graduate scholarships.
- EdCIL (India) Limited, a PSU under MHRD and the implementing agency of SII handled the registrations and other aspects of the examination.
- Under Study in India is a programme of MHRD, foreign students come to study in 116 select higher education institutions in India for under graduate and post graduate programmes.

Aatmanirbhar Skilled Employee Employer Mapping

- Ministry of Skill Development and Entrepreneurship launches AI-based ASEEM digital platform to bridge demand-supply gap of skilled workforce across sectors.
- The portal and App will have provision for registration and data upload for workers across job roles, sectors and geographies.
- ASEEM will be used as a match-making engine to map skilled workers with the jobs available.
- The skilled workforce can register their profiles on the app and can search for employment opportunities in their neighborhood.
- ASEEM portal aims at supporting decision and policymaking via trends and analytics generated by the system for programmatic purposes.

SWADES Skill Card

- Union Government has launched a skill-mapping exercise of the citizens returning to the country under the Vande Bharat Mission.
- SWADES (Skilled Workers Arrival Database for Employment Support), is the joint initiative by
 1. Ministries of skill development & entrepreneurship,
 2. Ministry of civil aviation
 3. Ministry of external affairs
- It aims to create a database of qualified citizens so as to tap their skill sets and experience to fulfill the demands of Indian and foreign companies.
- The returning citizens are required to fill up an online SWADES Skills Card that will facilitate a strategic framework to provide them with suitable employment chances.

Zoram Food Park

- Recently, Ministry of food processing industries has operationalized the first Mega Food Park (MFP) of Mizoram.
- The Zoram Mega Food Park has been set up under the 'Mega Food Park Scheme'.
- It will boost the North-East Region's potential to become the organic destination of the world due to its rich agricultural and horticultural produce.
- A Mega food Park typically consists of supply chain infrastructure including Collection centers (CC), Primary processing centers (PPC), Central processing centers (CPC) and Cold chain

- The Scheme is based on the “Cluster” approach and envisages creation of state of art support infrastructure in a well-defined Agri/horticultural zone.
- The central government provides financial assistance up to Rs. 50 Crore per Mega Food Park (MFP) project.
- The MFP project is implemented by a Special Purpose Vehicle (SPV) which is a Body Corporate registered under the Companies Act, 2013.

Agriculture Infrastructure Fund

- Union Cabinet has given approval to Agriculture Infrastructure Fund.
- It is a pan India central sector scheme.
- It aims to inject formal credit into farm and farm-processing based activities.
- It is a part of the over Rs. 20 lakh crore stimulus package announced in response to the Covid-19 crisis.
- It will provide medium - long term debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets.
- The funds will be provided for setting up of cold stores and chains, warehousing, silos, assaying, grading and packaging units, e-marketing points linked to e-trading platforms and ripening chambers, besides PPP projects for crop aggregation sponsored by central/state/local bodies.
- Duration of the scheme is FY 2020 to 2029.

17. GOVERNMENT SCHEMES

Namami Gange

- Namami Gange Programme is an Integrated Conservation Mission, approved as a ‘Flagship Programme’ by the Union Government in June 2014.
- It is to accomplish the twin objectives of effective abatement of pollution and conservation and rejuvenation of National River Ganga.
- It is being operated under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti.
- The program is being implemented by the National Mission for Clean Ganga (NMCG).
- The state counterpart organizations are State Program Management Groups (SPMGs).
- NMCG is the implementation wing of National Ganga Council (set in 2016, which replaced the National Ganga River Basin Authority (NRGBA)).
- It has a Rs. 20,000-crore, centrally-funded, non-lapsable corpus and consists of nearly 288 projects.
- Recently, the World Bank has approved a five year loan (for the second phase) to the National Mission for Clean Ganga (NMCG) or Namami Gange Project worth Rs.3,000 crore to help stem pollution in the Ganga river basin.

PMGKY-Ujjwala

- Union government had announced a relief package “Pradhan Mantri Garib Kalyan Yojana” aimed at providing a safety net to the poor and vulnerable who had been hit the hardest by the pandemic.
- The package also included relief for poor families who had availed of an LPG connection under PMUY.
- Under the PMGKY-Ujjwala, it was decided to provide free of cost refills for PMUY consumers for a period of 3 months w.e.f. 01.04.2020.
- This will benefit those PMUY beneficiaries who have been credited with the advance for buying the cylinder, but have not been able to purchase the refill.

- Thus, the beneficiaries who already have the advance transferred to their account can now take the free refill delivery till 30th September.

Kumhar Sashaktikaran Yojana

- Kumbhar Sashaktikaran Program is an initiative of the Khadi and Village Industries Commission (KVIC).
- It aims for empowerment of potter community in the remotest of locations in the country.
- The program reaches out to the potters in U.P., M.P., Maharashtra, J&K, Haryana, Rajasthan, West Bengal, Assam, Gujarat, Tamil Nadu, Odisha, Telangana and Bihar.
- The average income of potters under the Kumhar Sashaktikaran Yojana has gone up from nearly Rs 3,000 per month to nearly Rs 12,000 per month.
- This program provides the following support to potters.
 1. Training for advanced pottery products
 2. Latest, new technology pottery equipment's like the electric Chaak
 3. Market linkages and visibility through KVIC exhibitions

Ex-Servicemen Contribution Health Scheme

- As of now unmarried permanently disabled and financially dependent sons of ECHS beneficiaries, after attaining the age of 25 years are not considered dependent.
- Recently, Central Government Health Scheme (CGHS) Rules has declared sons of CGHS beneficiaries who have become disabled even after attaining the age of 25 years, dependent are eligible for availing CGHS benefits.
- It has now been decided by the Ministry of Defence (MoD), Department of Ex-Servicemen Welfare (DESW) to similarly treat unmarried permanently disabled and financially dependent sons of ECHS beneficiaries.
- By this they will be eligible to get benefits of ECHS facilities even after attaining 25 years.

18. BILATERAL ISSUES

South Asia Group for Energy

- US Agency for International Development (USAID) and India's ministry of new and renewable energy (MNRE) have announced the launch of a new partnership - SAGE
- Under the partnership, USAID will provide advanced technical knowledge on clean energy development from America's national laboratories to India's technical institutions.
- It will act as a powerhouse of science, engineering and technology for India and the entire South Asia region.
- It will contribute towards achieving the goals of the US government's Asia Enhancing Growth and Development through Energy (Asia EDGE) initiative,
- EDGE is a primary pillar of the US administration's Indo-Pacific vision in South Asia, and the US-India Strategic Energy Partnership.

U.S. Agency for International Development

- USAID is the world's premier international development agency and a catalytic actor driving development results.
- The Market Integration and Transformation Program for Energy Efficiency (MAITREE), is a part of the US-India bilateral Partnership between the Ministry of Power and USAID
- It is aimed at accelerating the adoption of cost-effective energy

India-EU S&T Cooperation

- India and European Union (EU) have renewed its Agreement on Scientific and Technological Cooperation for the next five years (2020-2025).
- The Agreement was initially signed in 2001 and renewed two times in 2007 and 2015.
- The cooperation has been focused on water, green transport, e-mobility, clean energy, bio-economy, health, and ICT.
- The new agreement will expand the cooperation in scientific and technological research for economic and social benefit.
- In the last 5 years India-EU Research Technology Development Projects has addressed societal challenges such as affordable healthcare, water, energy, food & nutrition has been stepped up.

U.S.-India Strategic Energy Partnership

- It was established in 2018, recognizing the strategic importance of energy to the U.S.-India bilateral relationship.
- The SEP organizes inter-agency engagement on both sides across four primary pillars of cooperation
 1. Power and Energy Efficiency
 2. Oil and Gas
 3. Renewable Energy
 4. Sustainable Growth
- The two countries are also leading joint R&D through the U.S.-India Partnership to Advance Clean Energy-Research (PACE-R) on smart grids and energy storage.

Recent Initiatives of SEP

1. Strategic Petroleum Reserves - Recently a MOU has been signed which paves way for India storing oil in the U.S. Strategic Petroleum Reserve to increase their nation strategic oil stockpiles.
2. A public-private Hydrogen Task Force to help scale up technologies to produce hydrogen from renewable energy and fossil fuel sources.
3. An MoU has been signed to collaborate on India's first-ever Solar Decathlon India in 2021 to prepare the next generation of professionals to design and build high efficiency buildings powered by renewables.
4. USAID announced partnership with Power System Operation Corporation (POSOCO) to develop India's National Open Access Registry (NOAR).
5. New areas of research on transformational power generation based on supercritical CO₂ (sCO₂) power cycles and advanced coal technologies for power generation and hydrogen production, including carbon capture, utilization, and storage (CCUS).

Open Sky Agreements

- Open Sky Agreements are bilateral agreements that the two countries negotiate to provide rights for airlines to offer international passenger and cargo services.
- It expands international passenger and cargo flights.
- The National Civil Aviation Policy (2016) allows the government to enter into an 'open sky' air services agreement on a reciprocal basis with SAARC nations as well as countries beyond a 5,000 kilometre radius from New Delhi.
- It implies that nations within 5,000 kilometer of 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 Air Service Agreements (ASA) with 109 countries including UAE covering aspects relating to the number of flights, seats, landing points and code-share.
- But does not allow unlimited number of flights between two countries.

- Recently, the United Arab Emirates (UAE) has expressed interest to have an Open Sky Agreement with India.
- Open skies between India and UAE will allow unlimited number of flights to the selected cities of each other's countries.

Fifth and Sixth Freedom of Air

- The freedoms of the air are a set of commercial aviation rights granting a country's airlines the privilege to enter and land in another country's airspace.
- The Freedom of air was formulated in the Convention on International Civil Aviation of 1944, known as the Chicago Convention.
- The fifth freedom of air includes the right to fly between two foreign countries on a flight originating or ending in one's own country.
- The sixth freedom of air includes the right to fly from a foreign country to another while stopping in one's own country for non-technical reasons.

19. GOVERNMENT ORGANISATIONS

TIFAC

- Technology Information, Forecasting and Assessment Council was formed as a registered Society in February, 1988.
- It is an autonomous body under the Department of Science and Technology.
- It is mandated to assess the state-of-art of technology and set directions for future technological development in India in important socio-economic sectors.

India Energy Modelling Forum

- India Energy Modelling Forum (IEMF) was launched on July, 2020.
- It was established by the joint working group meeting of the Sustainable Growth Pillar.
- Sustainable Growth Pillar is an important pillar of India-US Strategic Energy Partnership co-chaired by NITI Aayog and USAID.
- The SG pillar entails energy data management, energy modelling and collaboration on low carbon technologies as three key activities.
- The forum would include knowledge partners, data agencies and concerned government ministries.
- NITI Aayog will initially coordinate the activities of the forum and finalizing its governing structure.

Solar Energy Corporation of India

- Solar Energy Corporation of India Ltd. (SECI) is a company of the Ministry of New and Renewable Energy.
- It is established to facilitate the implementation of the National Solar Mission (NSM).
- It is the only Central Public Sector Undertaking dedicated to the solar energy sector.
- The company's mandate has been broadened to cover the entire renewable energy domain and the company will be renamed to Renewable Energy Corporation of India (RECI).

20. INTERNATIONAL ORGANISATIONS

Energy Modelling Forum

- The Energy Modelling Forum (EMF) in USA was established in 1976 at Stanford University.

- It was to connect leading modelling experts and decision makers from government, industry, universities, and other research organizations.
- It provides an unbiased platform to discuss the contemporary issues revolving around energy and environment.
- efficiency as a standard practice within buildings, and specifically focuses on cooling.

ISIL (Da'esh) and Al-Qaida Sanctions Committee

- It was initially established in 1999, pursuant to UN Security Council Resolution 1267.
- The Committee comprises all 15 members of the Security Council and makes its decision by consensus.
- It oversees the sanctions measures imposed by the Security Council.
- It is one of three Security Council committees dealing with counter-terrorism.
- The other two committees are
 1. The Counter-Terrorism Committee established pursuant to Security Council Resolution 1373 (2001),
 2. The Security Council Committee established pursuant to Resolution 1540 (2004).

YuWaah

- UNICEF had launched Generation Unlimited India (YuWaah) in 2019.
- It is a multi-stakeholder alliance which aims to facilitate youth to gain relevant skills for productive lives and the future of work.
- The target age group includes adolescent girls and boys.
- Its key mission is to promote among youth foundational skills, life skills and flexible learning and identifying and scaling impactful delivery models.
- Union Ministry of Youth Affairs has recently signed a Statement of Intent with YuWaah.
- The partnership aims to promote volunteerism among the youth of India as well as to help them transition from education and learning to productive work, skilling and being active citizens.

Sub-Group on Traditional Medicine

- Union Minister of Health and Family Welfare digitally participated in the Shanghai Cooperation Organization (SCO) Health Minister's Digital Meet.
- There is currently no institutional mechanism within SCO to discuss cooperation in Traditional Medicine.
- Traditional Medicine has the potential to fulfil the WHO Traditional Medicine Strategy 2014-2023.
- India proposes to set up a Sub-Group on Traditional Medicine under the existing Institutional Meetings of the SCO Health Ministers.

USA's Withdrawal from WHO

- It is an UN agency responsible for global public health.
- It was founded in 1948 and based in Geneva, Switzerland.
- Funded by a combination of members' fees based on wealth and population and voluntary contributions.
- Recent developments - USA administration has formally notified the United Nations of its withdrawal from the World Health Organization.
- Although the pullout won't take effect until next year, meaning it could be rescinded under a new administration if circumstances change.
- Under the terms of the withdrawal, the U.S. must meet its financial obligations to the WHO before it can be finalized.

- The U.S., which is the agency's largest donor and provides it with more than \$400 million per year, currently owes the WHO some \$200 million in current and past dues.

21. ECONOMY

External Commercial Borrowings

- External commercial borrowing (ECBs) are loans made by non-resident lenders in foreign currency to Indian borrowers.
- They are used widely in India to facilitate access to foreign money by Indian corporations and PSUs (public sector undertakings).
- The debtors can be the government, corporations or citizens of that country.
- The debt includes money owed to private commercial banks, foreign governments, or international financial institutions such as IMF and World Bank.
- For telecom sector, infrastructure and Greenfield projects, funding up to 50% (through ECB) is allowed.
- Recently, RBI issued a guideline stating that all eligible borrowers can raise ECB up to USD 750 million or equivalent per financial year under the automatic route (earlier it was applicable only to corporate companies).
- The Department of Economic Affairs, Ministry of Finance, along with RBI, monitors and regulates ECB guidelines and policies.
- U.S. dollar-denominated debt remains largest component of the external debt.

Current Swap Agreement

- A currency swap between the two countries is an agreement or contract to exchange currencies with predetermined terms and conditions.
- Central banks and Governments engage in currency swaps with foreign counterparts
- To meet short term foreign exchange liquidity requirements
- To ensure adequate foreign currency to avoid Balance of Payments (BOP) crisis till longer arrangements can be made.
- 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.
- RBI has recently agreed to a \$400 million currency swap facility for Sri Lanka till November 2022.
- The RBI's action follows a recent bilateral 'technical discussion' on rescheduling Colombo's outstanding debt repayment to India.

Special Liquidity Scheme

- Special Liquidity Scheme of Rs. 30,000 crore for NBFCs and HFCs is being implemented w.e.f. 1st July, 2020.
- The Scheme has been launched to improve the liquidity position of NBFCs/HFCs through a Special Purpose Vehicle (SPV) to avoid any potential systemic risks to the financial sector.
- The Scheme is being implemented by SLS Trust, the SPV set up by SBI Capital Markets Limited (SBICAP).
- Eligibility -
- Any NBFC including Microfinance Institutions registered with RBI under the Reserve Bank of India Act, 1934 (excluding those registered as Core Investment Companies).
- Any HFC registered with the National Housing Bank (NHB) under the National Housing Bank Act, 1987 which is complying with certain specified conditions
- The Scheme will remain open for 3 months for making subscriptions by the Trust.

- It permits both primary and secondary market purchases of debt and seeks to address the short-term liquidity issues of NBFCs/HFCs.
- Therefore, those market participants who are looking to exit their standard investments with a residual maturity of 90 days may also approach the SLS Trust.

Investment Clearance Cell (ICC)

- Civil Aviation ministry has set up a single window clearance mechanism to expedite various investment proposals in the domestic aviation industry.
- Investment Clearance Cell (ICC) will be setup for prompt assistance and clearance.
- The setting up of the ICC was announced by finance ministry in the 2020-2021 union budget.
- The 10 member ICC will be headed by Amber Dubey, Joint Secretary in the Aviation Ministry.
- The ICC has been mandated to serve as a single window system for attracting investment and its terms of reference include accelerating investments, bringing projects to the Empowered Group of Secretaries (EGoS),

Extending EPF Contribution

- Union Cabinet has given its approval for extending the contribution both 12% employees' share and 12% employers' share under Employees Provident Fund from June to August, 2020.
- This measure is taken as a part of the package announced by the Government under Pradhan Mantri Garib Kalyan Yojana (PMGKY).
- The salient features of the proposal are as under:
- For the wage months of June, July and August, 2020, the scheme will cover all the establishments having up to 100 employees and 90% of such employees earning less than Rs. 15,000 monthly wage.
- About 72.22 lakh workers working in 3.67 lakh establishments will be benefited and would likely to continue on their payrolls despite disruptions.
- Government will provide Budgetary Support of Rs.4800 crore for the year 2020-21 for this purpose.
- The beneficiaries entitled for 12% employers' contribution for the months of June to August, 2020 under Pradhan Mantri Rozgar Protsahan Yojana (PMR PY) will be excluded to prevent overlapping benefit.

National Financial Reporting Authority (NFRA)

- It is an independent regulator to oversee the auditing profession and accounting standards in India.
- It was formed in 2018 under Companies Act 2013.
- It consists of one chairman, 3 full-time members and one secretary.
- It is responsible for transparency and reliability of financial statements and information presented by listed companies and large unlisted companies in India.
- **Recent Developments** – It has constituted a Technical Advisory Committee (TAC) under the Chairmanship of R Narayanaswamy, Professor IIM-Bangalore.
- The TAC comprises 7 members, including the Chairman.
- It would aid and advise the NFRA on issues related to the drafts of accounting standards and auditing standards.

New FDI Policy on Aviation

- Ministry of Finance has allowed Non Resident Indians (NRIs) to have 100% Foreign Direct Investment (FDI) in Air India.
- For the same, necessary amendments have been made in the Foreign Exchange Management Rules (Non-debt Instruments), 2019.
- The new FDI policy allows the following

- Removes the exception which permitted Overseas Citizens of India (OCI) 100% FDI in air transport, but not Air India.
- This category of citizens has been replaced with NRIs, now allowed to commit 100% FDI in air transport, including Air India, through automatic route.
- The Reserve Bank of India (RBI) has been vested with the sole power to issue/interpret the rules regarding 100% FDI of NRIs.
- Previously, it was required to do so in consultation with the Central Government.
- In March 2020, Union cabinet approved a policy to permit foreign investment up to 100% by those NRIs who are Indian Nationals in Air India through the automatic route.
- Earlier Foreign investments in Air India Limited, including that of foreign airlines shall not exceed 49% either directly or indirectly except in case of those NRIs, who are Indian nationals.

Routes of FDI

- FDI is an investment made by a firm or individual in one country into business interests located in another country.
- **Automatic Route** - In this, the foreign entity does not require the prior approval of the government or the RBI.
- **Government route** - In this, the foreign entity has to take the approval of the government.
- **Method of clearance** - Foreign Investment Facilitation Portal (FIFP) facilitates the single window clearance of applications which are through approval route.
- This portal is administered by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

22. ENVIRONMENT

All India Tiger Estimation

- All India Tiger Estimation 2018 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.
- According to the report of 2018, India now has an estimated 2967 tigers out of which 2461 individual tigers have been photo captured, about 83 % of the tiger population.
- With this number, India is home to nearly 75% of the global tiger population.
- India has already fulfilled its resolve of doubling tiger numbers, made at St. Petersburg in 2010, much before the target year of 2022.
- The All India Tiger Estimation done every four year once, It is
 1. Steered by the National Tiger Conservation Authority
 2. Technically supported by Wildlife Institute of India
 3. Implemented by State Forest Departments and partners.

Status of Tigers in India Report

- Ministry of Environment, Forest and Climate Change has released a detailed 'Status of Tigers, Co-predators and Prey in India (2018) Report' on the eve of the Global Tiger Day (29th July).
- The report compares information obtained from the earlier three tiger surveys (2006, 2010, and 2014) with data obtained from the 2018-19 survey to estimate tiger population trends at country level.
- India's Project Tiger was launched in 1973 with 9 tiger reserves.

- India has 70% of the world's tiger population, it is tirelessly working with all 13 tiger range countries towards nurturing the tiger.

Highlights of the report

- The national tiger status assessment of 2018-19 estimated the overall tiger population in India at 2,967 - 33% increase from 2014 (2,226).
- Tigers were observed to be increasing at a rate of 6% per annum in India from 2006 to 2018.
- Uttarakhand's Corbett Tiger Reserve (CTR) has reported the highest tiger density among India's 50 reserves with 14 tigers per 100 sq km, followed by Kaziranga, Nagarhole and Orang tiger reserves.
- Madhya Pradesh has the highest number of tigers at 526, closely followed by Karnataka (524) and Uttarakhand (442).
- The Northeast has suffered losses in population.
- Further, the tiger status in Chhattisgarh, Jharkhand and Odisha has steadily declined, which is a matter of concern.
- With 2,967 tigers, India is four years in advance, has achieved the target set in the 2010 St Petersburg Declaration of doubling tiger population by 2022.

Snakebite Mortality in India

- Centre for Global Health Research (CGHR), Canada has recently released a study titled 'Snakebite Mortality in India: A Nationally Representative Mortality Survey'.
- The study found that India has recorded 1.2 million snakebite deaths in the 20-year period from 2000 to 2019 with an average of 58,000 deaths caused by snakebite annually.
- Around 70% of these deaths occurred in low altitude, rural areas of eight States namely Uttar Pradesh, Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Odisha, Telangana, Rajasthan and Gujarat.
- Half of all the snakebite deaths occurred during the monsoon period from June to September.
- The World Health Organization (WHO) recognizes snakebite as a top-priority neglected tropical disease.
- Indian anti-venoms neutralize venom from only the following snakes such as
 1. Spectacled Cobra (there are three other Indian cobra species),
 2. Common Krait (there are seven other krait species),
 3. Russell's Viper,
 4. Saw-scaled viper,
- Whereas there are 12 other snake species causing fatal bites in the country.

Climatic Investment Fund

- The Climate Investment Funds (CIFs) are implemented by the Multilateral Development Banks (MDBs) to bridge the financing and learning gap between international climate change agreements.
- They were designed by developed and developing countries.
- The World Bank is the Trustee of the CIFs.
- It include a "sunset clause" to ensure that the Fund's activities do not prejudice the outcome on the UNFCCC negotiations.
- CIFs are two distinct funds
 1. Clean Technology Fund
 2. Strategic Climate Fund.
- The CTF promotes scaled-up financing for demonstration, deployment and transfer of low carbon technologies with a significant potential for long-term greenhouse gas emissions savings.

Assessment of Climate Change Report

- The first ‘Assessment of Climate Change over Indian Region’ was recently released by the Union Ministry of Earth Sciences.
- Key projections of the report are as follows
 1. The coming decades are projected to witness a considerable rise in the mean, extreme and inter-annual variability of rainfall associated with monsoon.
 2. Flood risks are higher over the east coast, West Bengal, eastern Uttar Pradesh, Gujarat, Konkan and cities like Mumbai, Chennai and Kolkata.
 3. The Himalayan flood basins are projected to greater floods, due to the faster glacial and snow melting.
 4. Storms in the Arabian Sea are gaining more strength and the trend is projected to continue.
 5. 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.
 6. 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.

Forest Fires in India

- According to the report of the Forest Survey of India, between 2003–2017, a total of 5,20,861 active forest fire events were detected in India.
- About 54% of the forest cover in India is exposed to occasional fire.
- Most fire prone regions - Northeast India, Madhya Pradesh, Odisha, Chhattisgarh, Himachal Pradesh and Uttarakhand.
- Western Himalaya have shown a sharp increase of carbon monoxide, nitrogen oxides and ozone during high fire activity periods.
- The occurrence of high fire intensity at the low altitude Himalayan hilly regions may be due to the plant species (pine trees) in the area and proximity to villages.
- Villages make them more susceptible to anthropogenic activities like forest cover clearance, grazing and so on.
- The sharp increase in average and maximum air temperature, decline in precipitation, and change in land-use patterns have caused the increased episodes of forest fires in most of the Asian countries.

Burn Indices

- The Normalized Burn Ratio is an effective burn index commonly used to identify burnt regions in large fire zones.
- In normal conditions, healthy vegetation exhibits a very high reflectance in the near-infrared spectral region and considerably low reflectance in the shortwave infrared spectral region.
- These conditions get dismantled and reversed if a fire occurs.
- **Remote Sensing Burn Indices** - The spectral differences between healthy vegetation and burnt forest areas can easily be identified and highlighted by remote sensing burn indices.
- Remote sensing based models to measure primary productivity over an area and also looked at burn indices, which help to demarcate the forest fire burn scars using satellite imagery.
- It can be a promising tool for land resource managers and fire officials.

Bhagirathi Eco-Sensitive Zone

- Bhagirathi is the source stream of Ganga, It emanates from Gangotri glacier at Gaumukh at an elevation of 3,892 m.
- Bhagirathi Eco Sensitive Zone extends from Gaumukh to Uttarkashi covering an area of 4179.59 sq. kilometer.

- The Bhagirathi Eco-Sensitive Zone notification was issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC) in 2012.
- The notification was subsequently amended on 16th April, 2018 in consultation with the
 1. Ministry of Road, Transport and Highways.
 2. Government of Uttarakhand
 3. Indian Road Congress.
- The Bhagirathi Eco-Sensitive Zone notification mandated the State Government of Uttarakhand to prepare Zonal Master Plan (ZMP) to be implemented under the supervision of the Monitoring Committee.
- The ZMP is based on watershed approach and includes governance in the area of forest and wildlife, watershed management, irrigation, energy, tourism, public health and sanitation, road infrastructure, etc.
- It aims to safe guard local people without affecting their rights and privileges and also ensuring eco-friendly development for their livelihood security.
- Recently MoEF&CC has approved ZMP of Bhagirathi Eco-Sensitive Zone.

United Nations Global Commission on Adaptation

- The Global Commission on Adaptation was launched in Hague in 2018 by then UN Secretary General Ban Ki-moon.
- Its mandate is to encourage the development of measures to manage the effects of climate change through technology, planning and investment.
- Secretary General Ban Ki-moon leads the group with co-chair of the Bill & Melinda Gates Foundation, and World Bank CEO.
- It was launched with the support of 17 convening countries including China, Canada and the UK and low-lying countries vulnerable to climate change including Bangladesh and the Marshall Islands.
- The Netherlands initiated the Global Commission on Adaptation to share its knowledge on how it has managed to adopt innovative water management solutions as sea levels rise.
- UNGCA Publishes Global Call for Leadership on Climate Resilience.
- It will be released in Climate Adaptation Summit in the Netherlands in 2021.

Conservation Assured | Tiger Standards [CA|TS]

- CA|TS is a conservation tool developed in 2013, in collaboration with field managers, tiger experts and government agencies engaged in tiger conservation.
- It sets best practice and standards to manage target species, and encourages assessments to benchmark progress.
- Tigers are the first species selected for the initiative.
- CA|TS is being adopted for use beyond tigers, including potentially jaguars, lions and freshwater dolphins.
- CA|TS is a partnership of tiger range governments, inter-governmental agencies, institutions, NGOs and conservation organizations.
- WWF is helping tiger range countries to implement CA|TS.
- National Tiger Conservation Authority (NTCA) announced the adoption of the across all of the country's 50 Tiger Reserves.
- These 50 Tiger Reserves are spread across 18 states containing over 70% of the world's tiger population.
- By this India becomes first among the 13 tiger range countries to nationally adopt CA|TS.
- This brings India's total number of registered sites to 94 (which includes sites outside the Tiger Reserves).
- This announcement further strengthens India's contribution to the global goal set in 2010 to double the number tigers in the wild, known as TX2

E-Waste

- E-Waste is short for Electronic-Waste and the term used to describe old, end-of-life or discarded electronic appliances.
- It is categorized into 21 types under two broad categories:
 1. Information technology and communication equipment.
 2. Consumer electrical and electronics.
 3. E-waste includes their components, consumables, parts and spares.
- It consists of toxic elements such as Lead, Mercury, Cadmium, Chromium, Polybrominated biphenyls and Polybrominated diphenyl.
- E-waste consisting of gold, silver, copper, platinum and other high-value, recoverable materials was mostly dumped or burned rather than being collected for treatment and reuse.
- It can cause some of the major health effects including serious illnesses such as lung cancer, respiratory problems, bronchitis, brain damages, etc. due to inhalation of toxic fumes, exposure to heavy metals and alike.
- It is an environmental hazard causing groundwater pollution, acidification of soil and contamination of groundwater and air pollution due to the burning of plastic and other remnants.
- **Recent Developments** - According to a recent United Nations University (UNU) report, global e-waste will increase by 38% in the decade between 2020 and 2030.
- Asia generated the greatest volume (around 24.9 MT) followed by the Americas (13.1 MT) and Europe (12 MT). Africa and Oceania generated 2.9 MT and 0.7 MT respectively.
- UNU is a global think tank and postgraduate teaching organization headquartered in Japan.
- UNU's mission is to resolve the pressing global problems of human survival, development and welfare that are the concern of the United Nations, its peoples and the member states.

Disaster Management Fund

- Recently Ministry of Home Affairs has applied an unused provision in the Disaster Management Act, 2005.
- It aims to allow any person or institution to contribute to the National Disaster Response Fund (NDRF) for the purpose of disaster management.
- The Ministry of Home Affairs (MHA) had invoked the Disaster Management Act, 2005 for the first time in March this year in wake of COVID-19.
- The pandemic was notified as a “disaster,” paving the way for the States to utilize the State Disaster Response Fund (SDRF) for treatment of patients and other logistics such as quarantine centers, setting up laboratories among other things.
- The other notified disasters are cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.
- As per Section 46 of the DM Act, the “NDRF supplements the State Disaster Response Fund (SDRF) in case of a disaster of severe nature, provided adequate funds are not available in the SDRF.
- The States have to submit utilization certificates, pending which no future allocation is made.
- The SDRF is the primary fund available with State governments to meet the expenses of relief operations of an immediate nature, for a range of specified disasters.
- The Centre contributes 75% of the SDRF allocation for general category States and Union Territories,
- 90% for special category States (northeast States, Sikkim, Uttarakhand, Himachal Pradesh, and Jammu & Kashmir).

SPECIES IN NEWS

Relationship between Silver line Butterfly and Cocktail Ants

- A recent study using X-ray MicroCT technology describes the association between caterpillars of the Lilac Silverline Apharitis lilacinus butterfly and cocktail ants.
- The intriguing caterpillar-ant associations have been a subject of study for decades resulting in the understanding of their evolution and ecology.
- Butterflies of the family Lycaenidae, popularly known as Blues and Hairstreaks, have gone in a completely unexpected direction to deal with their predators and do not avoid predatory ants at all.
- Over millions of years of evolution, this butterfly group has evolved a range of adaptations that have tamed their ferocious ant predators into protectors and providers.
- Not only do ants not eat these caterpillars and pupae, they actually care for them and aggressively protect them from other predators and parasitoids, thus creating an enemy-free space for the butterfly's early stages.
- Caterpillars are completely dependent on the ants after hatching from eggs, and they are constantly attended by their hosts.
- The caterpillars live inside the ant nests, often among the ant broods, and are cared for by the tending ants just like the rest of their brood.

New Butterfly Species in India

- Recently, lepidopterists have discovered the 2 new species of butterfly i.e. Striped Hairstreak and Elusive Prince in Changlang district of Arunachal Pradesh.

1. Striped Hairstreak - Yamamotozephyrus kwangtugensis

- It is found in Vijaynagar village of Changlang district of Arunachal Pradesh, bordering Myanmar.
- It was a subject of interest for the lepidopterists as its genus is diversified into several genera (i.e. subdivisions) and thus, difficult to trace.
- It was first recorded in Hainan province of China, it is also found in North America, from the Rocky Mountains

2. Elusive Prince - Rohana tonkiniana

- It is found in Miao subdivision situated on the periphery of the Namdapha National Park.
- In India only a male specimen of the Elusive Prince was found.
- Initially it was considered as a variant of the Black Prince, but the study revealed that it is different and not recorded in India before.
- It was first recorded in Tonkin in north Vietnam.
- These discoveries from Arunachal Pradesh indicate the rich biodiversity of the State.



Tetrastemma Freyae

- Recently, researchers have identified a new species of marine invertebrate i.e. 'Tetrastemma Freyae', found along the coast of Tamil Nadu.
- It feeds on dead and decaying material and helps to recycle nutrients in coastal and deep water sediments.
- It is associated with sediments and is predatory as it has a role in maintaining the food chain.
- It uses its proboscis, similar to a butterfly which does to collect nectar.
- It has neurotoxins in its proboscis which could lead to developing drugs.



Ophiocordyceps Nutans

- Recently, researchers have found Ophiocordyceps nutans (fungi) for the first time in central India, at the Kanger Valley National Park in Bastar, Chhattisgarh.
- Earlier, these have been reported in India only from the Western Ghats.
- Ophiocordyceps nutans host on a specific insect, Halyomorpha halys.
- Halyomorpha halys is commonly known as the stink bug and is a pest to forest trees and agricultural crops.
- The stink bug is known to damage the flower and fruits of soybean, green beans, apple, pear, etc.
- Studies have shown that these fungi can be used as a biological pest control agent against the stink bugs.
- Exploring these fungi as a pesticide will help reduce the harmful effect of chemicals in fields.
- In the Western Ghats, the local people use these fungi as an immune stimulator.
- Scientists claim that it contains a component called ‘cordycepin’ which has anti-cancer properties.

KAZI 106F

- ‘Kazi 106F’, described as the country’s only Golden Tiger.
- It resides in world heritage Kaziranga National Park of Assam.
- It is also known as ‘Tabby tiger’ or ‘Strawberry tiger’.
- The skin of tigers is orange-yellow with black stripes and whitish abdominal region.
- The yellowish background is controlled by a set of ‘agouti genes’ and their alleles and the black colour stripes are controlled by ‘tabby genes’ and their alleles.
- Suppression of any of these genes may lead to colour variation in tiger.
- Agouti genes interacts with the pigment cells to produce yellow to red or brown to black expression.
- This interaction is responsible for making distinct light and dark bands in the hairs of animals such as the agouti here same is happening in our tigress - Kazi 106 F.

Blue poppy

- Blue poppy, Meconopsis aculeate, is considered the Queen of Himalayan Flowers.
- It is found from Kumaon to Kashmir at elevations of 3,000 to 5,000 meters.
- High alpine rock screes, small, loose stones, rock fragments and lateral periglacial moraines seem to be the core occupancy zone of the species.
- However, a recent comparative study of abundance of the species in alpine moraines at different elevations indicated that it is slowly depleting at lower altitudes and rocky moraines.
- Not only the Blue Poppy but several other flowering plants, found at very high altitudes, are facing the “climb higher or die” situation due to climate change.

Kashmir saffron

- Kashmir Saffron has been given the Geographical Indication (GI) tag by the Geographical Indications Registry.
- It is the only saffron in the world grown at an altitude of 1,600 m to 1,800 m AMSL (above mean sea level).
- This feature adds to its uniqueness and differentiates it from other saffron varieties available the world over.
- It is cultivated and harvested in the Karewa (highlands) of Jammu and Kashmir.
- Kashmir saffron rejuvenates health and is used in cosmetics and for medicinal purposes.
- Its cultivation is believed to have been introduced in Kashmir by Central Asian immigrants around 1st Century BCE.

- In ancient Sanskrit literature, saffron is referred to as ‘bahukam’.
- The GI certification will acquire more prominence in the export market and also stop adulteration prevalent in the trade of Kashmir saffron.

Eulophia obtusa

- After 100 years a rare orchid species *Eulophia obtusa* also known as ground orchid has been rediscovered from Dudhwa Tiger Reserve.
- In India the species is listed as “critically endangered” in the IUCN Red List of endangered species.
- The species was originally described from Uttarakhand in the 19th century, it was last recorded in Pilibhit in 1902.
- Later in 2008, the plant species was sighted in Bangladesh for the first time.
- It was under serious threat due to habitat loss and reduction in the number of mature individuals in Bangladesh.

Hoplobatrachus Tigerinus

- It is commonly known as bull frog, native to the Indian subcontinent (Afghanistan, Bangladesh, India, Myanmar, Nepal and Pakistan).
- It is the largest frog in India.
- It is listed as least concern species under IUCN red list.
- It is placed under Indian Wildlife Act 1972: Schedule IV (protection with lesser penalties)
- Indian bullfrog tadpoles are carnivorous and eat other tadpoles (including their own species).
- Bullfrogs eat the native frogs as well and their diets overlap, indicating a possibility of competition.
- It is one of the invasive species on the islands of Andaman and Nicobar.

Globba andersonii

- A team of researchers from Pune and Kerala have “rediscovered” a rare and critically endangered plant species called *Globba andersonii*.
- It is rediscovered from the Sikkim Himalayas near the Teesta river valley region after a gap of nearly 136 years.
- The plant, known commonly as ‘dancing ladies’ or ‘swan flowers’ was thought to have been extinct until its “re-collection”, for the first time since 1875.
- Classified as “critically endangered” and “narrowly endemic”.
- The species is restricted mainly to Teesta River Valley region which includes the Sikkim Himalayas and Darjeeling hill ranges.
- *Globba andersonii* are characterized by white flowers, non-appendage anthers (the part of a stamen that contains the pollen) and a “yellowish lip”.

Kongonaphon kely Fossils

- Kongonaphon kely or tiny bug slayer was an extremely small ancestor to dinosaurs and pterosaurs (extinct flying reptiles).
- The fossils of Kongonaphon Kely were discovered in 1998 as part of an expedition by an American–Malagasy crew made in Madagascar.
- Analysis of body size throughout the history of dinosaurs shows that ancestrally medium-sized animals evolved into very small animals.
- Kongonaphon, a triassic vertebrate would have been around 10 cm tall and about 30 cm long.



- This then evolved into dinosaurs and pterosaurs which could reach enormous sizes.
- From this study, it is concluded that all flying animals seem to have evolved from very small ancestors.
- Around 237 million years ago, Madagascar was directly attached to India as part of the supercontinent Gondwana.
- In India, Triassic vertebrate fossils of similar age have been found in a band of rocks extending across Madhya Pradesh, Chhattisgarh and Odisha, but thus far nothing like Kongonaphon has been found there.

Narcondam Hornbill

- Narcondam Hornbill is endemic to the Narcondam Island in Andamans.
- It is a fairly small hornbill species, with a black body and distinct short, white tail.
- The Important Bird and Biodiversity Area (IBA) of these hornbill species in India is the Narcondam Island Wildlife Sanctuary.
- The natural ecosystems of these species include tropical and subtropical moist lowland forests, open mixed forests and tropical and sub-tropical moist shrublands.
- It is listed as 'Endangered' under the IUCN Red List of Threatened Species.
- The CITES status is 'Evaluated' for the Narcondam hornbill and is listed in Appendix II.



Kola Bears

- According to recent study Koalas in the Australian could become extinct by 2050 unless the government immediately intervenes to protect them and their habitat.
- Koala bear is a "marsupial" which is a mammal with a pouch for the development of offspring.
- They are found in the eucalyptus forests of eastern Australia.
- They have grey fur with a cream-coloured chest, and strong, clawed feet, perfect for living in the branches of trees.
- It is listed as 'Vulnerable' as per the IUCN Red List of Threatened Species.

23. SCIENCE AND TECHNOLOGY

SPACE

Lithium

- Lithium, a light element commonly used today in communication device technology.
- It was first produced in the Big Bang, around 13.7 billion years ago when the universe came into being, along with other elements.
- 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.

Helium Flash in Stars

- A forty-year-old puzzle regarding the production of lithium in stars has been solved by Indian researchers.
- 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.
- When stars grow beyond their Red Giant stage into what is known as the Red Clump stage, they produce lithium in what is known as a Helium Flash and this is what enriches them with lithium.

South Pole Wall

- Spectacular 3D maps of the universe have revealed inconceivable wall known as South Pole Wall.
- It stretches 1.4 billion light-years across that contains hundreds of thousands of galaxies.
- One light-year is roughly 6 trillion miles, or 9 trillion kilometers, so this "biggest cosmic structure" is mind-bendingly humongous.
- It has been hiding in plain sight, remaining undetected until now because large parts of it sit half a billion light-years away behind the bright Milky Way galaxy and Zone of Avoidance.
- Zone of Avoidance is the disc of our home galaxy, a region thick and bright with dust and gas and stars.
- The South Pole Wall rivals in size the Sloan Great Wall, the sixth largest cosmic structure discovered.
- Other, larger such walls is the Hercules-Corona Borealis Great Wall, which spans 9.7 billion light-years.

Cosmic Web

- Astronomers have long noticed that galaxies are not scattered randomly throughout the universe but rather clump together in what's known as the cosmic web.
- Cosmic web is enormous strands of hydrogen gas in which galaxies are strung like pearls on a necklace that surround gigantic and largely empty voids.
- Mapping these intergalactic threads belongs to the field of cosmography, which is "the cartography of the cosmos".

Solar Orbiter Mission

- Solar Orbiter is a joint ESA & NASA mission to study the Sun.
- It was launched in February 2020
- Solar Orbiter will address big questions in Solar System science like how our star creates and controls the giant bubble of plasma that surrounds the whole Solar System and influences the planets within it.
- Recently scientists from NASA and ESA (European Space Agency) released first data captured solar orbiter.
- In mid-June, Solar Orbiter made its first close pass of the Sun, it has captured the closest images ever taken of the Sun.

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 (7 mi) and is seven times as massive as the outer moon, Deimos.
- It is largely believed to be made up of carbonaceous chondrites.
- It is so close that it orbits Mars much faster than Mars rotates, and completes an orbit in just 7 hours and 39 minutes.
- Recently, The Mars Colour Camera (MCC) onboard ISRO's Mars Orbiter Mission has captured the image of Phobos, the closest and biggest moon of Mars.
- According to ISRO, the violent phase that Phobos has encountered is seen in the large section gouged out from a past collision (Stickney crater) and bouncing ejecta.
- Shklovsky, Roche, and Grildrig are other craters.

Asteroid 2020 ND

- NASA has issued a warning that a huge Asteroid 2020 ND is expected to move past the Earth.
- It will be as close as .034 astronomical units (5,086,328 kilometers) to our planet.
- It is travelling at a speed of 48,000 kilometers per hour.
- Its distance from Earth has placed it in the potentially dangerous category.
- Potentially Hazardous Asteroids (PHAs) are those with a minimum orbit intersection distance (MOID) of 0.05 au or less.
- NASA classifies these objects as near-Earth objects (NEOs).
- However, it is not necessary that asteroids classified as PHAs will impact the Earth.
- It only means there is a possibility for such a threat.

Mission Hope

- United Arab Emirates' (UAE) first mission to Mars "Hope" was recently launched successfully from Japan Tanegashima Space Center.
- The mission was announced in 2015 with the aim of creating mankind's first integrated model of the Red planet's atmosphere.
- It is the Arab world's first mission to Mars and also first interplanetary mission.
- The Al Amal probe, as it is called in Arabic, is expected to reach Mars by February 2021.
- The probe will stay in orbit for a Martian year, equivalent to 687 days on Earth, to gather data about Mars' atmosphere.
- It will carry the following scientific instruments mounted on one side of the spacecraft -
 1. High-resolution camera called Emirates eXploration Imager (EXI),
 2. Far-UV imaging spectrograph called Emirates Mars Ultraviolet Spectrometer (EMUS), and
 3. Emirates Mars InfraRed Spectrometer (EMIRS) and FTIR scanning spectrometer.

Venus Coronae

- Researchers have recently studied the formation of Venus' ring-shaped volcanic structures called "Coronae".
- They are formed by plumes of molten rock rising from the mantle up through the crust.
- This process is similar to how Earth's volcanoes function.
- Interestingly, most of Earth's volcanism occurs along the boundaries of tectonic plates, but modern Venus doesn't seem to possess tectonic plates.
- They identified three dozen features on Venus, which they state could have been created by volcanism.
- If this is true then it will potentially reshape our understanding about the planet and its evolution.
- Venus was earlier determined to be an inactive planet. However, now it is being said that the interior is still churning and can feed many active volcanoes.

Tianwen 1

- China National Space Administration (CNSA) has recently launched its first Mars probe named Tianwen 1 or Quest for Heavenly Truth 1.
- It aims to complete orbiting, landing and roving in a single mission.
- It used China's largest and most powerful launch vehicle Long March-5 rocket for the mission.
- The three scientific objectives -
 1. Orbiting the red planet for comprehensive observation,

- 2. Landing on Martian soil
- 3. Sending a rover to roam the landing site.
- It will conduct scientific investigations into the planet's soil, geological structure, environment, atmosphere and water, media reports said.
- It should arrive in orbit around the red planet in February 2021.
- China's previous attempt to send an exploratory probe to Mars called Yinghuo-1, in a Russian spacecraft in 2011 was failed.

Inter-planetary Contamination in Mars

- Recently, astrobiologists have expressed concerns about possible 'interplanetary contamination' on Mars.
- Interplanetary contamination refers to biological contamination of a planetary body by a space probe or spacecraft, either deliberate or unintentional.
- In the past, space missions have established physical contact with astronomical bodies such as comets and asteroids, and crewed missions have landed on the Moon.
- However, since these bodies are known to be hostile to life, the possibility of their contamination has not been a pressing issue.
- **Type of Contaminations**
 - a) Forward Contamination- It means the transport of Earth-based microbes to other celestial bodies.
 - b) Back Contamination - It is the transfer of extraterrestrial organisms (if they exist) into the Earth's biosphere.
- 'Planetary protection policy' aims to limit the number of microbes sent to other planets, as well as ensuring that alien life does not cause havoc on Earth.
- The policy was laid down by Committee on Space Research (COSPAR) established by International Council for Science (ICSU).

DEFENCE

DRDO Jets for Indian Navy

- Indian Navy expects to have the first Indigenous Aircraft Carrier (IAC-I) Vikrant operational by 2022.
- It currently operates Russian-origin carrier INS Vikramaditya
- With a second carrier to come in, the Navy is already evaluating a global tender for 57 carrier-based twin-engine fighter aircraft.
- Based on new demand, DRDO has offered to develop a twin-engine deck-based fighter for the Navy, which will be ready by 2026.
- It will replace the MiG-29Ks in service which are scheduled to start going out by 2034.

Heron UAV

- The IAI Heron is a medium-altitude long-endurance unmanned aerial vehicle (UAV) developed by the Israel Aerospace Industries.
- It is capable of Medium Altitude Long Endurance (MALE) operations of up to 52 hours' duration at up to 10.5 km (35,000 ft).
- It has demonstrated 52 hours of continuous flight, but the effective operational maximal flight duration is less, according to payload and flight profile.
- Heron unmanned aerial vehicles are already in use with Indian Air Force, Navy, and the Army.
- It is being used extensively at the moment by both Army surveillance and Air Force in the Ladakh sector.

- Indian forces are working towards inducting an armed version of the UAV, under the ambitious 'Project Cheetah' spearheaded by the Indian Air Force.

Spike Missiles

- Spike is an Israeli fire-and-forget anti-tank guided missile and anti-personnel missile.
- It was developed and designed by the Israeli company Rafael Advanced Defense Systems.
- It is available in man-portable, vehicle-launched, and helicopter-launched variants.
- Indian Army is planning to place orders for more Spike anti-tank guided missiles from Israel under the emergency financial powers granted to the services.

Man-Portable Anti-Tank Guided Missile (MP-ATGM)

- The MPATGM, or Man Portable Anti-Tank Guided Missile, is an Indian third-generation fire-and-forget anti-tank guided missile derived from Nag ATGM.
- It is currently under development by the DRDO.
- It is fitted with high-explosive anti-tank (HEAT) warhead.
- The MPATGM is equipped with an advanced imaging infrared (IIR) sensor and integrated avionics.
- It reportedly share many similarities with Spike (ATGM).

Indo-US PASSEX

- Indian navy conducted a Passage Exercise (PASSEX) with the U.S. Navy's USS Nimitz carrier strike group.
- It was conducted near the Andaman and Nicobar Islands as it is transiting the Indian Ocean.
- Nimitz, is the U.S. Navy's largest aircraft carrier, was returning from the South China Sea through the Malacca Straits.
- Front line Indian Naval Ships - Shivalik, Sahyadri, Kamorta and Rana
- The exercise comes amid a high alert in the Indian Ocean Region due to the stand-off with China along the border in Ladakh.
- Indian Navy had conducted similar PASSEXs with the Japanese Navy and the French Navy in the recent past.

Solar Power Plant of Navy

- Recently Indian Navy inaugurated 3 MW Solar Power Plant at Indian Naval Academy, Ezhimala.
- The solar plant is the largest in the Indian Navy and has an estimated life of 25 years.
- This is in line with the 'National Solar Mission' to achieve 100GW of solar power by 2022.
- All components have been indigenously sourced, including 9180 highly efficient monocrystalline solar panels employing the latest technology.
- The project has been executed by Kerala State Electronics Development Corporation Ltd (KELTRON)

Tsirkon Hypersonic N-Missile

- Russian administration announced on Russian Navy would be equipped with hypersonic nuclear strike weapons and underwater nuclear drones.
- Tsirkon hypersonic cruise missile is designed to be carried on surface ships, it is under final phase of testing.
- The combination of maneuverability, speed, and altitude of the hypersonic missiles makes them capable of traveling at more than five times the speed of sound and therefore difficult to track and intercept.
- Poseidon underwater nuclear drone is intended to be carried by submarines is another weapon under testing.

Dhruvastra

- Recently trials of India's Helicopter-launched Nag Missile anti-tank guided missile (HELINA), were successfully conducted.
- HELINA now known as Dhruvastra, is developed by DRDO.
- It is a third-generation fire and forget class anti-tank guided missile (ATGM) system that has been mounted on the Advanced Light Helicopter (ALH).
- The system consists of all the weather day and night capability and can easily defeat battle tanks with a conventional armor and explosive reactive armor.
- The missile can also engage targets both in the direct hit mode and as well as top attack mode.

Malabar Exercise

- EX-Malabar began as a bilateral naval exercise between India and the U.S. in 1992.
- It was expanded into a trilateral format with the inclusion of Japan in 2015.
- India did not include Australia in the exercises in 2018 and 2019, while the bilateral AUSINDEX naval exercise expanded in scope and complexity.
- India is planning to include Australia in Ex-Malabar.

Quadrilateral Security Dialogue

- The Quadrilateral Security Dialogue (QSD, also known as the Quad) is an informal strategic forum between the USA, Japan, India and Australia.
- It is maintained by semi-regular summits, information exchanges and military drills between member countries.
- The dialogue was paralleled by joint military exercises of an unprecedented scale, titled Exercise Malabar.
- The diplomatic and military arrangement was widely viewed as a response to increased Chinese economic and military power.

Pinaka Ammunition

- The Pinaka weapon system is an all-weather, indirect fire, free flight artillery rocket system.
- It consists of Multi Barrel Rocket launcher, Battery Command Post, Loader cum Replenishment Vehicle, Replenishment Vehicle and Digi Cora MET Radar.
- It is developed by Defence Research and Development Organization (DRDO).

Astra Missiles

- Astra missiles are Beyond Visual Range (BVR) air-to-air missile.
- It is designed to be mounted on a fighter aircraft and is also designed to engage and destroy highly manoeuvring supersonic aircraft.
- It has a range of over 70 km and can fly towards its target at a speed of over 5,555 km per hour.
- The missile has all-weather day and night capability.
- The missile has been indigenously developed by DRDO, along with almost 50 other public and private organizations.

HEALTH

Plasma Bank

- For the first time in India, Delhi Administration has inaugurated a plasma bank in the city and urged recovered Covid-19 patients to donate their plasma.

- Delhi's Plasma Bank is opened at the Institute of Liver and Biliary Sciences (ILBS).
- The Plasma Bank is a first-of-its-kind initiative in the entire country and appealed to recovered patients to donate their plasma.
- The recovered Covid-19 patients can donate their plasma after 14 days of their COVID-19 negative report.
- A healthy person between the age group of 18-60 years and with no comorbidities can be a donor and the patient should have recovered at least three weeks before donating and tested negative for Covid-19 twice.

G4 Virus

- Recently, scientists have identified a “newly emerged” strain of influenza virus that is infecting Chinese pigs and that has the potential of triggering a pandemic.
- Named G4, scientists believe that it has descended from the H1N1 strain that was responsible for the 2009 swine flu pandemic.
- A Pandemic happens if a new strain emerges that can easily spread from person to person.
- It has the capability of binding to human-type receptors (like, the SARS-CoV-2 virus).
- However, it is not clear whether the new strain can transmit from one human to another.

H1N1 Pandemic

- Swine flu is a respiratory disease of pigs, caused by a strain of H1N1 virus, which was transmitted from human to human.
- It was known in the past to occur in people who had been in the vicinity of pigs.
- While humans typically do not get infected by such a virus that circulates among pigs, when they do, it is called “variant influenza virus”.
- The virus is transmitted by short-distance airborne transmission, particularly in crowded enclosed spaces.
- The treatment includes antiviral therapy with medicines like Oseltamivir (Tamiflu), peramivir (Rapivab).

Human Growth Hormone

- Human Growth Hormone (hGH) is produced in the body and secreted by the pituitary gland near the base of the brain.
- HGH helps in bone, organ and cartilage growth and also helps in repairing damaged muscles.
- When the gland releases the growth hormone, it results in the secretion of a protein called IGF-1 from the liver.
- The IGF-1 protein is what ultimately stimulates the growth of bones, muscle, and other tissues.
- hGH is banned both in-competition as well as out-of-competition by the World Anti-Doping Agency (WADA) as hGH is known to increase muscle mass, strength as well as tissue-repairing effects.
- Recently a 2018 Commonwealth Games silver medalist, has been handed a provisional four-year suspension after his blood sample tested positive for human Growth Hormone (hGH).

Inflammageing

- Inflammageing refers to the inhibition of one's immunity as the body's inflammation reaches higher levels as one ages.
- As this happens, our bodily defence systems respond more slowly to bacterial and viral infections, leaving the elderly more vulnerable.
- It is characterized by chronic low-grade inflammation, which occurs without an infection.
- While inflammation is essential to the immune response, inflammageing is not.

- The state of elevated inflammation can worsen many age-related diseases, and further inhibit the response from an already declining immune system.
- The most severe Covid-19 cases have occurred mostly in older people, researchers are investigating whether inflammation has a role.

Bio-Markers

- A biomarker is a characteristic that is objectively measured and evaluated as an indicator of normal biological processes, pathogenic processes or pharmacological responses to a therapeutic intervention.
- Biomarkers may be used alone or in combination to assess the health or disease state of an individual.
- Researchers at the Cancer Institute (WIA) have identified a panel of five protein markers in the blood that can help with an early diagnosis of a common and lethal form of ovarian cancer.
- Combination of five markers - CA125, IGFBP2, SPP1, TSP1 and ADI were used for the study.

Ovarian Cancer

- Ovarian cancer affects the female organs that produce eggs (ovaries).
- Ovarian cancer often goes undetected until it has spread within the pelvis and stomach.
- At this late stage, ovarian cancer is more difficult to treat and can be fatal.
- Ovarian cancer often has no symptoms in the early stages.
- Later stages are associated with symptoms, but they can be non-specific, such as loss of appetite and weight loss.
- The symptoms of this cancer tend to mimic other gastrointestinal conditions acidity, ascites or a bloated feeling.
- Surgery and chemotherapy are generally used to treat ovarian cancer.
- The crude incidence rate for ovarian cancer in India is 5 to 6 per 1,00,000. Stage IIIC cancers account for nearly 75%, with survival among them being around 30-40%.

Latent Virus

- A latent viral infection is an infection that is inactive or dormant.
- Latent infections are essentially static which last the life of the host and occur when the primary infection is not cleared by the adaptive immune response.
- Examples are
 - a) Herpes simplex viruses type 1 and 2,
 - b) Varicella-zoster virus,
 - c) HIV,
 - d) Epstein-Barr virus (human herpesvirus 4),
 - e) Cytomegalovirus.
- Latent viral infections can be reactivated into a lytic form (the replication of a viral genome).
- The ability to move back and forth from latent to lytic infections helps the virus spread from infected individuals to uninfected individuals.
- Scientists speculate that SARS-CoV-2 is a latent virus infection which can recur.

Kawasaki Disease

- Around the world, children with Covid-19 infection have often shown some symptoms similar to those associated with a rare illness called Kawasaki disease

- It typically affects children aged under five with symptoms like red eyes, rashes, and a swollen tongue with reddened lips often termed strawberry tongue and an inflamed blood vessel system all over the body.
- There is constant high fever for at least five days, it also affects coronary functions in the heart.
- The causes of the Kawasaki Disease are not yet known.
- The strawberry tongue may or may not be present in those with Covid-19.
- In Covid-19 cases, even adolescents are presenting these symptoms.
- Steroids remain a key treatment to reduce inflammation.

Report on API's

- Active Pharmaceutical Ingredient (API) is a substance or mixture of substances contained in a medicine that is intended to cause pharmacological activity.
- Technology Information, Forecasting and Assessment Council (TIFAC) has recently released a report on 'Active Pharmaceutical Ingredients'.
- Highlights - The pharmaceutical industry in India is third largest in the world, in terms of volume, behind China and Italy, and fourteenth largest in terms of value.
- However due to availability of cheap imports, the local manufacturing of APIs is very less.
- Of the total imports of APIs and intermediates into India, China accounts for 65-70%.
- The report has recommended to create mega drug manufacturing clusters with common infrastructure in India.
- Along with the report, a white paper titled 'Focused Interventions for Make in India : Post COVID 19' was also released.

OTHERS

Zinc Gluconate

- Element Zinc is vital for maintaining normal bone homeostasis, and its levels are reported to get reduced in rheumatoid arthritis patients and arthritis-induced animals.
- It is also known that oral supplementation of zinc in the form of zinc gluconate have very low bioavailability in humans.
- Institute of Nano Science & Technology (INST) has formulated nanoparticles with chitosan and loaded these nanoparticles with zinc gluconate for reducing the severity of rheumatoid arthritis.
- Zinc gluconate-loaded chitosan nanoparticles exerted superior therapeutic effects compared to the free form of zinc gluconate.
- Chitosan is nontoxic, biocompatible, biodegradable natural polysaccharide.
- It is one of the most abundant biopolymers obtained from the exoskeleton of crustaceans have shown absorption promoting characteristics.

SHUDH

- IIT Kanpur has developed an Ultraviolet (UV) sanitizing product named SHUDH.
- It is a smartphone operated Handy Ultraviolet Disinfection Helper (SHUDH).
- It has six UV lights of 15 Watts each that can be individually monitored from a distance.
- The device at its full operation can disinfect a 10x10 squared feet room in about 15 minutes.
- SHUDH can assist in killing the spread of corona virus at the highly prone places such as hospitals, hotels, malls, offices and schools.

Innovation in Super Capacitor

- Super Capacitor / Ultra capacitors are next-generation energy storage device.
- They have ultrafast charging characteristic as compared to conventional capacitors and lithium-ion batteries (LIB).
- In a super capacitor, electrode, electrolyte are the pivotal components which directly determine the electrochemical behavior of the super capacitors.
- Recently International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) has developed a low-cost, environmentally friendly, super capacitor electrode.
- It is derived from industrial waste cotton which can be used as an energy harvester storage device.
- Natural seawater is explored as an alternative aqueous electrolyte.
- It may replace the existing aqueous-based electrolytes for the economic fabrication of supercapacitor.
- The device shows great potential for practical application, and integration with solar cell.



ITER

- International Thermonuclear Experimental Reactor (ITER) is world's largest experimental fusion facility in France.
- It is most complex science project in human history, started in 2010.
- It will use hydrogen fusion, controlled by superconducting magnets, to produce massive heat energy.
- The magnetic fusion device has been designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy based on the same principle that powers our Sun and stars.
- This nuclear fusion facility is an international cooperation among the European Union, Russia, the US, Japan, China, India and South Korea.
- It is the first industrial-scale fusion reactor and it will illuminate the way to produce clean, cheap, and abundant energy for millions of years.
- It will start generating a molten mass of electrically-charged gas "plasma" inside a core by 2025.

24. INDEX AND REPORT

State of the World Population 2020 Report

- It was developed during the initial stages of the pandemic by UNFPA.
- The report examines the issue of missing women by studying sex ratio imbalances at birth as a result of gender-biased sex selection as well as excess female mortality due to deliberate neglect of girls because of a culture of son preference.
- According to the report
- One in 9 females below the age of 5 die due to postnatal sex selection
- One in 3 girls missing globally due to sex selection, both pre- and post-natal, is from India (46 million out of the total 142 million).
- However, the advent of technology and increased access to ultrasound imaging ensured that parents didn't have to wait for the birth of their girl child to kill her but could terminate a fetus upon knowing its gender.

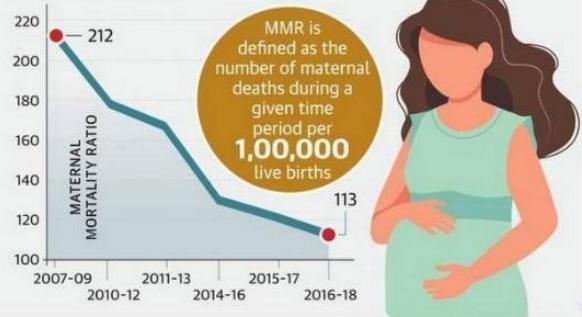
- This resulted in the number of girls missing due to female feticide exceeding those that were missing because of postnatal sex selection.

Maternal Mortality Ratio

- Special bulletin on Maternal Mortality in India 2016-18 is released by the Office of the Registrar General's Sample Registration System (SRS).
- MMR is defined as the number of maternal deaths per 1,00,000 live births.
- According to recent report MMR in India has declined to 113 in 2016-18 from 122 in 2015-17 and 130 in 2014-2016.
- Northern states registered a higher MMR: Assam (215), Bihar (149), Madhya Pradesh (173), Chhattisgarh (159), Odisha (150), Rajasthan (164), Uttar Pradesh (197) and Uttarakhand (99).
- The southern states registered a lower MMR: Andhra Pradesh (65), Telangana (63), Karnataka (92), Kerala (43), and Tamil Nadu (60).
- The target 3.1 of UN Sustainable Development Goals (SDG) aims to reduce the global maternal mortality ratio to less than 70 per 1,00,000 live births.
- As per the WHO, maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management.

Healthy trend

The maternal mortality ratio (MMR) between 2016 and 2018 dropped to 113 in India, almost 100 deaths lesser than in the 2007-2009 period



Infant Mortality Rate

- Infant mortality is the death of young children under the age of 1 per 1000 live births.
- The under-five mortality rate, which is referred to as the child mortality rate whereas the infant mortality rate focuses only on children under one year of age.
- Premature birth is the biggest contributor to the IMR.
- Leading causes - birth asphyxia, pneumonia, term birth complications such as abnormal presentation of the fetus umbilical cord prolapse, or prolonged labor, neonatal infection and etc.
- Many factors contribute to infant mortality, such as the mother's level of education, environmental conditions, and political and medical infrastructure.
- The infant mortality rate (IMR) in Madhya Pradesh, recording the country's worst rate for years now.
- IMR in MP has surged by a single point over the previous year to 48 in 2018.
- In rural MP, 52 died per 1,000 live births (Infant mortality rate) and 36 in urban area.
- The country's average stands at 36 deaths for rural and 23 for urban areas.

State of food security and nutrition in the world

- The State of Food Security and Nutrition in the World (SOFI) 2020 report was released on the sidelines of the High-Level Political Forum (HLPF) on Sustainable Development.
- It is produced jointly by the
 1. Food and Agriculture Organization (FAO),
 2. International Fund for Agricultural Development (IFAD),
 3. United Nations Children's Fund (UNICEF),
 4. UN World Food Programme (WFP)
 5. World Health Organization (WHO).

6. Its first edition was brought out in 2017.

Highlights of the report are as follows

1. The world is not on track to meet the goal of zero hunger by 2030 i.e. SDG2.
2. Between 8.3 crore and 13 crore people globally are likely to go hungry this year due to the economic recession triggered by COVID-19.
3. Hunger continues to be on the rise since 2014 and the global prevalence of undernourishment, or overall percentage of hungry people, is 8.9%.
4. Almost 69 crore people went hungry in 2019 up by 1 crore in 2018
5. Asia remains home to the greatest number of undernourished (38 crore).
6. Africa is second (25 crore), followed by Latin America and the Caribbean (4.8 crore).
7. A healthy diet costs more than Rs. 143 (or \$1.90 / day), which is the international poverty threshold.
8. The number of people globally who can't afford a healthy diet is at 300 crore people, or more than the combined population of China and India.

Global Real Estate Transparency Index

- GRETI is released by Jones Lang LaSalle's (JLL), a global real-estate firm.
- JLL has been tracking real estate transparency since 1999, the recent GRETI edition covers 99 countries and territories, and 163 city regions.
- The rankings have six Asia Pacific markets, among the top 10 biggest improvers globally.
 1. Mainland China (32nd),
 2. Thailand (33rd),
 3. India (34th),
 4. Indonesia (40th),
 5. Philippines (44th)
 6. Vietnam (56th)
- India's higher levels of ranking are due to regulatory reforms, enhanced market data, and sustainability initiatives.
- India has also edged into the top 20 for Sustainability Transparency through the active role of Indian Green Building Council and Green Rating for Integrated Habitat Assessment (GRIHA)
- GRIHA is a national rating system for green buildings that is adopted while designing and evaluating new buildings.

Household Social Consumption: Education Survey

- National Statistical Office (NSO) has report on "Household Social Consumption: Education".
- The report surveyed 1.13 lakh households spread across over 8,000 villages and 6,000 urban blocks between July 2017 and June 2018.
- Highlights of the report
 1. **Digital divide** - Only 4% of the rural households having access to computers as compared to 23% in urban areas.
 2. Education accessibility –
 3. **Primary School** - 92.7% of the rural households have a primary school within 1 km as compared to 87.2% in urban areas.
 4. **Secondary School** - 38% of the rural household have access to secondary school as compared to 70% in the urban areas on similar parameters.

5. **Attendance ratio** - Gross attendance ratio is nearly 100% of boys and girls in rural as well as urban areas attending classes.
6. **Literacy rate** - The all India literacy rate among persons aged 7 years and above is 77.7% with rural literacy (73.5%) and urban literacy (87.7%).
7. **Internet access** - 15% in the rural cluster and 42% in the urban areas have access to the internet.

Report on Immunization among Children

- National Statistical Office (NSO) released a report on immunization among children.
- The survey was conducted during July 2017-June 2018.
- **Highlights of the report -**
 1. Around 60% of children under five years of age were fully immunized.
 2. This includes about 59% of boys and 60% of girls across the country who had been fully immunized with all eight prescribed vaccinations (BCG, OPV- 1, 2,3, DPT- 1,2,3 and measles).
 3. In rural India (58%) and Urban (62%) were fully immunized.
 4. Majority of the children received vaccination from government hospitals or clinics.

Global Forest Resources Assessment

- Global Forest Resources Assessment is released by the United Nations Food and Agriculture Organization (FAO), every five years since 1990.
- This report assesses the state of forests, their conditions and management for all member countries.

Highlights of 2020 report -

1. 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.
2. In India the forest area managed by local, tribal and indigenous communities in India increased from zero in 1990 to about 25 million ha in 2015.
3. The area of naturally regenerating forests worldwide decreased since 1990, but the area of planted forests increased by 123 mha.
4. Africa had the largest annual rate of net forest loss in 2010–2020, at 3.9 mha, followed by South America, at 2.6 mha.
5. On the other hand, Asia had the highest net gain of forest area in 2010–2020, followed by Oceania and Europe.
6. The largest proportion of the world's forests were tropical (45%), followed by boreal, temperate and subtropical.

World Drug Report

- It is released by United Nations Office on Drugs and Crime (UNODC).
- It is an annual publication that analyzes market trends, compiling detailed statistics on drug markets.
- According to recent report, in the last five years about 84% of the global opium production came from Afghanistan.
- The fourth highest seizure of opium in 2018 was reported from India, after Iran, Afghanistan and Pakistan.
- In terms of heroin seizure (1.3 tones), India was at the 12th position in the world.
- Again, Iran reported the highest seizure of heroin, followed by Turkey, United States, China, Pakistan and Afghanistan.
- The main opiate trafficking flows originate from three key production areas - Afghanistan, Myanmar-Laos and Mexico-Colombia-Guatemala.

SDG Index

- SDG Index is prepared by teams of independent experts at the Sustainable Development Solutions Network (SDSN).
- The SDG index frames the implementation of 17 SDG goals among UN member states in terms of six broad transformations:
 1. Education and skills,
 2. Health and wellbeing,
 3. Clean energy and industry,
 4. Sustainable land use,
 5. Sustainable cities,
 6. Digital technologies
- According to recent report, Sweden is placed at the top of the index with an overall score of 84.7.
- Among 193 countries for which the SDG index was prepared, India stands at the 117th position with an overall score of 61.92.
- In south Asia, Maldives is ranked at 91, Sri Lanka at 94, Nepal at 96 Bangladesh at 109 and Pakistan at 134.
- Bangladesh moves 7 places up in latest SDG index for year 2020, with a score of 63.5.